

# The Dark Side of the Tomb:

A landscape study utilizing archaeological excavation, multi-modal geophysical survey and imaging techniques of the Neolithic and Early Bronze Age monuments on the Isle of Anglesey, North Wales.

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PhD 2021

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A thesis submitted in fulfilment of the requirements of Manchester Metropolitan University for the degree of Doctor of Philosophy

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# Declaration

I declare that this thesis is an original report of my research, has been written by me and has not been submitted for any previous degree. The experimental work is almost entirely my own work; the collaborative contributions have been indicated clearly and acknowledged. Due references have been provided on all supporting literatures and resources. I declare that this thesis was composed by myself, that the work contained herein is my own except where explicitly stated otherwise in the text, and that this work has not been submitted for any other degree or professional qualification.

Signed: 

Date: 21/08/2021

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I would like to dedicate this PhD thesis to Aubrey Burl, an archaeologist who studied megalithic monuments, prehistoric ritual and one of my favourite archaeological writers who sadly died during the writing of this thesis.

I would also like to dedicate this PhD to my parents Mike & Sharon Woods, my partner Sophie Berry, the Ancestors and the people of Anglesey.



# Abstract

The study of prehistoric monuments on the Isle of Anglesey has a long history dating back to at least the 18<sup>th</sup> century, despite this the area surrounding these monuments have seen little to no invasive archaeological investigation. This PhD research project utilises geophysical surveys to investigate the landscape surrounding four Late Neolithic/Early Bronze Age monuments at Bryn Celli Ddu, Ty Newydd, The Llanfechell Triangle and the Penbodeistedd Stone.

The surveys at Bryn Celli Ddu discovered burials associated with the Bronze Age, a stone circle, and a developed Iron Age settlement. The survey at Ty Newydd discovered a Bronze Age cemetery that shares the ridge with the extant megalithic monument. The survey at The Llanfechell Triangle discovered anomalies associated with satellite burials of Bronze Age date and a trackway of ancient date that links the site to a Bronze Age cemetery to the northeast. The results of the survey at the Penbodeistedd stone suggest that this standing monolith was once part of a stone circle. An excavation was carried out at the newly discovered site known as Bedd Y Foel which uncovered evidence proving that this site is a badly destroyed megalithic tomb of Neolithic date.

The results of this thesis have uncovered significant findings at each of the study sites including an Iron Age settlement, possible stone circles and a previously undiscovered megalithic tomb. These findings bring new insights into the prehistoric period of Anglesey and showcase the need for further study on the island.

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# Chapter 1: Introduction

The Isle of Anglesey in North Wales is home to one of the highest concentrations of Neolithic and Early Bronze Age ritual monuments in Europe, these sites include passage tombs, henge monuments, standing stones, stone circles and cup and ring rock art which can be found across the island, and it is these types of monuments that are the focus of this research project (Lynch, 1991).

Geophysical surveys carried out in 2017 around the reconstructed Neolithic passage tomb, stone circle and henge monument at Bryn Celli Ddu revealed several smaller burials sharing the upland ridge that the tomb, and the neighbouring later Bronze Age burial known as Bryn Celli Ddu Bach, were built upon. It was these surveys that were the genesis of this doctoral research project and the first in a number of geophysical surveys that studied the wider landscapes at Bryn Celli Ddu, the megalithic tomb known as Ty Newydd and the standing stones at Llanfechell. This work culminated in excavations that were carried out at the newly discovered Neolithic/Early Bronze Age rock art site atop the outcrop known as The Foel at Llanerchymedd in 2020 and 2021 – work which uncovered prehistoric artefacts and architectural evidence that proved that one of these rock art panels was formerly the capstone of a Neolithic burial monument.



*Figure 1: Map showing locations of sites studied as part of this research project.*

The objectives of this project are twofold: with the primary objective being to broaden the understanding of the Late Neolithic (2,900-2,300 BC) and Early Bronze Age (2,300-1,600 BC) periods (Lynch et. al. 2000, pp. 1) and the ritual monuments of Anglesey from the scale of individual and visible sites to an appreciation of the entire landscape, including currently buried/undiscovered features. The secondary objective will test the utility and interoperability of multi-modal forms of survey - including LiDAR, geophysical survey, archaeological excavation, GIS, aerial imagery, 3D photogrammetry and 3D printing in order to better understand these archaeological landscapes and to better present these findings to the public.

The prehistoric monuments of North Wales have a long history of antiquarian and archaeological study dating back to at least the 17<sup>th</sup> century and the burial monuments of Anglesey have yielded a wealth of archaeological data which has enabled archaeologists to establish a framework of typological features which are used to categorize these ritual sites. Despite the mass of data recovered from the extant tombs, many of Anglesey's Neolithic and Bronze Age megalithic monuments have defied confident categorization within existing typological frameworks. With the development of advanced scientific techniques for dating archaeological remains such as radiocarbon dating, we can establish a prehistoric timeline and begin to understand the chronology and development of these monuments and ritualised landscapes. This thesis examines a combination of the landscapes around known monuments,

such as Bryn Celli Ddu, the Llanfechell Triangle, Ty Newydd, and adds to the corpus of sites with brand new discoveries, such as the unknown tomb at Bedd-y-Foel. As shall be demonstrated, this new evidence sometimes strengthens the typological frameworks established by earlier researchers, but also questions these categorizations. However, to fully appreciate and interpret these monuments we must first consider the periods before the Neolithic and examine the evidence for early human activity in North Wales to understand the development of material culture and the cultural evolution of the ritual landscape on the Isle of Anglesey.

### The Geology of Anglesey

The Isle of Anglesey was geologically formed 650-300 million years ago, and the complex geological strata of the island has been studied by geologists and earth scientists since Edward Greenly published the first geological map of the island in the 1920s (see Figure 2). This patchwork of rock formations forms diagonal areas of different geological materials running north-east/south-west across the island has since been used as one of the most reliable sources of data regarding the large-scale tectonic movements which formed the southern British Isles during the fragmentation of the supercontinent known as Pangea (Philips 1991).



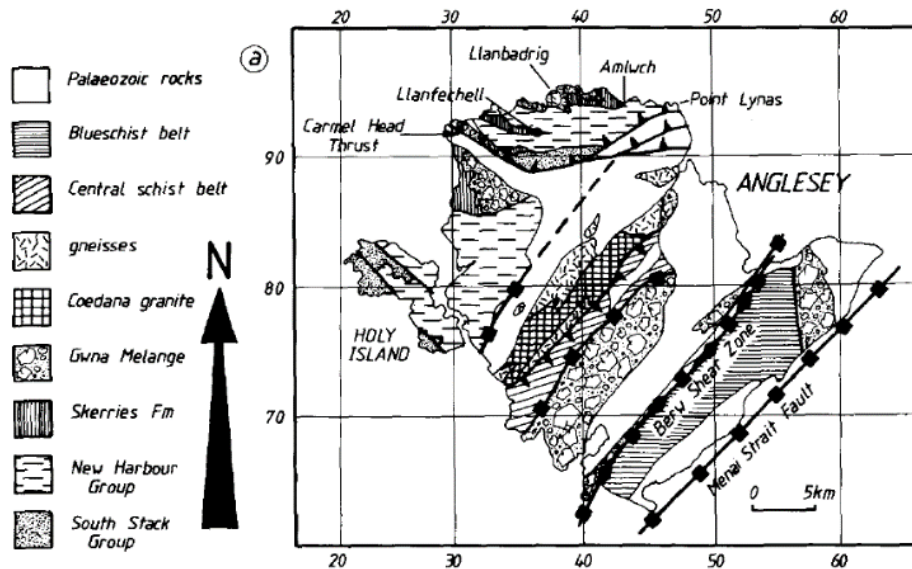


Figure 2: Geological map of Anglesey (Greenly)

During the last glacial maximum some 30,000 years ago, Anglesey was covered by a fast-flowing ice sheet which originated in Scotland and flowed as far as the Isle of Scilly. This icesheet carved the great glacial valley known as the Menai Strait after creating the landscape of the Snowdonia mountain range. As the glacial rivers flowed into the Irish Sea, they sculpted the soft undulating hills which rise and fall across the Isle of Anglesey, the uplands of these undulations being the favoured site for the building of tombs in the Neolithic. This ice sheet also carried large boulders and deposited them across the landscape as glacial erratics when the ice retreated 22,000 years ago. The scouring effect of the ice revealed outcrops of the natural geology, which became a source of building material for the Neolithic tombs thousands of years later, and in the case of Henblas, Llangristiolus, three large glacial erratics arranged as a natural shelter were later used as a burial site (Pritchard 1866). It will be repeatedly demonstrated, from the varied geology beneath each of the sites investigated as part of this research project, why Anglesey has been described geologically as “the world on a pocket handkerchief” (Steele & Williams, 2006. Pp 16) with the wide variety of geological strata located within a relatively small area.

### Upper Palaeolithic

Human species moved into north-western Europe 500,000 years ago, the first evidence for human activity in North Wales can be found in Pontnewydd cave, Denbighshire where excavations carried out between 1978 and 1995 recovered 19 hominid teeth (Aldhouse-Green 2000, pp. 18). These teeth were x-rayed and found to have enlarged pulp cavities and short

roots, this indicates that the teeth are from Neanderthal and were 225,000 years old which are the oldest hominid remains to be found in Wales. The assemblage of Neanderthal remains found in Pontnewydd cave ranged from adults to young children, with a fragment of jaw containing a heavily worn milk tooth and newly erupting permanent molar belonging to a 9-year-old individual. Flint tools and animal bone displaying signs of butchery were also found but despite this mass of evidence it would appear that North Wales was sparsely populated, with little evidence of settlement other than the cave finds and only rare flint scatters and stray finds showing any evidence of settlement throughout this period (Aldhouse-Green 2000, pp. 10).

It is evident that Wales was abandoned between 21000 BP and 13000 BP as the ice had returned during the last glacial maximum covering most of its surface, except for the southern coastline of Wales (Aldhouse-Green 2000, pp. 10). The next evidence we can see for human occupation in North Wales can be found at Kendricks cave on the headland of Llandudno to the west of Anglesey. Discovered by Thomas Kendrick in the 1880s, the cave produced nine perforated teeth, mainly deer but also bear teeth and badger teeth, which were <sup>14</sup>C dated to 10,000 ± 200 BP. Most interestingly a partial horse mandible (See Figure 3) with an incised zig zag pattern engraved into it was dated to 10580 ± 200 BP (Aldhouse-Green 2000, pp. 20). Following this another decorated piece, an incised badger tooth, was also found nearby. Both of these artefacts are the only examples of Upper Palaeolithic art to be found in Wales and in this particular region of study. Also discovered were ochre stained tallies thought to be a lunar calendar or gaming scores and comparable with finds from Goughs Cave in the Cheddar Gorge area in Somerset (Currant et. al. 1998). The discovery of four human burials suggest that the artefact assemblages were associated grave goods and the site was likely a burial, with little evidence of prolonged occupation of the cave (Bello et. al. 2015).



*Figure 3: Fragment of horse mandible from Kendrick's Cave, Llandudno, showing incised zig-zag decoration (Aldhouse Green 2000, pp.20).*

## The Mesolithic

The artefacts from the Kendrick discovery are dated to the Palaeolithic/Mesolithic transition and we will now analyse the evidence from the Mesolithic period in North Wales. The majority of evidence for human activity in this period is found coastally and this coastal activity can be seen across the British Isles. One of the most famous sites known as Star Carr was found in Yorkshire on the east coast of the British Isles where a number of deer skulls and antlers had been modified into headwear. Evidence of Mesolithic activity can also be found on the west coast in the form of footprints on the sandflats at Formby Point, Lancashire (Burns 2021).

In Britain, the Mesolithic starts around 10,000 BC, with Star Carr in Yorkshire producing <sup>14</sup>C samples around 9,700 BC (Aldhouse Green 2000, pp.23), with the earliest Mesolithic dates (not including the transitional dates from Kendrick's cave) in North Wales deriving from <sup>14</sup>C samples taken from burnt hazelnut shells at a site near Prestatyn in Flintshire, dating to around

8,700 BC (Aldhouse-Green 2000, pp. 23). The period is also defined by a change in flint tool technology, with the larger blades of the Late Palaeolithic being replaced by small flint tools known as microliths. These small tools were often set into shafts of wood and used as harpoons by the hunter gatherers of this period. Shell middens, comprising processed shellfish such as limpets and mussels, are often found at Mesolithic sites. These mainly consist of large piles of shellfish remains, often interpreted as dumping sites of the waste materials from feasting on the rich aquatic resources taken from the coastal seas. Artwork has also been found across North Wales from this period with decorated pebbles from Rhuddlan, Denbighshire (Milner et. al 2015; section 6.2 – see Figure 4) and at Llandegai, Gwynedd – both of which are comparable with the recent finds of an inscribed pendant at Star Carr, Yorkshire (Lynch & Musson 2001, pp. 24-7)

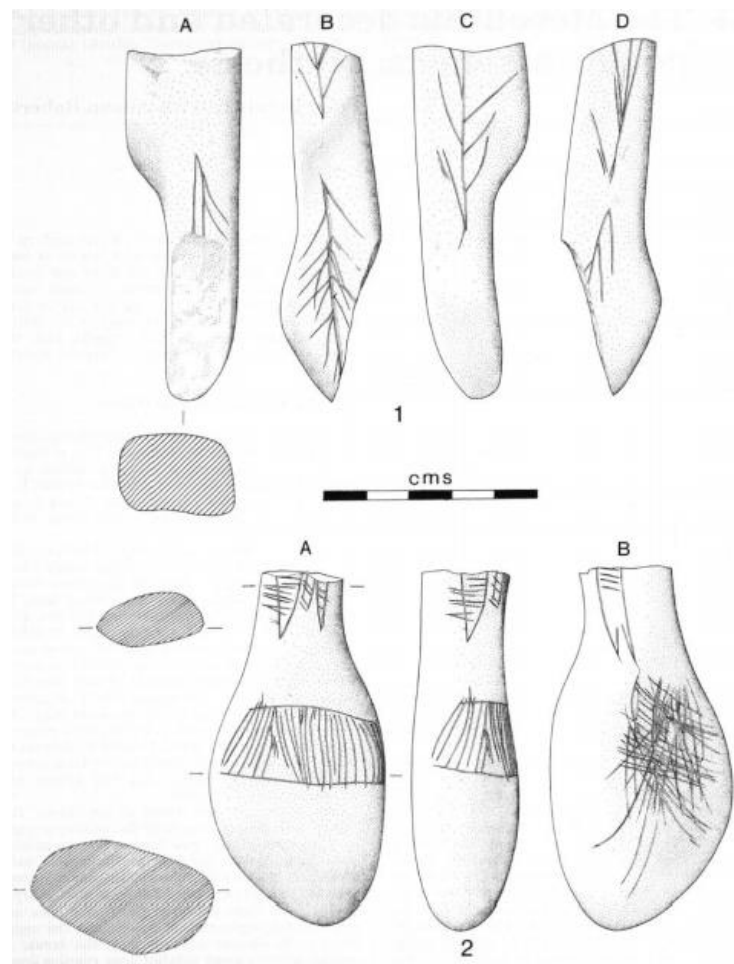


Figure 4: Technical drawings of two of the inscribed pebbles (SF1 and SF2) found during excavation work at Rhuddlan (Berridge, 1994; p. 116, fig. 11.1)

As mentioned, most of the evidence for Mesolithic human activity has been recorded on the coast and this coastal distribution is often ascribed to the transient hunter gatherer groups taking

advantage of the resources provided by the sea. This habit of coastal activity can also be seen on Anglesey with microlithic flint finds attributed to this period being found at Penmon, South Stack, Penrhos Lligwy, Llanfaelog, Llanfaes, Lligwy and the footpath leading to the later Neolithic tomb at Barclodiad Y Gawres (Wymer 1977). Despite the majority of the distribution of Mesolithic sites being coastal, there are a number of inland discoveries of Mesolithic finds on Anglesey at Coedana (Owen 2018), Dothan (Longely and Jones 1994), Penbol Uchaf (Smith 2005, pp. 42) and Bedd Branwen near Llanbabo (Lynch 1991; 45-6). Another possible site near the river Cefni at Llangwyllog may also have been identified in recent times (Owen 2021, per comms.)

It was during the Mesolithic that Anglesey became an island with the Menai Straits formed between 8,000 and 9,000 years ago, separating the landmass from the mainland with a narrow yet turbulent stretch of tidal water. This would have provided a new challenge to cross to and from the mainland for the nomadic folk of the Mesolithic period (Aldhouse Green 2000, pp. 26). However, this earlier phase of human transmission would have seen sea levels dramatically lower than those seen today, allowing for easier transit to and from the island (Lynch 1991, pp. 38-39).

The best excavated example of a Mesolithic site can be found at Bryn Celli Ddu with wooden posts dated to 9,000BC (see Chapter 2) and Trwyn Du in Aberffraw which was excavated by C. Houlder in the 1950s and again by R. B. White in the 1970s (Lynch 1994, pp. 48-51). The finds from these excavations show evidence for a large camp with artefacts associated with stone tool production. 123 blunted points, 87 scrapers, 25 cores, 11 transverse flakes, 6 microburins and 25 microliths were recovered, alongside masses of debitage associated with organic remains providing radiocarbon dates of  $8640 \pm 150$  BP (Lynch 1994; pp. 48-51).

## The Neolithic

Evidence for large scale land clearance associated with farming can be seen in Wales from the 5<sup>th</sup> millennium BC (Lynch 2000). Pollen evidence from cereals and ‘Celtic bean’ (*Vicia faba* L.) from cultivated crops has been recovered from Trefignath (Greig 1987, pp. 43), and skeletal evidence for the domestication of cattle and sheep can also be found at Windmill Hill around the period 4050 BC with the first evidence of skeletal assemblages of cattle being found in the south east of England (Cummings and Morris, 2018. Pp 20). Settlement in Wales in the Early Neolithic period is defined by timber ‘longhouses’ on isolated farmsteads, with evidence for

these types of structures from Parc Cybi on Anglesey (Kenney 2020) and Llandegai in Bangor (Lynch 2001), with one possible larger scale settlement site near Llanfaethlu (Rees and Jones 2015), one of the only examples of its kind recorded in the Western British isles. This site, consisting of three rectilinear wattle and daub constructed structures were also found to be associated with pits dating from the Middle Neolithic (Rees and Jones 2015). In both cases these type of settlement are often found in lowland areas particularly those with fertile earth for farming.

In both cases these type of settlement are often found in lowland areas, particularly those with fertile earth for farming. In Wales it is generally assumed that pastoral farming was the dominant agricultural practice with only limited arable farming taking place (Caseldine 2001). This theory is fuelled by the limited quantities of macrofossils (i.e. pollen) recovered from earlier prehistoric contexts, particularly in north west Wales. For instance, despite its climate and topography, evidence for cereal cultivation on Anglesey during the Bronze Age is limited. Samples from Bedd Branwen (Dimbleby 1971, pp. 73) suggests limited arable farming activity, with a similar trend seen from earlier environmental samples gathered from Trefignath, suggesting the growing of broad beans in the Late Neolithic in a limited capacity (Greig 1987, pp. 43). Both sites are found in lowland areas of Anglesey, with Bedd Branwen found within the Alaw river valley and Trefignath found on an area of lowland south of Holyhead. Later period sites on Anglesey provide more environmental evidence however, with several sites in Anglesey, uncovered during the A55 road scheme, suggesting radical changes in agrarian policy by the late prehistoric to Romano-British periods (Ciaraldi 2012, pp. 240-241).

D. Sylvester argued that soil quality, combined with drainage conditions and ‘the shelter factor’ all played a role when selecting settlement sites on the island (Sylvester 1949, pp. 5), with the quality of soil (as well as other social and political factors) reflected in the nature of extant settlement patterns in the landscape (ibid ibid). As Anglesey may be described as ‘undulating lowland’ the entirety of the island would have proven more attractive to agrarian settlement compared to the mountainous uplands of the mainland.

Of the study areas selected as part of this thesis most are located on Stagnogley soils, which are soils rich in clay and low permeability – these include Llanfechell, Bryn Celli Ddu and Llanerchymedd. This type of soil makes up most of Anglesey, with only one of the study areas, Ty Newydd, comprising a finer, more fertile soil (Conway 2006). Existing settlement patterns

in these Stagnogley areas consist mainly of pastoral farmsteads, reflecting the poor quality of the soils for arable farming, yet suitable for the grazing of livestock (Sylvester 1949, pp. 10-11). It is also in the Neolithic period that we see the first pottery types develop across the British Isles in the form of fine shouldered bowls known as carinated ware and decorated later forms such as grooved ware pottery. Lithic typology also changes into the Early Neolithic with the first leaf shaped arrowheads and the abandonment of microlith technology for larger flint blades and stone axes. The iconic stone axes that appear around this time are often found made from particular types of stone quarried from specific sites such as Great Langdale in Cumbria with axes made from the greenstone volcanic tuff excavated from the top of the mountain close to the Pike of Stickle, found as far afield as the European mainland and Ireland (Miles 2016, pp. 260-83). There are a number of locations in North Wales that produced a stone that was deemed suitable for the creation of these polished stone artefacts, with the largest of these axe factories being found at Graig Lwyd at Penmaenmawr, Conwy. The stone found here is comparable to the Langdale greenstone in terms of mineral structure but with a grey colouration and made from a volcanic plug of augite granophyre which forms the entire headland. The quarry at Graig Lwyd was discovered in 1919 by Hazeldine Warren who identified the site from the large amount of flaked debitage and rough out axes which is the roughly shaped version of the axe before the polishing process, were found on the eastern flank of the headland (Warren 1919; Flook et. al., 1992). Another axe factory has recently been discovered at nearby Llanfairfechan, Conwy (Kenney 2017), with another discovered in North Wales at Mynydd Rhiw, Bryncroes on the western lip of the Llyn peninsula (Houlder 2014). Two further axe factories can be found in south Wales, with a possible site may have been identified at Carn Meini (Darvill & Wainwright 2002; pp. 623-4), located within the Preseli mountains – better known for being the source of Stonehenge’s enigmatic bluestones (Pearson et. al. 2015).

Lynch suggests that the Neolithic epoch is split into three sections, the Early Neolithic that runs between 4,000- 3,600 BC, the Middle Neolithic which runs from 3,600-2,900 BC where we begin to see the Peterborough ware style of pottery appear at sites in Wales such as Clegyr Boia (Lynch et. al 2000). Following this is the Late Neolithic period which runs from 2900 BC to 2300 BC and sees the early beginnings of roundhouse style structures at Trelystan and Walton and the grooved ware pottery evolving from the earlier Peterborough type (Lynch et. al. 2000). It is also in this period that we begin to see the creation of new monument types such as henge

monuments, timber circle, stone circles, standing stones and ring cairns alongside a less communal way of burying the dead with individual burials also being found around this time.

Thomas (1996) proposes that the study of temporality, space and material culture is more complex, with any attempt to create boundaries within these studies being an imposition by the researcher. The Late Neolithic can be seen to have secondary ages such as the arrival of the Windmill cultures in the form of migration periods, as opposed to the ages being defined by material culture or ritual changes within society (Thomas, 1996. Pp 19). This casts doubt upon the benefits of splitting the Neolithic into a three-age system and it is for the individual researcher to study the evidence and decide on the merits of the boundaries created by archaeologists in the study of prehistory.

### Houses for the Dead – The First Megalithic Tombs

This period is not only known for a change in the lifestyles of the people of the British Isles but also a change in the way that they treated their dead with the creation of large megalithic tombs, which are one of the monument types focused upon in this doctoral thesis. These tombs follow a similar distribution as the evidence for Mesolithic settlement with the monuments often being found on upland coastal areas among the western lowlands, and little evidence for burial in the mountainous regions. These monuments generally consist of a large box like chamber or chambers constructed from large upright orthostatic stones and roofed with a massive capstone and covered in cairn material in the form of smaller stones. Within the interior of the chambers of these monuments are often found large amounts of human remains in the forms of both inhumation and cremation burials alongside evidence for ritual processes such as the fire at Barclodiad Y Gawres or the ear bones found in the centre of Bryn Celli Ddu (See Pg 219).

The distribution of the earlier forms of monuments such as the Cotswold Severn tombs begin in Breconshire and the Bristol Channel region with the iconic dolmens being an amazing example of a Europe wide tradition of megalithic monument. Anglesey is best known for the passage tomb tradition: a monument type whose earliest examples can be found in France with the tradition moving north up into the Irish Sea Zone with these monuments being found across Ireland and the west coast of England in Cornwall and Wales (Lynch 1994). The unusual aspect of the tombs of this period is the longevity of their survival, with settlements from this period being a rare discovery. When excavating settlement sites only the ephemeral remnants of



postholes and the traces of hearth fires being all that survives of these dwellings. In stark comparison the tombs, the houses of the dead have weathered the storm of several millennia and pepper the landscape on the west coast of the British Isles, often the permanence of stone is mentioned and the fact that we still raise stones to the dead, so that their memory may survive long beyond the mortal body is not lost on archaeologists and prehistorians.



*Figure 5: Bodowyr burial chamber, viewed towards the southwest.*

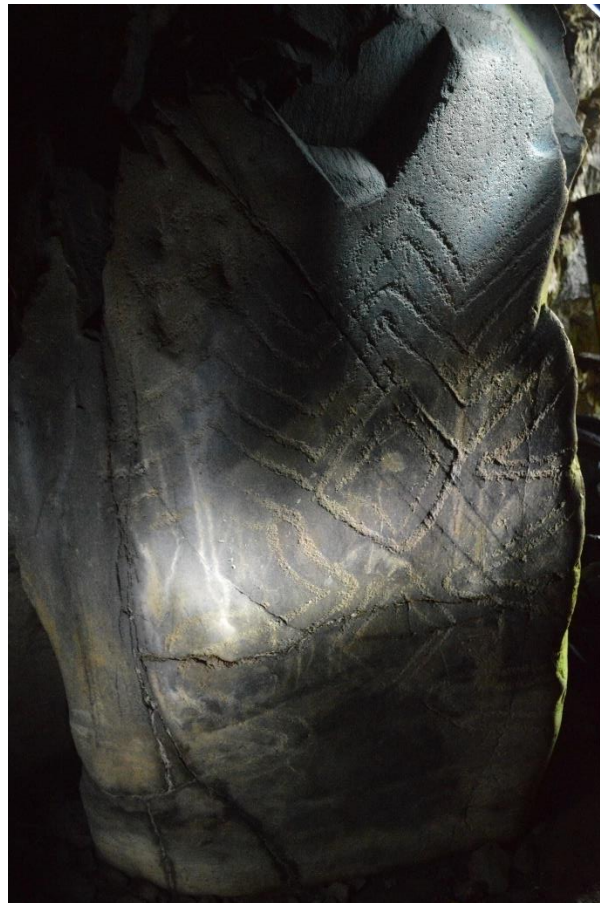
Despite the mass of data recovered from the extant tombs, many of Anglesey's Neolithic and Bronze Age megalithic monuments have defied confident categorization within existing typological frameworks. The landscapes surrounding many of the extant monuments have seen little to no modern archaeological investigation and remain critically understudied. Attempts to categorize the tombs of Wales have been made and it has been proposed that the monuments can be separated into several categories, the Cotswold Severn group which can be seen in North Wales such as those at Capel Garmon (Lynch 2000; pp. 65) Dolmens with rectangular and polygonal burial chambers with Bodowyr being a possible example (see Figure 5); and passage tombs such as Bryn Celli Ddu with a passage leading to one or multiple chambers; with Lynch proposing a further category on Anglesey, named 'long graves', with examples of these types being seen at Hen Drefor, Din Dryfol, and Trefignath on Anglesey (Lynch 1991; pp. 66-70) -

the latter of which started its existence as a passage tomb (which will be further analysed in the discussion section of this thesis). It has been suggested that the coastal distribution of these tombs allude to the tomb builders' ancestors originating from lands beyond the sea, with a viewshed of the ocean often found at these sites. This however is not always the case such as in the case of Bryn Celli Ddu (Nash, 2021). On Anglesey there is a significant clustering of tombs on areas of carboniferous limestone which borders the Menai Strait, but Lynch proposes that these sites were selected because they are close to fertile farmland, with the sacred landscape being created close to the farming settlements rather than any significance being held to the geology beneath (Lynch 1994, pp. 61). It is thought that there is a short copper using period known as the Chalcolithic with the arrival of Bronze being only clearly defined by the appearance of the bronze tool and different pottery types with many of the sacred ritual landscapes seeing continuation of use into this period and settlements remaining similar in form to the Late Neolithic period. Later Bronze Age use of the megalithic tombs is found such as in the case of Ty Newydd with Bronze Age artefacts recovered from within the megalithic structure and in many cases smaller satellite burials surrounding the passage tombs (Lynch 1994, pp.63-5).

The construction of these tombs has been analysed through the excavation of the ruins and possible sequences of events and methods have been proposed, with the use of earth or stone ramps or cribs of wood used to place the large capstone atop the upright orthostats with timber A-frames lashed together with ropes of bast or honeysuckle being utilised to move these massive megaliths and it has been proposed that postholes found at Capel Garmon might be evidence of the construction phase of this monument (Burrow, 2006, pp 70-71). The upright slabs that suspend the capstone were often placed in short sockets within the ground and evidence for a small cairn that buttressed these stones are thought to be a method of ensuring the uprights stay in place as the capstone is placed atop them or ramps to push the capstone up into its final position. At Bryn Celli Ddu and Bryn Yr Hen Bobl a drystone wall was constructed in between the irregular shaped uprights, possibly to provide stability for the placing of the capstone (Burrows, 2006. Pp 73). Drystone walling was not only used for levelling the surface for the capstone but also in architectural features outside of the chamber to define the limits of the tomb site itself with a drystone wall outer wall being found at Bryn Yr Hen Bobl that still stands to a height of 2.4 metres and encircles the cairn (Burrows, 2006. Pp 75).

It would appear that the deposition of human remains inside megalithic tombs goes out of fashion in Northwest Wales somewhere around the middle of the 4<sup>th</sup> millennium BC with the new mortuary rite of depositing cremated human remains inside single pits (Lynch et. al. 2000). This ritual can be seen at the pit graves discovered on the same ridge as Bryn Celli Ddu and this tradition lasts from the 21st to the 28th century BC. This period of pit burials is then followed by a period of the use of passage tombs around 3200 to 2700 BC with both intact and cremated remains being deposited in Bryn Celli Ddu and Barclodiad Y Gawres, but it is possible that these are token deposits placed within the tombs on solstice celebration (Tellier 2018, pp. 120).

## Rock art



*Figure 6: Image of Stone 22, Barclodiad y Gawres, Cable Bay. With kind permission by Owen.*

It is also during the Late Neolithic and Early Bronze Age that we see the appearance of a new type of artwork known as cup and ring appear across the landscape, hewn into the tombs and natural outcrops across Ireland, Wales, Northern England and Scotland. The reason we have a

date for these stone inscribed petroglyphs is because portable examples have been recovered from sealed contexts with dateable organic remains found within the same stratigraphic layer. It would appear that this tradition coincided with the construction of passage tombs somewhere around 3000-3200 BC and continued into the Early Bronze Age. It is possible that the cup and ring form could be a hybrid of earlier types that formed in Brittany and moved up into the Irish Sea Zone, defined by spirals, double and triple spirals and lozenge forms which can be seen covering the Boyne Valley monuments in County Meath, Ireland, and on Anglesey covering the interior of the Irish style cruciform passage tomb known as Barclodiad Y Gawres (see Figure 6). Similar forms can also be seen on the pattern stone that was excavated from the centre of the monument at Bryn Celli Ddu, with art that is comparable to forms found on the Irish tombs at Loughcrew and Fourknocks (Hartnett 1957, pp. 197), with the outcrops around Bryn Celli Ddu being reserved for cup mark artwork (see Chapter 10).

### Early Bronze Age

The Early Bronze Age is believed to start 2500 and 2300 BC and around the twenty second century BC, inhumation becomes a popular rite once again, with the closed circular mounds which take on a variety of different architectural forms being the most popular tradition. A number of examples exist on Anglesey, most notably those seen at Bedd Branwen and Treiorwerth. Although the burial mounds of the Bronze Age are the primary tradition inhumations can also be seen within henges, stone circles and natural mounds in this period and grave goods such as Bronze and flint knives are often found to be associated with these burials (Tellier, 2018. Pp 120).

The rite of inhumation is short lived as by the 23rd century BC cremation burials are once again seen to be the popular tradition. This re-emergence of ritual is found mainly within the Irish Sea zone, possibly evidence of contact with groups from the Atlantic seafront. Multiple cremations are often deposited in burial mounds, and, unlike the megalithic tombs of earlier traditions, these monuments are built, used and abandoned within a relatively short time frame, with evidence of these types of monuments found across the island and Bryn Celli Ddu Bach being an example relevant to this study (see Bryn Celli Ddu Bach section). This long-standing tradition continues into the Middle Bronze Age period when the ritual shifts once again to the burial of the dead within circular enclosures (Tellier, 2018. Pp 120).



## Henges



*Figure 7: Earthworks at Castell Bryn Gwyn, as seen from the side.*

As mentioned in the previous section, the Early and Middle Bronze Age periods saw the deposition of human remains not only in the closed circular burial mounds as seen across the British Isles, but also within the circular enclosures which include timber circles, stone circles and the iconic henge monuments that were built in the Late Neolithic and Early Bronze Age. A henge is a circular or sub-circular earthwork, usually defined by an inner ditch with an outer bank, with one or two breaks in the ditch circuit known as causeways or entrances (Burl, 1969. Pp 3). Variations of architecture such as stone circles can be seen within the henge monuments at Bryn Celli Ddu in North Wales, The Ring of Brodgar in Orkney and Arbor Low in Derbyshire and timber circles which can be seen within the enclosures at Woodhenge and Milfield North in Northumberland (Wainwright, 1989. Pp 43). On rare occasions henges can have a secondary ditch such as the henges in the Thornborough complex in Yorkshire and Coupland within the Milfield basin (Woods 2018) and, in some rare cases, many possible entrances which can be seen in the aerial photographs from Marleyknowe in Northumberland (Harding & Lee 1987, pp. 214).

Bradley (1998, pp. 125) suggests that these ditch and bank earthworks are a form of enclosing a space to set the scene for rituals performed for long forgotten gods. These enclosed liminal spaces are usually placed in areas of the landscape enclosed naturally by uplands and rivers (Bradley, 2000, pp. 123). It is likely that these monuments replace the passage tombs as rituals were likely to be held in around the passage tombs but as the henge monument came into fashion around 2900 BC the burials became closed barrow types and ring ditches. Examples of these later monuments can be seen at Capel Eithin near Gaerwen on the Isle of Anglesey (White & Smith. 1999), with the result that the rituals for the living were transferred to the open-air henge monuments as ritual and the religious rites changed across the islands. Despite this the

circularity of monuments was retained and this can be viewed that the closing of the tombs and the less intimate processes regarding the disposal of the dead can be seen as a fragmentation of society. Whatever the reason, the henge monument began to dominate the lowland areas of the British Isles with the stone circles being raised in the mountainous and upland areas.

Many theories exist as to the purpose of the timber and stone uprights found within henges, some of these include raised platforms which served as a stage for ancient rituals, massive roundhouses and complex structures, the uprights to support a fence which would lead people on a pre-designated path through the monument (Waddington 1997, pp. 22), an astronomical calendar or the stones and timbers are grave markers for burials which can be seen at the henge and later passage tomb at Bryn Celli Ddu (Harding 2003, pp. 117). Frustratingly one or many of these theories could be true and recent excavations have discovered that a variety of different activities took place within these enclosures, with evidence for timber circles and feasting at Durrington Walls, to the burials excavated from within the enclosure at Stonehenge (Pitts, 2001. Pp 54).

These monuments are often found in lowland areas close to rivers with henge monument placement favouring the lowland valleys of the east, before spreading across the lowland south although early examples of formative henges can be seen at Llandegai in North Wales (Woods, 2017). Studies of the topography of the circular monuments of the Late Neolithic and Early Bronze Age show the stone circles favour the upland mountainous regions with henge and timber circle monuments clustering in lowland river valleys and this distribution continues into Anglesey with the henge at Bryn Celli Ddu and Castell Bryn Gwyn being found in lowland river valleys. For this reason, the mountainous region of North Wales is not prime henge landscape, but a number of examples can be found in the lowland regions at the foot of Snowdonia such as the Llandegai complex, Bangor (Lynch & Musson, 2001).

Artefacts of fine stone tools alongside pottery and human remains have been found carefully buried in pits across this type of site which have led archaeologists to perceive the henge monuments as prehistoric temples - a stage on which the ancient rituals of the Neolithic ancestors were performed (Burl, 1981. Pp 75). These theories also suggest that these were important meeting places to connect the territories of proto-tribes or chieftainships, for the purpose of trade and a space for gatherings upon sacred festivals (Parker Pearson 2008, pp. 36).

Henge monuments began to appear across the British Isles around 3350 BC, with early examples of the monuments being found at Flagstones in Dorset, Llandegai A (Lynch 2001), Castell Bryn Gwyn, Brynsiencyn (see Figure 7) and the earliest phase of Stonehenge, Salisbury Plain (Burrow, 2010. Pp 184). These monuments are all thought to be formative henges and are the first attempts at what would later become the more traditional form of henge monument seen across the British Isles. These examples are linked by the fact that they were all constructed between 3350 and 2900 BC, have a bank set within a circular ditch, one or two narrow entrances and the possibility of a small external bank outside the ditch (Burrow, 2010. Pp 184). The henge monuments continued to be constructed, modified and used into the Early Bronze Age before falling out of use in the Middle Bronze Age with closed burial mound cemeteries becoming the focus of ritual activity.

Burrow (2010, pp 189) states that the Early Neolithic causewayed enclosure is the most likely to be the precursor to the henge, these monuments are usually huge sub-circular ditched enclosures, often with multiple circuits of ditches with many causeways breaking up the circuit of the ditch. Examples of this type of structure can be found at Hambledon Hill in Dorset and Whitewell in Lancashire, although this type of monument is most common in the south-east of Britain and is rare in North Wales (Cunliffe 2012, pp. 163). Comparable to the later henge monuments, the causewayed enclosures have defied confident archaeological identification. Cunliffe (2012, Pp 163) states that the general consensus on the function of these monuments is that they are meeting places for the wider communities to deal with the tasks that were needed to solidify social cohesion. These tasks include feasting, trade deals, gift exchange, negotiations over tribal boundaries, competitions, and communal worship. The parallels between the theories on the function of causewayed enclosures and the theories on henge monuments are the same and the importance of circularity can be seen in the passage tombs and causewayed enclosures of earlier times, a significant aspect of form which is found in all of the later henge monuments.

Recent excavations at the causewayed enclosure at Crickley Hill revealed evidence of conflict with over 400 arrowheads recovered from the interior of the enclosure, these arrows were found clustered around the causeways and excavations from Hambledon Hill uncovered the skeletal remains of a man who had been shot with a flint arrowhead and fallen, crushing the child that he was carrying beneath him (Smith 2009, pp. 15). A closer example can be seen at Penywyrld near Talgarth, Powys, where a rib of an adult male, dated 3650BC was found to have the tip of

a flint arrowhead lodged within it (Redknap 2011, pp. 36) These finds paint a brutal picture of the Early Neolithic being a land at war, with evidence of organised conflict and slaughter taking place at these monuments in the Early Neolithic.

The name 'henge' is taken from 'Stan-hengen' which is the name given to Stonehenge by the Saxons and translates as 'the hanging stones' (Kendrick, 1932). It has been assumed that the Saxon inhabitants of Britain mistook the great trilithons as stone gallows, but excavations at Stonehenge revealed the decapitated deviant burial of a 7th century AD Saxon man and it is possible that rather than being mistook for gallows, Stonehenge was re-purposed by the local Saxon community as a place of execution some 4000 years after its construction (Pitts et al, 2002).

The term 'henge' has been the cause of much contention within the archaeological community since it was coined by Kendrick (Kendrick & Hawkes, 1932) in the 1930s to describe various circular earthworks of the Late Neolithic and Early Bronze Age. Gibson (2012, pp 1) states that this definition causes problems, as archaeologists no longer know what is meant by the term. The name henge has been increasingly used to describe sites of this period that do not fit into the original definition. Ironically Stonehenge does not fit into the traditional henge categories as the stone circle is built upon a raised platform with an outer ditch and inner bank where Burl (1976. Pp 13) claims that the outer ditch and inner bank are the defining features which classify sites as a henge.

Despite the fact that as of yet, henge monuments have defied confident archaeological interpretation, there is a lot of evidence recovered through archaeological excavation, geophysics and aerial and landscape surveys that suggest a standardized and unified effort across the island to raise these monuments in the Neolithic. These monuments were raised with specific requirements that can be seen across the henge lands of the UK. The similarities in henge monuments extend beyond the homogenous circularity of the architecture and include the incorporation of natural constituents of the environment, in both proximity to rivers, hills and mountains, but also the array of puzzling stone artefacts excavated from their interiors (Waddington & Passmore, 2012).

Recent archaeological landscape studies carried out around Late Neolithic/Early Bronze Age ritual sites such as The Stonehenge Hidden Landscape Project, the large scale excavations at Llandegai in North Wales, surveys around the henges of the Milfield Basin in Northumberland



and other investigations carried out across this monument type all over the British Isles have uncovered evidence that shows that these monuments do not stand alone in the landscape and a variety of different monument types can be found for miles in the fields surrounding the standing remains. For this reason it is important to revisit all of the known sites and divert focus away from what can be seen on the surface and by utilizing modern imaging techniques such as geophysical survey, aerial photography and 3D modelling alongside archaeological excavation, attempt to reveal the true extent of the prehistoric ritual landscapes of Anglesey's ancient Neolithic monuments and it is these techniques which have been utilised in the study of the henge at Bryn Celli Ddu and stone circle at Llanfechell as part of this research project.

### Castell Bryn Gwyn

Henge monuments are few in number on the Isle of Anglesey with only the henge and stone circle at Bryn Celli Ddu, and the henge at Castell Bryn Gwyn securely attested. Castell Bryn Gwyn and the Bryn Gwyn stones, see below, can be found in a lowland valley of the Afon Braint at Brynsiencyn in the parish of Llanidan. Castell Bryn Gwyn itself consists of a sub-circular earthwork roughly 55 metres in diameter, with the height of the bank being over 3.5 metres. Two gaps in the bank are found to the west which is thought to be a modern intervention through the earthwork and the southwest which is likely to be an original entrance causeway. The north of the monument has been destroyed by farm buildings in recent years. Despite the henge-like appearance of the site there is no evidence of an outer ditch outside of the bank earthwork of Neolithic date (Wainwright 1960, Pp 25-26). The monument has been recorded as being a Neolithic henge in its original form by several sources.

The site was first mentioned by Rowlands (1766, Pp 86) in 1723 who describes the monument as a large theatre and mentions the lack of a ditch around its external circumference. The site was next written about by Wynn Williams (1871) who describes several standing stones and stone circles in the immediate vicinity of the monument. Two large stones known as the Bryn Gwyn stones lie to the west of the henge like monument and will be described later in this section. Stanley mentions a stonework seat which runs in the form of a ledge around the inner part of the southern side of the bank giving the monument amphitheatre like properties as mentioned by Rowlands in the 18<sup>th</sup> century. W. O. Stanley also excavated the site in 1840 ahead of the construction of the modern farmhouse and destruction of the northern side and recorded a gap in the northern section of the bank, now lost. This suggests that the earthworks at Bryn

Gwyn had two causeways on either side of the earthwork, supporting the hypothesis of it being a henge, albeit of unusual construction.

Excavations carried out discovered three distinct phases to the construction and development of the bank, first a bank with a simple stone kerb and earthen core was constructed with an inner ditch. This is the earliest phase of the site and is assumed to be of Neolithic date. Next, the ditch, upon silting up was abandoned, and the bank and a second u shaped ditch was dug. This second ditch was dug presumably to provide material to extend the width of the bank from 4.8 metres to 7 metres in its second phase, this was followed by a clay cap over the top of the site. Phase 3 began with the digging of an outer ditch and the filling of the U-shaped ditch from phase two with large boulders at its base, the phase three bank was supported by a timber palisade consisting of a line of posts with stone footings. The material from the outer ditch was piled on top of the bank extending it from 7 metres in width to 10.3 metres. This later phase is assumed to be of a much later date, and a transformation of the site from a ritual site to a fully defensive site at a later prehistoric period (Waddington 2013, pp. 148-9)

The most interesting aspect is the finds recovered from the excavation with Neolithic Peterborough ware pottery and flints being found in the earlier layers indicating a Neolithic date to the primary phase of the henge but in the later phases as the bank was extended the dig recovered Romano-British samian ware pottery dated to the Flavian era between 69-96 AD (*ibid*, pp. 149). It is widely believed that Castell Bryn Gwyn began its life as a Neolithic henge monument and was later modified and re-used as a Late Iron Age hill fortification, with the bank being utilised as a rampart. This is highly unusual on account of the small scale of the earthworks with there not being a great deal of room within the banked enclosure to defend or be sieged during war times. Of the flints recovered the most unusual was the transverse (or petit-tranchet) type flint arrowhead (Wainwright 1960, pp. 51-2) as one was found within the enclosure at Bryn Celli Ddu. This type of arrowhead can often be found in association with henge monuments with the author having found one within the henge monuments known as West Akeld Steads in Northumberland (Woods 2017). Returning to Castell Bryn Gwyn, the arrowhead was found alongside a flint knife and a scraper of green chert, and these were found from stratified deposits from phase two showing both phases 1 and 2 of construction were associated with the Neolithic henge with phase 3 being the Iron Age fortification of the henge monument (Wainwright. 1960. Pp 52).



*Figure 8: LiDAR image of Castell Bryn Gwyn, Llanddaniel Fab. Location of possible second henge marked with red arrow.*

It was during this research project that satellite imagery was analysed by the author of the surrounding area. Following this a curious cropmark was spotted in one field to the east of the standing fortified henge monument. This cropmark (see Figure 9) appears circular and roughly the same size as Castell Bryn Gwyn (itself measuring approximately 54 metres in diameter) and is possibly a secondary henge monument. The shape of the field also suggests that a circular bank may have been there before the field boundary was placed and suggests that whatever this cropmark is, it is ancient in origin and predates the current field boundaries. It is not uncommon for multiple henge monuments to be built within the ritualised landscape - similar examples of multiple henges in a row can be seen within the henge complex in the Milfield Basin in Northumberland and the row of three henges in the Thornborough complex in North Yorkshire (Harding, 2013. Pp1). Its faint shape can also be seen in the LiDAR data (see Figure 8)



*Figure 9: Satellite image of Bryn Gwyn landscape, with cropmark highlighted (red arrow).*



## Stone Circles & Standing Stones



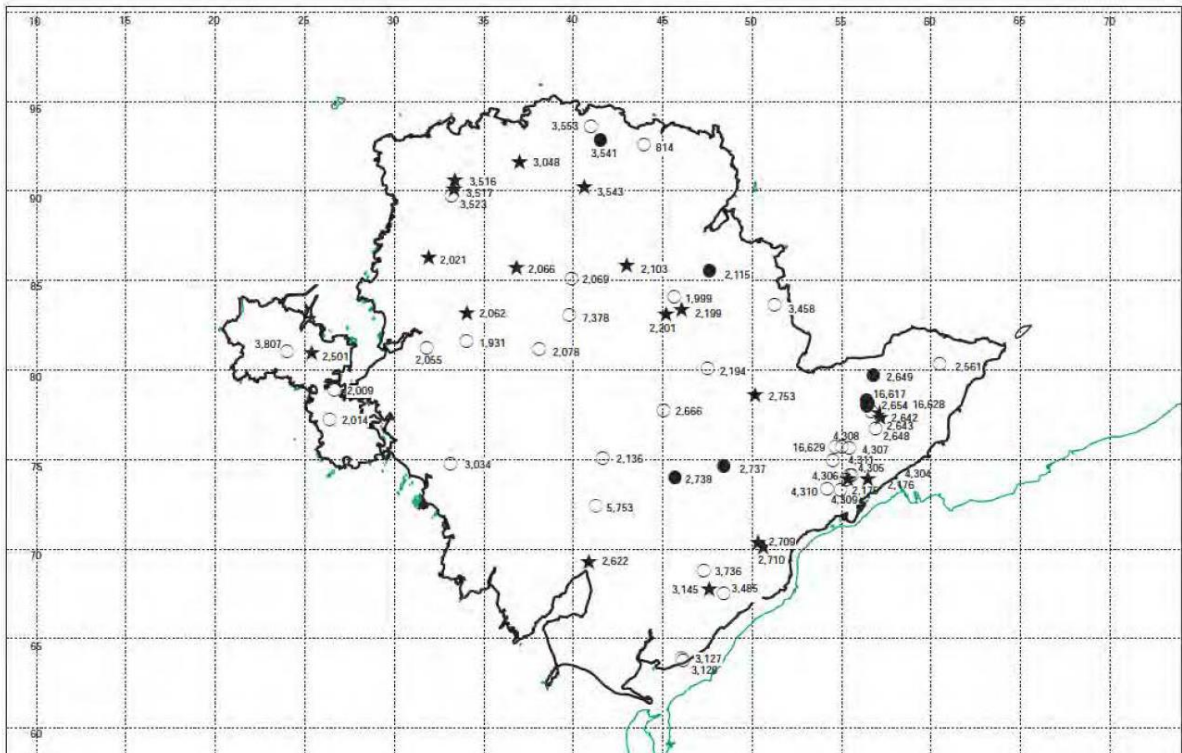
*Figure 10: Carreg Leidr (The Thief's Stone); Llandyfrydog.*

Similar to the henge monuments, stone circles on Anglesey are rare, with only the landscapes of Bryn Celli Ddu and Castell Bryn Gwyn once being home to them. The stone circle at Bryn Celli Ddu is now partially buried beneath the reconstructed passage tomb. Only two stones survive at the Bryn Gwyn stones, Brynsiencyn, and are found in the field boundary to the west of the Castell Bryn Gwyn henge monument (Smith 2011). A third strange example of a stone triangle is seen to the north of the village of Llanfechell with three stones possibly once part of a larger monument (see Llanfechell and Meini Hirion sections of this thesis). As yet, no intrusive archaeological investigation has been carried out at this site, though geophysical

surveys were undertaken as part of this thesis. Another possible example of a stone circle can be found with twin stones at Penrhos Feilw possibly being the sole survivors of a stone circle on Holy Island (Lynch 1991, pp. 152), this site too has not been excavated in recent times.

It is unusual that no stone circles survive in their original form on Anglesey, either being buried or partly destroyed, as surviving examples are found on mainland Gwynedd at Cerrig Arthur and the Druids Circle at Penmaenmawr, although these monuments are associated with the axe factory and are later than the Anglesey examples (Burl, 1976. Pp 258). These sites are sometimes incorporated into henge monuments and their landscapes, such as can be seen at Bryn Celli Ddu. Similar to the henge monuments and passage tombs stone circles show signs of celestial alignments with specific calendrical dates associated with the movement of the astral bodies such as the sun, moon or stars and the shapes of the stones can often be aligned with horizontal features such as mountains (Higginbottom & Clay, 2016. Pp 249) or natural routeways such as Moel Godog 1, Gwynedd (Burrows 2000, pp. 166).

Stone circles are often found in close vicinity to earlier monuments. On Anglesey there are at least two examples: the Bryn Gwyn stones which can be found approximately 317 metres south-west of the earlier henge monument, known as Castell Bryn Gwyn (Smith, 2013); and the Llanfechell Triangle, approximately 465 metres south east of the megalithic tomb at Cromlech Farm which lies in a ruinous state to the north (Smith, 2013). It would appear that around 3,000 BC the people of the British Isles took more of an interest in the cosmological aspect of their environment and although alignments had been made to honour solstice festivals with the passages of the megalithic tombs, the stone circles can often be found to have alignments with moon phases as can be seen with Castlerigg in Cumbria and the complex monument known as Callanish on the Isle of Lewis in the Hebrides (Barrowclough, 2011. Pp 147).



*Figure 11: Map showing distribution of recorded standing stones on Anglesey (Smith 2003, fig. 21)*

The single standing monolith is the most prevalent prehistoric monument found across the Isle of Anglesey, with at least 60 recorded by 2003 (Smith 2003, pp. 32-4 -see Figure 11 for approximate distribution). It is often thought that these stones mark routeways (Bruck 2001, pp. 185) or territorial boundaries between disparate chieftainships that had formed by this period in the Bronze Age (Smith 2003). It is possible that some of these standing stones may well be all that remains of stone circles with the high level of destruction of these monuments across Anglesey and this theory is further investigated as part of this study with the survey carried out in this research covering the landscape surrounding the Penbodeistedd stone and the single monoliths found within the ritualised landscape at Bryn Celli Ddu.



## The Bryn Gwyn Stones



*Figure 12: Image of Bryn Gwyn standing stones as seen from afar, with mountains of mainland in background. With kind permission by Owen.*

The Bryn Gwyn stones (see Figure 12) are an impressive pair of standing stones that stand in a hedge line between two fields to the west of the henge fort discussed in the previous section. The largest of the two stones is over 4 metres high and is one of the tallest on Anglesey and was incorporated as the gable end of a house structure sometime in the 18<sup>th</sup> century (Smith 2008). The site was described by Rowlands in the 18<sup>th</sup> century as part of a stone circle, , with most of the circle being destroyed by landowners sometime in the 19<sup>th</sup> century. This was presumed to have taken place in order to reclaim the land for farming purposes, with the remaining two stones surviving probably because they had previously been integrated as part of an existing field boundary (Smith 2008).

Geophysical surveys were carried out by GAT in 2006 that identified the circle to the north of the extant megaliths which manifested as a curvilinear anomaly with indications of possible stone setting. This led to a small-scale excavation in 2008 which investigated the curvilinear anomaly seen in the magnetometry data. Three standing stone holes were found, two of which still contained the broken stumps of the megaliths and these features lay in an arc in the suspected site of the rest of the stone circle and it was proposed that the stone circle was once



comprised of 8 stones with another megalith within the circle itself which is reminiscent of the standing stone within the chamber at Bryn Celli Ddu (Smith, 2010; Pp 2).

A full-scale excavation was carried out over the entire circle in 2010 to establish its full extent. Three trenches were opened at the site with trench 1 covering 128 square metres across the north side of the field boundary with trenches 2 and 3 opened to the south in search of two other stone holes. The three stone pits excavated in 2008 were reidentified along with two further pits which were exactly where they were expected to be from the geophysical data and the proposed arc of the circle (see Figure 13), the pits contained packing stones and the stump of a monolith which was understood to have stood to at least 2 metres from the depth of the pit. Hazelnut fragments recovered from one of the fills gave a radiocarbon date in the early 2<sup>nd</sup> millennium BC (*ibid*, pp 4).

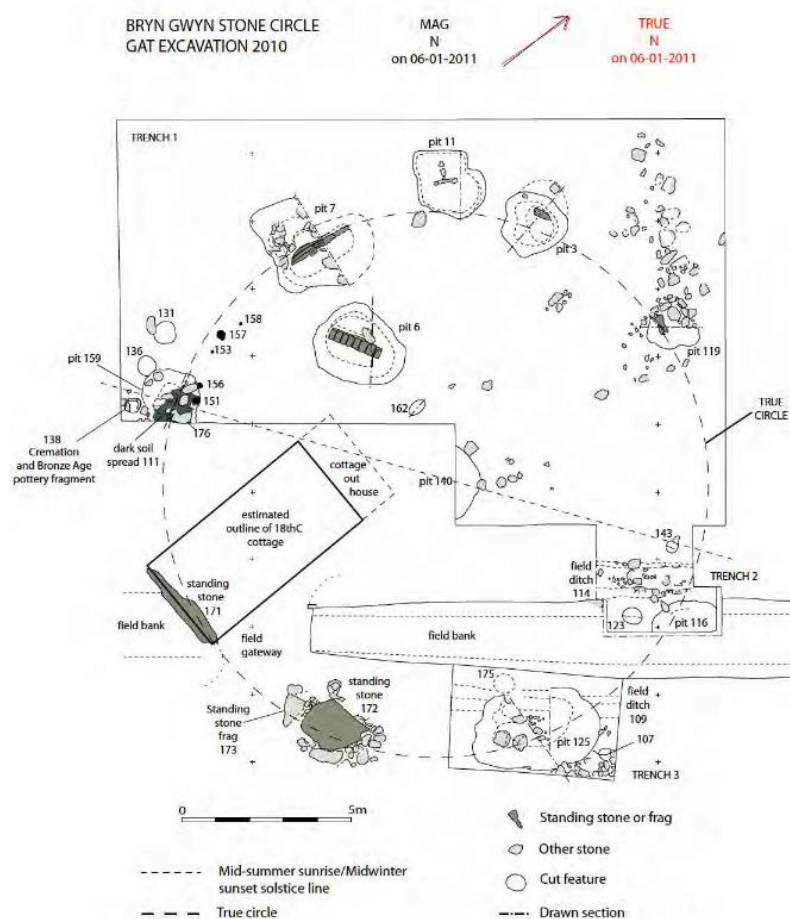
During the excavation of all the remaining pits a spread of charcoal rich soil was discovered which contained cremated human bone along with a pit containing further evidence of cremated human remains and further analysis found that the bone fragments represent at least four individuals, a neonate, an infant between the ages of 0 and 2 and a juvenile somewhere between 5 and 8 years old a 1 adult over the age of 18 (*ibid*, Pp 8).

Sherds of pottery were found across the site, with most of the sherds recorded identified as being of 18<sup>th</sup> to 19<sup>th</sup> century in date. However, a rim sherd was recovered from the top of a pit containing cremated human remains and was found to be the remains of a collared urn. Another fragile piece of pottery found nearby was identified as part of an Early Bronze Age food vessel with a herringbone decoration. A similar example of a collared urn was recorded at Bryn Celli Ddu Bach, which was also decorated with a herringbone design, and could be of a similar age and type (*ibid*, Pp 9-10).

Twelve pieces of worked flint were found during these excavations. Ten of the pieces were identified as debitage and the remaining two pieces showing signs of retouch were found to be part of a blade and a notched tool which it is suggested to be of Late Neolithic date, but this is speculative considering the condition of the recovered flints. The conclusion from the recovered remains and radiocarbon dates excavated from the site at Bryn Gwyn show that there was funerary activity happening within the circle at the early parts of the 3<sup>rd</sup> millennium BC in the Middle Neolithic and cremation burials continued up until 3,500 BC with the pottery

evidence of the food vessel/collared urn showing further activity at the site somewhere between 2,200 and 1,750 BC (*ibid*).

The excavations at Bryn Gwyn provide important evidence for the potential future of the work started in this thesis research project as the geophysical surveys across Tyddyn Bach and the Llanfechell monolith both show anomalies that are highly comparable to the finds in the magnetometry survey that was carried out across the area close to the Bryn Gwyn stones. Dateable evidence was recovered from the excavations which gives a timeline of the phases of use of this monument, and it is proposed by the author that the same large-scale excavation should be carried out across the anomalies discovered in this research project in an attempt to recover similar dateable artefacts and lead us to a better understanding of the use of the landscapes at Bryn Celli Ddu and Llanfechell.



G1629 Bryn Gwyn 2010 Fig.7 General excavation plan

Figure 13: Excavation plan of Bryn Gwyn standing stones (Smith 2010; fig. 7)

The prehistoric ritual and burial monuments of the Isle of Anglesey (see Figure 14) are a fascinating area of study and now that the monument types and the timeline in which these different sites were in use have been outlined, we can now begin to investigate the sites studied within this research project. The following literature review will analyse all previous antiquarian and archaeological investigation carried out across Bryn Celli Ddu, Ty Newydd, Llanfechell and The Foel to establish a foundation of knowledge to help better understand the results of both geophysical survey and excavation

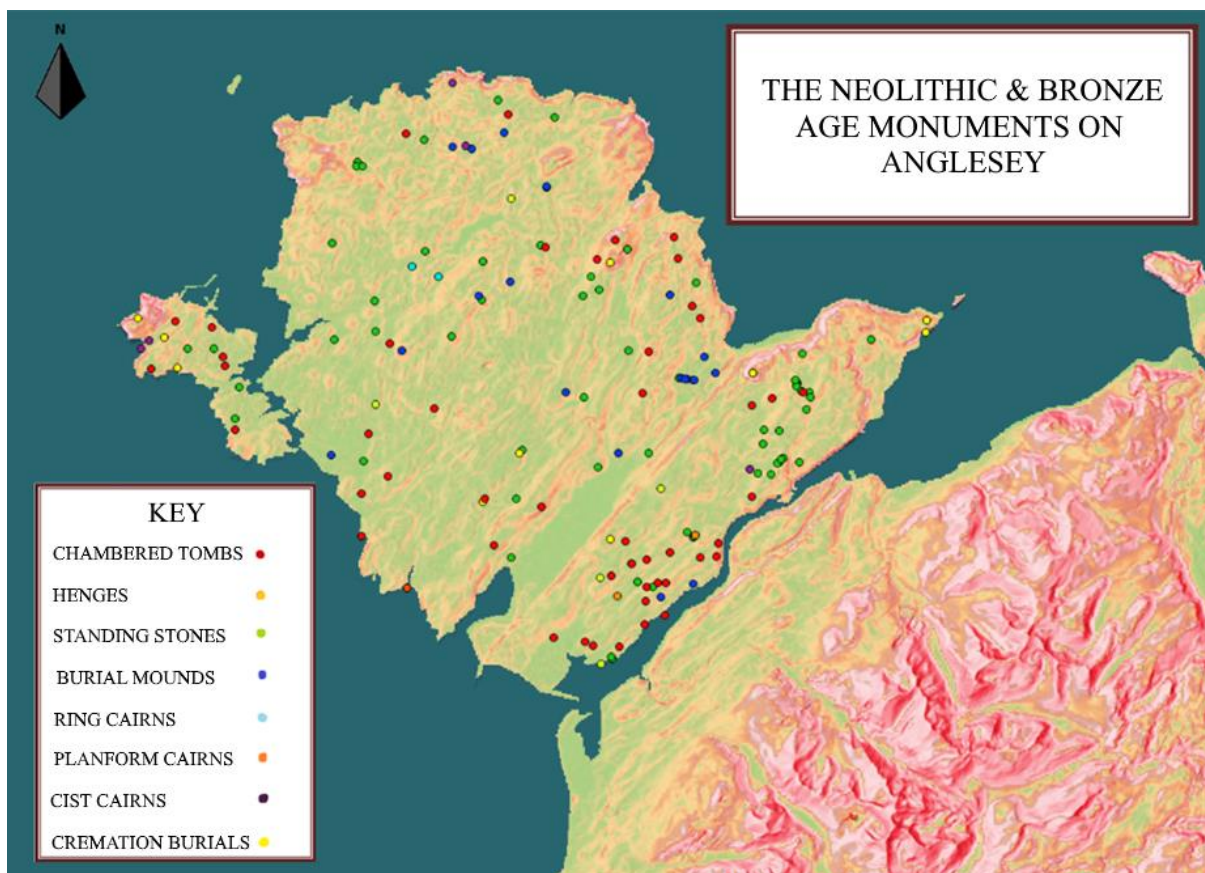


Figure 14: Topographical map showing all the prehistoric monuments recorded on the Historic Environmental Database (pre-2020).

## Iron Age Anglesey

The Late Iron Age dates from the pottery found within the roundhouse at the primary school at Bryn Celli Ddu do suggest that the settlement is likely of a date towards the end of the prehistoric. This however currently is purely speculative as without excavation of all of the

roundhouses recorded in the geophysical survey and the recovery of dateable artefacts these may be of earlier or later periods. For this reason, the following section will look at sites and finds from the island that may be comparable to the finds at Bryn Celli Ddu and will help summarise what is known about the Iron Age of Anglesey.

The Iron Age is defined by an expansion of the population and the separating of the land into large scale tribal territories, with these lands and the wealth of the tribe defended by large, defended hilltop enclosures known as hill forts. Anglesey is not known for its hills but where mountains do rise up, defended Iron Age earthworks can usually be found such as on Holyhead Mountain and at Mynydd Llwydiarth - both home to hillforts and, in the case of Holyhead, a number of beautifully preserved stone-built Iron Age roundhouses at its base (see Figure 15 for one example).

A study of place names attempts to trace the impact of these Iron Age peoples on the landscape. Several place names on the island (see Appendix 11) show evidence of possible Celtic place names in the landscape, particularly in the Southeast of the island, where a significant amount of Iron Age remains can be seen at places such as Hendrefor and Bryn Eryr, Llandsadwrn (Longely et. al. 1998).





Figure 15: Example of Iron Age roundhouse near Mynydd y Twr, Holyhead. With kind permission by Owen.

Waddington (2013) states that by the first millennium Wales sees the development of settlement that could indicate a reorientation of the society's beliefs, values and identities (2013; pp. 17) however Cunliffe (1991) counters that the development of hillforts are the creation of permanent strongholds for chiefs and the change of the focus of the economy from Bronze working to an economy based on agrarian production. The archaeological evidence aligns with Cunliffe's theory with the temporary rejection of bronze and the expansion of settlement and farming practice: by around 600 BC we see markets becoming localised with less long-distance travel required for trading (*ibid*, pp. 18). The south of England saw the development of large city like settlements called 'Oppida' in the later parts of the Iron Age. Regarding the evidence of the formation of large scale organised tribal entities Cunliffe claims that due to the lack of evidence of Oppida, coinage from this time and luxury imports, that this tradition of massive territorial kingdoms is relegated to the south of the islands. This is debateable as large-scale settlement has recently been discovered at Watermeetings in Lancashire (Woods 2018) and the possibility of a substantial defended enclosure at Glan Gors, Llangwyllog on Anglesey (Owen, 2022), interpreted by the author of this thesis as presumably late Iron Age in date - possibly the remnants of an unrecorded Oppida in the centre of the

island. Large hillforts can also be found on the island with Din Silwy (possibly referencing the Silures tribe or a mutation of Din Silwy as 'Din Sylw' - The Fort of the Lookout), also known as Bwrdd Arthur (Arthurs Board or Table) showing signs of large-scale settlement from cropmarks imaged from aerial photography. It is also debateable that the extent of the settlement found at Bryn Celli Ddu is larger than that of a small village and if dateable evidence can be retrieved through excavation the true extent and chronology of this town could be discovered.

One of the major problems with defining the Iron Age in the North of Wales and Northwest of England is the lack of dateable pottery evidence, with the societies of this period being apparently aceramic with pottery evidence being mainly in the form of rough briquetage vessels, often associated with salt production and manufacture known as very coarse pottery. Examples can be seen at the forts on the Cheshire ridge with VCP being excavated from the ramparts of the Iron Age phase of Beeston Castle (Ellis 1993; pp. 31) and sherds being found at Iron Age sites on Anglesey at Pant Y Saer, Bryn Eryr and Ty Mawr (Fairburn 1999, pp. 75). It is likely that Northwest England and North Wales was heavily involved with the production and distribution of salt throughout the British Isles, although the pottery is unrefined in form and material, the importance of this industry in relation to the preservation of meat cannot be overlooked.

It appears that the majority of the evidence or lack thereof regarding Iron Age use of the northwest of the British Isles is less about the lack of Iron Age sites and more likely the lack of archaeological interest and investigation. The discovery of coinage in North Wales from the period can be seen at Llanfaes (Anglesey) and Llandudno (Conwy – see Figure 16 for both examples). Of the two examples, the golden Gallo Belgic example from Llandudno is likely from the Corieltauvi tribe and minted in Dorset.



Figure 16: Images of recorded Celtic coinage found in Northwest Wales - A. Llandudno, Conwy (© Llandudno Museum Collections); B – Llanfaes, Anglesey (Besly 1995, pp 47).

The Llanfaes coin was of Gaulish type, and likely was minted by the Carnutes tribe located in modern day central France on mainland Europe (Besly 1995, pp. 47), indicating the influence of continental trade links had made its way to Llanfaes on Anglesey. The influence of Gallic tribes can also be found in northeast Britain with the *Parisi* tribe of modern-day Yorkshire likely being refugees from Caesar’s gallic campaign to subdue the tribes there in the 50s BC (Cunliffe 1991, pp. 214-5). The British tribes begin minting their own coinage two decades before the gallic wars showing continental influence ahead of the mass migration into the northeast.

The tribes and tribal boundaries in the area of North Wales are difficult to establish, mainly due to lack of Roman records and lack of large-scale excavation of sites known from the Iron Age period. The tribes that are known from historic sources are the Ordovices, which are located in the mountains of North Wales, The Gangani on the Llyn Peninsula and the Deceangli along the northwest coast with the largest and best recorded of the Welsh tribes being the Silures in the south (see Cunliffe 2002, 179; Fig. 8.1).

Only one Iron Age burial with surviving human remains has been recorded on Anglesey. On the southeast of the island nearby Gelliniog Wen farm, a complete inhumation was found following groundwork by the landowner in the mid-20<sup>th</sup> century. The body was found laid to rest in a stone cist with an Iron Age sword, Traces of the scabbard survived suggesting a La



Tène III typology (Lynch, 1991. Pp 282-285). Two brooches have been found on the island, one at Glyn, Llanbedrgoch and the other by a stream close to Din Lligwy and both are described by Lynch as being of the La Tene III type possibly from the first half of the 1<sup>st</sup> century AD before the Roman invasion (*ibid.* Pp 387-389).



*Figure 17: Aerial image of Din Silwy near Llangoed, Anglesey. Reproduced with kind permission by Owen.*

It is clear from the evidence listed above that Cunliffe's statement regarding the state of the Iron Age in Anglesey with the lack of Oppida, coinage and luxury items is unfounded. Evidence for large scale tribal entities can be seen across the multitude of developed hillforts across the northwest of Wales with Tre Ceiri, Llanelhaearn (Gwynedd) being an impressively preserved example. Other notable examples on the island include Din Silwy, Llangoed (see Figure 17) and Dinas Gynfor, Llanbadrig, both located near the Anglesey shoreline. Coinage although sparse is found from these periods and unrefined pottery wares in the form of VCP have also been recovered from sites such as Pant y Saer (Fairburn 1999, pp. 75), with the lack of artefact standing testament more to the lack of invasive archaeological excavation than the lack of established Iron Age communities. Luxury items have been found across Anglesey and Llyn Cerrig Bach being a fine example of the vast variety of goods that had either been made on or found their way to the island via existing, fully established trade links.

It is likely that any proposed future excavations across the newly found Iron Age settlement at Bryn Celli Ddu will assist in shedding much needed light on the period in northwest Wales.



Given the lack of archaeological investigation into these periods on the island it is imperative that at least a chronology is established for the structures, along with knowledge of the longevity of use of the site as an Iron Age settlement, and the true geographical extent of the area inhabited at the end of the prehistoric age.



Figure 18: Comparison between anomalies identified at Bryn Celli Ddu and excavated site at Bryn y Castell (after Cunliffe 1991; pp. 300).

The known archaeological evidence for this period on the island is relatively sparse and further large-scale excavation across the settlements, hillforts and ritual sites must be carried out to fill in the gaps and establish the true extent of the Iron Age influence on Anglesey. That being said the discovery of the enlarged settlement at Bryn Celi Ddu (see Chapter 7) is incredibly important to the ongoing studies of the landscape surrounding Bryn Celli Ddu and provides important evidence to add to what we know about Anglesey's Iron Age as a whole.

## The Druids and the End of the Iron Age: Classical Evidence

*“He [Suetonius Paulinus] prepared accordingly to attack the island of Mona, which had a considerable population of its own, while serving as a haven for refugees; and, in view of the shallow and variable channel, constructed a flotilla of boats with flat bottoms. By this method the infantry crossed; the cavalry, who followed, did so by fording or, in deeper water, by swimming at the side of their horses. On the beach stood the adverse array, a serried mass of arms and men, with women flitting between the ranks. In the style of Furies, in robes of deathly black and with dishevelled hair, they brandished their torches; while a circle of Druids, lifting their hands to heaven and showering imprecations, struck the troops with such an awe at the extraordinary spectacle that, as though their limbs were paralysed, they exposed their bodies to wounds without an attempt at movement. Then, reassured by their general, and inciting each other never to flinch before a band of females and fanatics, they charged behind the standards, cut down all who met them, and enveloped the enemy in his own flames. The next step was to install a garrison among the conquered population, and to demolish the groves consecrated to their savage cults: for they considered it a pious duty to slake the altars with captive blood and to consult their deities by means of human entrails. While he was thus occupied, the sudden revolt of the province was announced to Suetonius.”*

*-Tacitus (98 AD)*

The above passage written by Tacitus essentially records the end of the Iron Age customs on Anglesey and the fall of the last stronghold of the religious cult known as the Druids. It is believed that this event took place somewhere along the Menai Straits around 60 AD. Although it is strange that this part of the investigation will study the Iron Age period essentially at its end, this is the earliest recording of events upon the island and if it is to be believed, sheds some light on what was happening towards the end of the Iron Age on Anglesey. The passage mentions that Anglesey had a considerable population, presumably made of both locals and refugees fleeing Roman occupied areas to the Southeast of England. This is backed up by archaeological evidence showing much in the way of late prehistoric settlement across the island, as well as the discovery of several objects of an outside context to Northwest Wales as a whole. Tacitus also mentions that the island had become a haven for refugees, no doubt fleeing the oppressive and aggressive Roman advances as the legions pushed further north at this time.

Tacitus's depiction of the Druids is graphic and unsettling for both the modern and ancient reader alike. He mentions sacred groves that were used for grisly rituals involving human blood and entrails, with the sacred groves burnt to ashes by the invading forces. It has not gone unnoticed that the Celli in Bryn Celli Ddu translates to 'grove' and, although speculative, the

combination of a surviving sacred landscape alongside the recently discovered Iron Age settlement provides a tantalising possibility that the dark grove was one of these sacred forests that was torched by the Roman soldiers. The sacred groves of the Druids spoken about by Tacitus had been referenced over a century before by Julius Caesar who happened upon one of these blood-soaked liminal spaces dedicated to the display of human body parts and no doubt human sacrifice itself. The sacred groves are known as *Nemetons* and place names such as Drunemeton in Galatia and Nemetobriga in Spain show the reach of the druidic influence across much of Europe. Caesar also mentions in his druidic study that anyone wanting to become part of this religious order must study for 30 years on the British Isles and it is likely that this is where the druid cult had its stronghold which by the 60's AD had been reduced to Anglesey itself. Other facts that Caesar mentions is that the druids have a special ritualistic relationship with trees and plant life as well as witnesses a druid harvesting mistletoe from an oak tree with a golden sickle. The Welsh name for Druid, *Derwyddon*, roughly translates to 'oak worshipper', with this knowledge further strengthening the tree connection. He also states that the written word is forbidden within druidic society – Instead both the druids and bards opted for spoken word storytelling to distribute their beliefs and ideas.

It was also stated that a Druid's influence is so strong among the Iron Age folk they had the power to stop potential and ongoing wars between feuding tribes. Most interestingly Caesar records that the Iron Age people believe in reincarnation, a fact that makes them formidable in battle on account of their lack of fear in dying (Oriol Ynys Môn 2012, pp. 39). This shows that from the evidence of ancestor worship seen with the curation and display of human remains in the Late Neolithic and Early Bronze Age that by the time of the Iron Age a complete change in the afterlife belief systems and although the druids were known to have a vast knowledge of the movement of the sun, moon, stars and planets; knowledge likely passed down from the stone circle builders of the Bronze Age, the religious beliefs had not been favoured or had evolved into something completely different by this point.



Figure 19: A depiction of an 'ancient Druid' in an 18th century account - H. Rowlands 'Mona Antiqua Restaurata' (1723). With kind permission by Owen.

One of the best-known Iron Age sites is known as Llyn Cerrig Bach (Lake of the Little Stones) and it was during the extension of the runway at RAF Valley on Anglesey during World War 2 that a large hoard of Late iron Age artefacts were discovered in the peaty wetlands surrounding the lake close to the military base. One hundred and thirty-eight artefacts were recovered from the site including eleven swords, a pommel, six spears, a shield boss displaying La Tène decoration, part of a wheel and chariot horn cap, a variety of horse fittings, a gang chain with four hoops of iron for the necks of slaves connected by an iron chain, fragments of a war trumpet known as a carnyx, currency bars as well as fragments of a cauldron (Fox 1946, Lynch 1991; pp. 285-313).

The finds were dated to the end of the Iron Age and the deposition of sacrifices into watery places such as bogs, lakes and rivers is not uncommon in this period. The best known of these Iron Age practices are the presence of bog bodies. These human remains, mainly identified as

sacrifice victims, have been preserved from the anaerobic environment within the sphagnum moss bogs. For this reason, much of the soft tissue of the corpse thrown or deposited in has been greatly preserved. This allows for an incredible amount of data to be extracted with the cause of death - usually being a threefold execution known as the 'triple death' where the victim is often garrotted, has the throat cut and blunt force trauma is evident on the skull before the corpse is dropped into the bog. This overkill is seen as ritual and the stomach contents of these sacrifice victims is always found to be a porridge containing the berries from the mistletoe plant (Hutton 2011; pp. 27-8), which harks back to the harvesting of the mistletoe plant recorded by Caesar.

The geographically closest fully recorded and preserved bog body to the Isle of Anglesey is Lindow Man who was found in the peat beds of Lindow Moss just outside of Manchester (Ross and Robbins 1989), with several examples recorded across Cumbria and a possible example in Prestatyn, Northeast Wales (Carlie et. al. 2014, pp. 1158). Significantly more examples have been found over in Ireland with the grisly discoveries of Old Croghan man near Daingean, Co. Offaly and Clonycavan man near Ballivor, Co. Meath (Lobell and Patell, 2010), both of whom were discovered in 2003. The prevalence of bog body discoveries in Ireland may be due to the increased use of peat as a fuel in Ireland, far more extensively than in both England and Wales. Bog bodies have also been found as far afield as Scandinavia; with the discovery of the beautifully preserved Tollund Man whose body still had a noose around its neck (Fischer 2012).

It is evident that the rich deposits of sacrificed items to the wetlands of Llyn Cerrig Bach was deposited at the time of the Roman invasion, and it is possible that the ritual was carried out at Llyn Cerrig Bach by the Druids and tribes of Anglesey, largely in response to the foreign threat that clearly was on its way to the island. Could it be that the Iron Age people of Anglesey knew of incoming threat by Suetonius and his legions and appealed to the gods before preparing for the war that they would ultimately lose? Could it also be that the legions descended upon the settlement at Bryn Celli Ddu and slaughtered the British rebels before burning down the sacred oaks of the druids? It is unlikely that these questions may ever be answered, and archaeology must be carried out in any hope of gleaning any evidence of roman warfare at this site. What is currently known is that the Romans did not stay very long on the island, instead heading east in response to the Boudiccan revolt that had just erupted in the Iceni tribal lands to the southeast of England. It is possible that Boudicca and the Iceni, having known that Suetonius was busily

occupied dispatching the last of the druidic resistance against the empire, chose this as the perfect timing to unleash her furious assault.

An early second century BC account of druidic rituals attributed to the now lost poems of Nicander of Colophon but recorded by Tertullian of Carthage in his *De Anima*, recount that druids would sleep close to the tombs of their ancestors. This ritual would enable the spirits of the dead to visit the druids in their dreams and impart ancient wisdom and prophecy. Dreams are a popular method of speaking with spirits in shamanic culture and can be seen across cultures from the shaman of Siberia to the Australian Aboriginal dreamtime. It is possible that the siting of the Iron Age settlement could be a continuation of the use of the landscape for ritual rather than a change from sacred to settlement. Could it be possible that the settlement was built amongst the already ancient tombs at Bryn Celli Ddu to take advantage of the ancient messages from the dead imparted to the druids through their dreams?

Although the druids may have long since gone, their presence has captured the imagination of many a local living on the island. Henry Rowlands depiction of a druid in 1723 (See Figure 19) embodies their almost mythical nature. Around the 18<sup>th</sup> century a philanthropic organisation, named the Anglesey Druidic Society, was founded on the basis of providing charity to those living on the island and ran from 1722 to 1844 (Butterworth 1980). The organisations included gilded medallions depicting a Celtic Druid reminiscent of the depiction made by Rowlands, an example of which has recently been listed for sale online (see Figure 20).



*Figure 20: Image of Medallion worn by the Anglesey Druidic Society, c. 1780.*

## Chapter 2:

# Bryn Celli Ddu: Background and History of Investigation

*'In the beginning of November 1777, was accidentally discovered, at the hamlet of Brynkelly, a subterraneous gallery, eighteen feet in length, three in breadth, and six in height. This led to a chamber, of the same height, which was covered with a large single stone, twelve feet long and nine wide. A small round pillar seemed to afford some support to this stone from the centre of the room: Many human bones were found dispersed over the floor, but they immediately mouldered into dust upon being touched.'*

*-Henry Penruddocke Wyndham (1777)*



*Figure 21: Bryn Celli Ddu (A, Stanford. 2016)*

### Introduction

Bryn Celli Ddu (The Mound in the Dark Grove – for approximate location see Map 2) is a Neolithic henge, stone circle and passage tomb which now stands, partially reconstructed on a dairy farm close to the village of Llanddaniel Fab. It is built upon a low-lying ridge located 150 metres west of the River Afon Braint and consists of an 8-metre-long passage leading into a polygonal chamber, within which stands an upright pillar of worked stone (Lynch, 1970. Pp



95). One of the strangest aspects of this passage tomb is that it was built within the ditched enclosure of an earlier henge monument and would have buried a stone circle that stood within the henge enclosure. This subverts the chronology of these prehistoric monuments, with passage tombs usually represented in the archaeological record as an earlier form of megalithic monument, with the henge type monuments and stone circles being a later prehistoric tradition. It is possible that the ditch is a feature of the tomb itself, as this henge would be a very early example of this monument type, but discoveries of an outer bank encircling the ditch and the early dates recovered from the Llandegai complex on the Mainland outside of Bangor could be evidence that this monument is one of the earliest formative henges. The reversed chronological timeline has been the cause of much contention for archaeologists and Bryn Celli Ddu has been the subject of several antiquarian and archaeological investigations, with records dating back to the early 18<sup>th</sup> century (Burrow, 2010. Pp 249).



*Map 2: Topographical map of Anglesey showing location of Bryn Celli Ddu in the landscape. Created using opensource LiDAR data.*

This chapter explores the complex history of investigation at Bryn Celli Ddu, in order to provide the context for the original geophysical and rock-art recording work undertaken as original research for this thesis. We will consider the various antiquarian investigations at Bryn Celli Ddu, before a detailed examination of the excavation work that led to the site's

reconstruction, and the context of the monument in its landscape – essential for an understanding of the new discoveries reported in later chapters.

### Antiquarian Recording

The earliest mention of Bryn Celli Ddu is found in Henry Rowlands *Mona Antiqua* (1723). Rowlands states that Bryn Celli was formerly known as Llwyn Llwyd (Grey Bush), but at his time of visiting was referred to locally as Bryn Kelli (The mound in the grove). He describes the site as the remains of two Carnedds (cairns), closely spaced, with one being broken and pitted in one side and the other being almost completely destroyed, the stones having been robbed out of the mound to use in the construction of the dry-stone walling and nearby farm buildings (p. 93). Rowland's illustration of the tomb (see Figure 22) not only shows the large stone-built cairn with the capstone protruding from the top and the smaller destroyed cairn next to it, but two standing stones placed in-between the burial mounds which are likely to be the standing stones which still survive in the neighbouring fields to the west of the monument (see Figure 22).

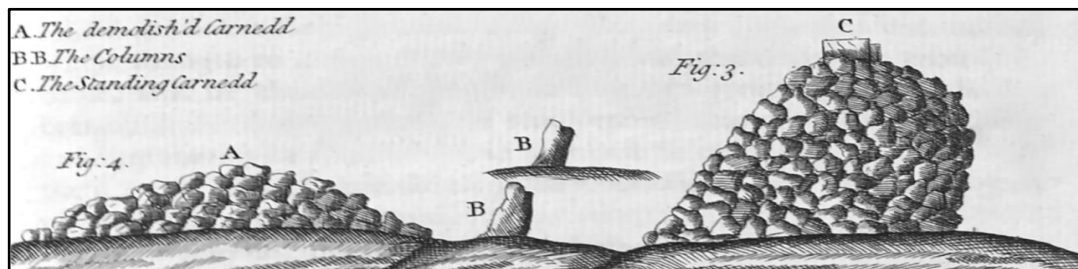


Figure 22: Rowlands illustration of Bryn Celli Ddu (C) and the now destroyed barrow (A) (Rowlands, 1723).

### Reverend Skinner

Bryn Celli Ddu is next mentioned by Rev. John Skinner during his 10-day tour of Anglesey in December 1802. Skinner (1802) recounts the tale of a local farmer's discovery of the passage and chamber;

*'Whilst a farmer was removing some of the stones from the north east side of the larger carnedd to employ them in his repairs he came to the mouth of a passage covered with a square stone similar to that at Plas Newydd, anxious to reap the fruits of his discovery he procured a light and crept forward on his hands and knees along the dreary vault, when lo! In a chamber at the further end a figure in white seemed to forbid his approach. The poor man had scarcely power sufficient to crawl backwards out of this den of spirits.'*

–Rev John Skinner (1802)

Reverend Skinner (1802) provides the first written account of entering the tomb at Bryn Celli Ddu and describes the standing stone within the chamber, undoubtedly the figure in white that had terrified the farmer. Reverend Skinner visited the tomb and discovered ancient human remains piled around the standing stone before he was forced to retreat from the tomb, this time due to a cluster of spiders rather than ghostly apparitions (Skinner, 1802 – for his drawing see Figure 23). Further conversations with local farmers revealed that gold items had been discovered inside Bryn Celli Ddu but were now in the possession of the landowner, Colonel Peacock (*ibid*).



Figure 23: Illustration entitled 'Cromlech at Bryn Celli Ddu, Anglesey, 1847'. (Unknown artist, *Archaeologia Cambrensis* 1847).

It is apparent from Skinner's account of his visit to Bryn Celli Ddu that the cairns had been further dismantled since Rowlands visit in the early 18<sup>th</sup> century and by 1847 an illustration of the site shows the tomb to be almost completely denuded of cairn material, with the chamber uncovered and the passage partially collapsed (see Figure 23).

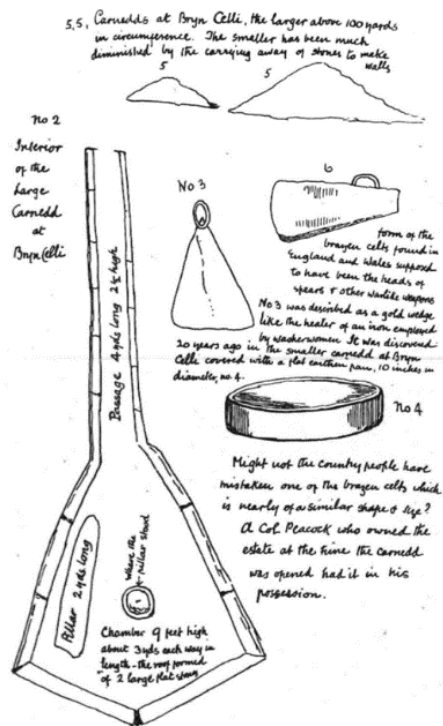


Figure 24: Sketch plan of Bryn Celli Ddu with illustrations of artefacts recovered from within the tomb which are now lost (Skinner, 1802)

It was around the time of this image that it was decided that the tomb needed to be preserved. Trees were planted around the surviving remains and a wall was built to protect the ancient ruin (see Figure 25).



Figure 25: Early attempt at the preservation of the ruin at Bryn Celli Ddu (O'Kelly, 1969).



## Francois du Bois Lukis

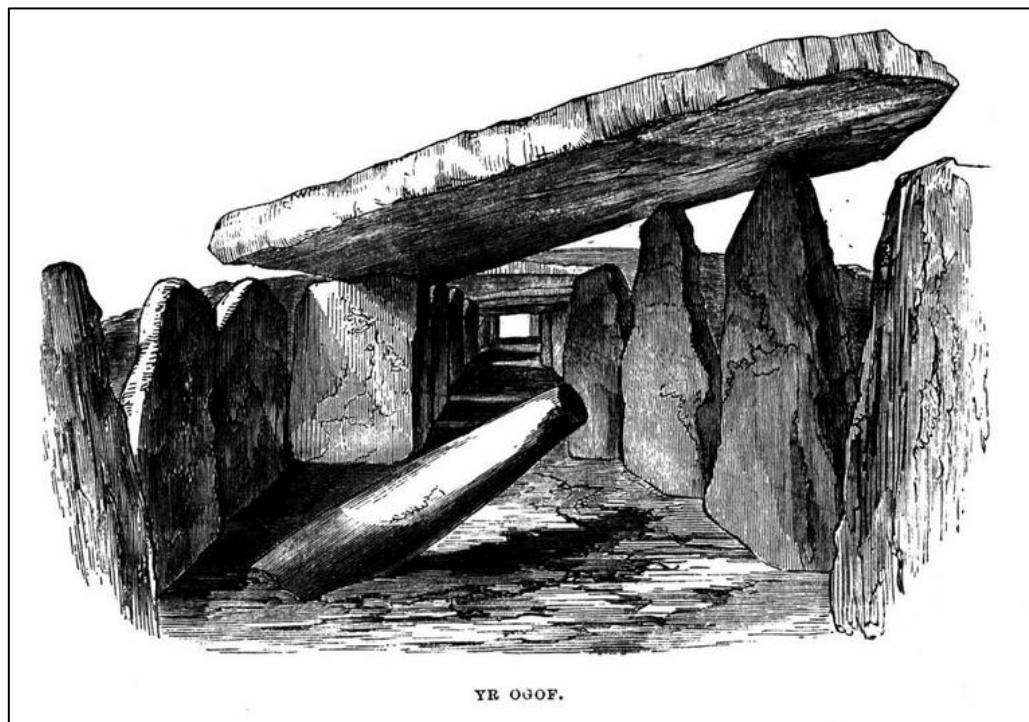


Figure 26: Illustration of passage, chamber and the toppled monolith (Barnwell, 1869).

Bryn Celli Ddu was first excavated by Francois du Bois Lukis in 1865 whose records refer to the site as Yr Ogof (The Cave) and whose illustrations (see Figures 26 and 27) give us our first glimpse within the monument (Barnwell, 1869). Lukis also provides a detailed plan (see Figure 16) and section (see Figure 17) of the monument and states that the rounded pillar within the chamber was free-standing, having never been used to support the roof. He therefore concludes that the monolith within the chamber must have served some other purpose (*ibid*, pp. 142-143). The pillar was no longer upright and slanted towards the south (see Figure 26); Lukis states that it had been disturbed from its original position which we know from Skinner's account (1802) as the pillar had been toppled by the same farm hand who had discovered the entrance. After the farmhands' initial fright, it seems that he had come to his senses and returned to the chamber to uproot the standing stone in the hope of finding treasure, but found only bones (Skinner 1802, pp. 26).

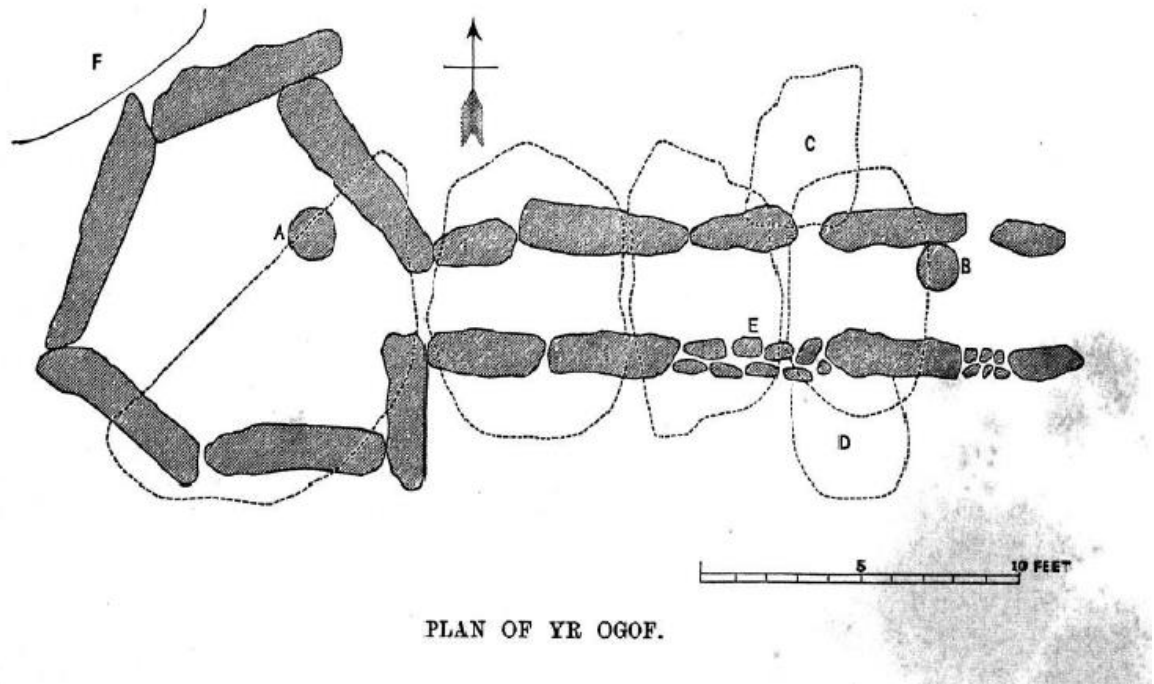


Figure 27: Lukis' plan of Bryn Celli Ddu (Barnwell, 1869, pp. 140-1).

Lukis uncovered a number of artefacts during his excavation at Bryn Celli Ddu, including a broken flint blade, a javelin or spearhead, fragments of lead and human bones, but no pottery was found (Barnwell, 1869). A pavement of flat slabs was excavated from the right side of the chamber and beneath this was a layer of beach pebble in which Lukis noticed that the upright supports were buried in (*ibid*). Lukis went on to question a local who spoke of numerous remains of cromlechs in the fields surrounding Bryn Celli Ddu, but no earlier record survives of them. Lukis also mentions that some locals remembered playing on the mound as children when the cairn was mostly intact and overgrown with Blackthorn. Lukis also mentions that much of the destruction had happened in the last 50 years since 1865 and if it wasn't for the wall that was erected by Mr C. Evans (see Figure 25) the entire monument might have been dismantled and removed completely (*ibid*, pp. 10).

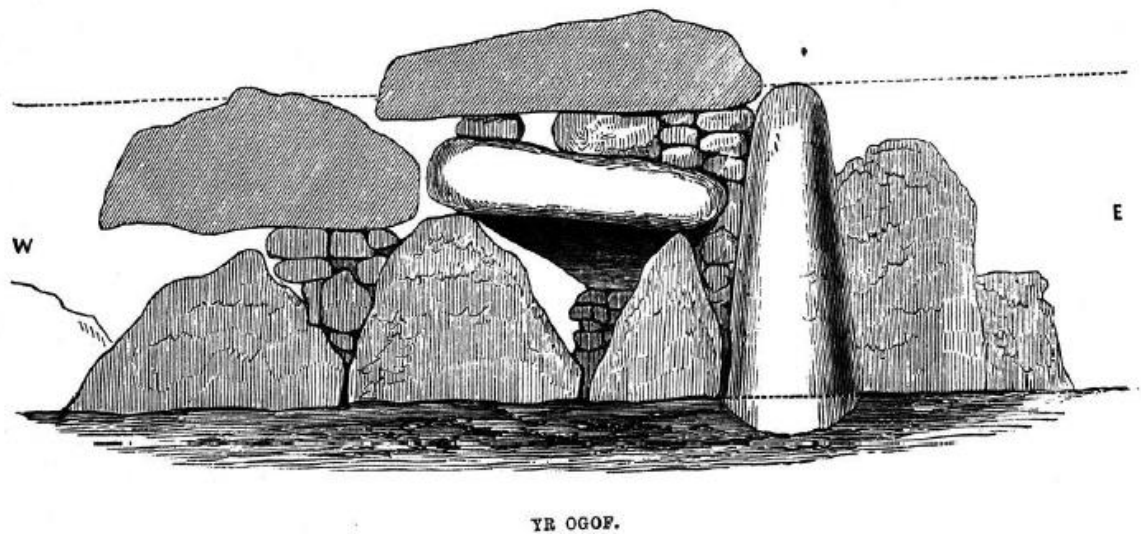


Figure 28: Lukis' section of the chamber at Bryn Celli Ddu (Barnwell, 1869).

## Sir Norman Lockyer

Sir Norman Lockyer published the 2<sup>nd</sup> edition of his *Stonehenge and Other British Monuments: Astronomically Considered* in 1909 which included the results of his recordings of astronomical alignments observed at the tombs of Anglesey (Lockyer, 1909). Sir Norman Lockyer was already an eminent scientist who had founded London's Science Museum, *Nature*, the influential scientific journal that is still published to this day, and had discovered Helium within the Sun. Despite his impressive credentials his work on the tombs did not cause much of a stir in the scientific community. Burrow (2006, pp 108) suggests that the problem with Lockyer's observations was the methodology used, as the position and height of the observer and direction of view would only allow for one observer to witness the celestial alignments and the chosen points of alignment proposed in the study, with Lockyer furthermore using stars and constellations as well as the Sun and Moon in his hypothesis. It is the comparison with star alignments and the tomb entrances where Lockyer's work strays into the pseudoscientific realm, in that, given the number of stars in the sky, alignments will always be found. Burrow (2006, pp 109) also critiques his research carried out at Lligwy tomb, which proposes an alignment with either Arcturus or Capella, the 4<sup>th</sup> and 6<sup>th</sup> brightest stars. Despite the problems with the method and approach of Lockyer's work on the megalithic tombs of the British Isles, it is now known that Bryn Celli Ddu is aligned to the midsummer Solstice sunrise, where the first morning's rays move down the passage and light the back wall of the chamber over four days every June.

## Hemp and the First Modern Excavations

The excavations and subsequent restoration of the tomb carried out by Hemp in the mid to late 1920s not only gives us the form of the reconstructed monument that we see today but also the most detailed archaeological analysis of the henge, stone circle and passage tomb (Hemp, 1931). The following section will list the findings by Hemp during his excavation and consolidation of the remains of Bryn Celli Ddu.



Figure 29: Bryn Celli Ddu before excavation (Hemp, 1931).

Hemp (1931) first turned his attention to the examination of the free-standing pillar that had since been overturned by the farmhand in his hunt for treasure in the 18<sup>th</sup> century (Skinner, 1802). Hemp noticed that most of the packing stones that lay at the pillar's base remained undisturbed and the base of the pillar still occupied its original position. Hemp stood the pillar upright; the packing blocks had preserved the shape of the socket and Hemp was confident that the pillar now stands in its original position. He noted that the pillar was just over 2.5 metres in height and when placed in the socket stands 1.5 metres above the floor surface of the chamber. Hemp noticed that the tip of the monolith had been broken off and Hemp postulates that the pillar would have originally had a symmetrical profile (*ibid*).





Figure 30: Ruins of Bryn Celli Ddu passage tomb (Hemp, 1931).

It was discovered that the pillar was not the only stone that had been worked by human hands. Upright No 7, which flanks the entrance of the tomb to the north, had been smoothed by hammering and picking, with a shoulder created to accommodate and support the final cover stone over the passage (*ibid*, Pp 220). The capstone of the chamber was completely cleaned to look for possible cup and ring petroglyphs, but none were found. The capstone was found to be broken, so two concrete supports were incorporated into the tomb reconstruction to safely support it (*ibid*).

Hemp records the first piece of rock art within the chamber at Bryn Celli Ddu on Upright No. 4 within the chamber. An incised spiral 12 cm in diameter (see Figure 31), the spiral comprises just over two rotations and narrows towards the centre (*ibid*). Some debate exists as to the prehistoric origin of this petroglyph, the angles of the lines of incision are very sharp which is unlike the pecked examples from the Neolithic and Bronze Age.



Figure 31: Spiral rock art discovered within the chamber at Bryn Celli Ddu (Hemp, 1931. Pp 223).

Hemp next describes the condition of the collapsed passage which was blocked with stones and soil. Once excavated, three roofing stones were found to have fallen due to either the removal or decay of the upright supports (*ibid*, pp 223). During the removal of the soil and stones from the passage, Hemp (1931, pp 228) noted that the infilling of the passage had taken place in two phases. The top layer was 45 centimetres in depth and comprised of loamy soil, stone, and tree roots. The second layer was described as a well-trodden surface of hard soil, 17 centimetres in depth which contained fragments of clay tobacco pipes and a late 18<sup>th</sup> century button. Hemp concluded that this surface was the passage first crawled down in 1777 by the farmhand on the re-discovery of the passage and that the cairn material from above had fallen into the passage when the roofing stones collapsed. The upper layer was thought to be a modern attempt to bury the monument (*ibid*, pp 228).

Once the passage had been cleared, a wall of stones embedded into clay was revealed on the western side of the passage. This wall resembles a low-lying bench which runs intermittently down the passage (*ibid* pp, 225). The only prehistoric discovery from the final layer above the original prehistoric floor surface of the passage was fragments of both burnt and unburnt human bone and teeth, which had been deliberately scattered (*ibid*). The prehistoric floor surface of the passage consisted of a paved surface made up of flat stones which were 5 cm thick and 15 cm in length which were set into the local glacial gravel. The clay and stone wall or bench sat

on top of this surface and more burnt and unburnt human bones were found on top and among the paving slabs (*ibid*, pp 223).

Hemp then turned his attention to the construction of the walls of the passage and found that the upright stones of the passage walls were first placed side by side and any gaps between these were filled with dry walling (*ibid*, pp 226). This dry walling method was used to ensure a flat platform at the top of the row of the passage for the placement of the roofing stones. The stones selected for the passage and roofing stones were flat, with any projections removed (*ibid*, pp 226).

Hemp replaced the collapsed roofing stones and began excavation at the entrance of the passage tomb which he names 'the Portal' in his report (*ibid*, pp 226). He first noticed that the large square monolith, described by Skinner (1802) that covered the mouth of the passage was missing. Hemp proposes that when the tomb was first entered it was through a space in the inner passage which leads directly into the chamber, but the portal and outer passage had been blocked by the squared stone and had since been removed (Hemp, 1931, pp 228). The decommissioning of passage tombs at the end of their function or at the end of the tradition is not uncommon with monuments from this period on the British Isles.

On excavation of the outer passage, it was found that the entrance had also been 'bricked up' with a careful packing of stones and clay. The remains of this layer were observed to sit just above the floor level of the passage, within this layer was found a small hollow about an inch deep which had been filled with bone fragments. This hollow was found in an area otherwise clear of cremated remains and would appear to be a deliberate deposit (*ibid*, pp 229). This deposit was located in the centre of the passage, whilst on the other side of the passage two large stones atop each other were uncovered, and a defined barrier of broken and water worn white quartz pebbles was observed across the passage. These broken quartz pebbles were also found strewn throughout the passage and chamber (*ibid*).

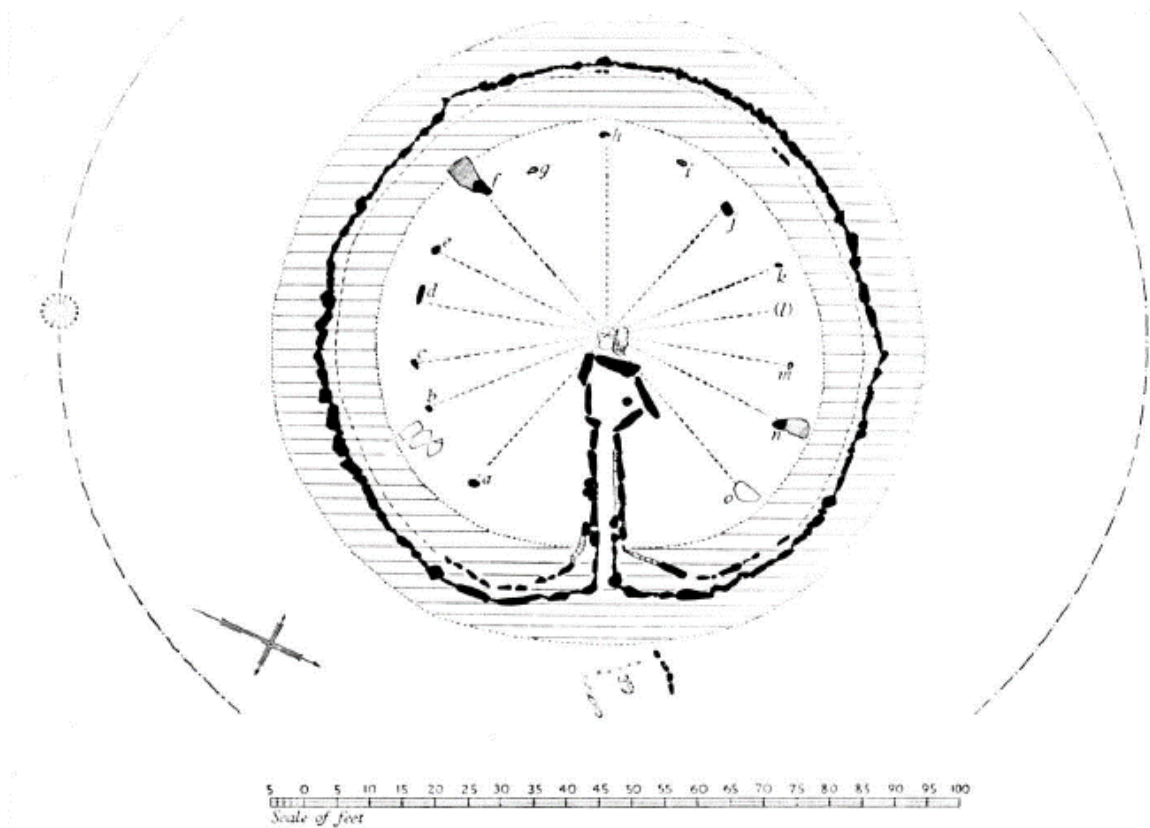


Figure 32: Hemp's (1931) plan of Bryn Celli Ddu.

Hemp found that the uprights outside of the tomb were shorter and broken at the top. These breaks were identified as plough damage and Hemp likens this damage to one of the stone circle stones within Bryn Celli Ddu. Hemp suggests that the tips of the stones were destroyed by the farmer in 1858 in his attempt to clear the mound to make the land suitable for ploughing.

The next area of the tomb to be excavated by Hemp was the 'Forecourt' and this proved to be the most difficult stage of the excavation, which is evident from discrepancies in the record made by Hemp (1931, pp 229). The area directly outside of the passage was heaped with material consisting of a variety of different sized stone and gravel. The blocking from the outer passage continued through the outer entrance, into the forecourt and consisted of large stones packed in gravel and clay. This material was found to have been dispersed over 2 metres outside of the entrance to the tomb. Hemp described the plan of these features as the layers of an onion, with successive layers of fill material being added over the large blocking stones, until the forecourt, entrance and outer passage were completely covered, and the tomb was sealed and covered by the rest of the mound (*ibid*, pp 231). Hemp concludes that the entrance and portal was covered over several stages with each layer being trodden down to compact the fill material until the passage tomb was sealed.

The outer edge of the blocking material was recorded to contain pieces of charcoal alongside the cremated bone fragments and crushed quartz pebbles which had been found throughout the interior of the tomb (*ibid*, pp 243). Hemp perceived the high concentration of charcoal as a fire which had been constructed outside of the entrance and further excavation found several burnt patches that Hemp refers to as ceremonial fires which had been set when the tomb was sealed. Two well defined hearth features made up of burnt flat stones set in the clay were found flanking the entrance to the tomb (*ibid*, pp 228). Immediately in front of the entrance a small stone lined mound was discovered which contained half a cremated adult male which had been inserted into the side of the fill material from the entrance. Evidence for a fire could also be seen and this is thought to be the final rite associated with the decommissioning and final covering of the passage tomb (*ibid*, pp 243).

Once the blocking material had been completely excavated it was found that the floor of the passage dipped down from the portal and then sloped up into the courtyard. Hemp perceives this deliberate landscaping of the entrance area as a way to increase the height and importance of the portal stones (*ibid*). A line of five postholes (see Figure 32) were discovered directly outside of the forecourt which were 15cm in diameter and sunk to a depth of 30cm. The five posts followed the arc of the circle with the southernmost post sitting on the main axis of the monument (*ibid*). It was thought that the posts might continue but further excavations found the gravel too disturbed to identify any defined features. Burrows (2010, pp 255) noticed that Hemp records the features in two different ways within the archives, his final published report shows the 5 post-holes excavated at the entrance, but his site plans record 8 post holes forming a 3-sided structure (see Figure 32) Two of the postholes were found to contain fragments of carbonized pinewood and the size of the holes suggests that the posts might have been uprights to support a screen of wattle fence (Hemp, 1931).





Figure 33: Excavation of the forecourt at Bryn Celli Ddu showing post hole alignment and pits (O'Kelly, 1969).

Beyond the postholes the burial of an almost complete ox skeleton was uncovered, which had been crammed into as small a hole as was possible and its head was twisted round to face the entrance of the tomb, with a line of stones laid on edge to roughly define the edges of the burial (*ibid*). Parts of the horn and skull had been destroyed by previous ploughing. Hemp initially suggests that the ox was probably buried in the last couple of centuries but notes that the body of the ox aligned with the axis of the forecourt and the skeleton showed similarities with an ox burial found at Woodhenge (Hemp, 1931).

During the reconstruction of the tomb, Hemp decided that it would be best to leave the dry-stone walling from between chamber stones to the south of the monument to allow natural light into the tomb (*ibid*, pp 233-234). It was also decided to lower the ground level on the outside of the chamber to the south and build two wing walls to retain the reconstructed mound. It was during the lowering of the floor that an incredible discovery was made. A large slab of undressed stone had been buried in the centre of the monument, beneath the stone a pit was discovered and within this pit was found evidence for burning, a piece of unburnt hazel and the burnt right ear-bone of a human (*ibid*, pp 235). The pit was filled with a layer of brown clay, in which two pieces of jasper was found, the space was then filled with a mixture of stone and

clay before an inverted cone of purple clay was inserted into this layer and a hollow was fashioned into the protruding inverted base of the purple clay cone. The stone was then laid directly on top of this (*ibid*, pp 235).



Figure 34: The central pit at Bryn Celli Ddu which contained the human ear bone (O'Kelly, 1969).

Another stone measuring 1.5 metres in length, 60 centimetres in width and 30 centimetres in thickness was excavated which was slightly overlapped the stone pit cover to the north (*ibid*, pp 235-236). This stone was covered on all sides by an elaborate incised design (See Figures 35 and 36). The design on the side that was facing up includes a spiral which continues as two perpendicular linear petroglyphs which undulate in places before forming an amorphous enclosed irregular shape, these linear carvings continue their meandering path across the edge and sides before continuing across the underside. The wavy lines continue on this face but this time they do not run in pairs but instead retain their own line of waves, sometimes looping back and at others terminating in an amorphous shape or just terminating entirely. The impression made is that this side has a less controlled expression with the lines being less ordered than on the spiral face. Hemp suggests that the patterns continuation on both sides is evidence that it



was meant to be set vertically upright, has a likeness to examples of rock art from Brittany and describes the meaning of the symbols as some ‘form of magic’ (Hemp, 1931, pp 236).



*Figure 35: Pattern stone in situ (O'Kelly, 1969).*

The pattern stone was found on top of a sealed layer of purple clay and the stone had been placed down deliberately on this prior to the mound's prehistoric construction (*ibid*). The stone is formed of coarse grit and due to the likelihood of wind and rain erosion wearing away the rock art it was sent to the National Museum of Wales in Cardiff and a replica was raised at the site.

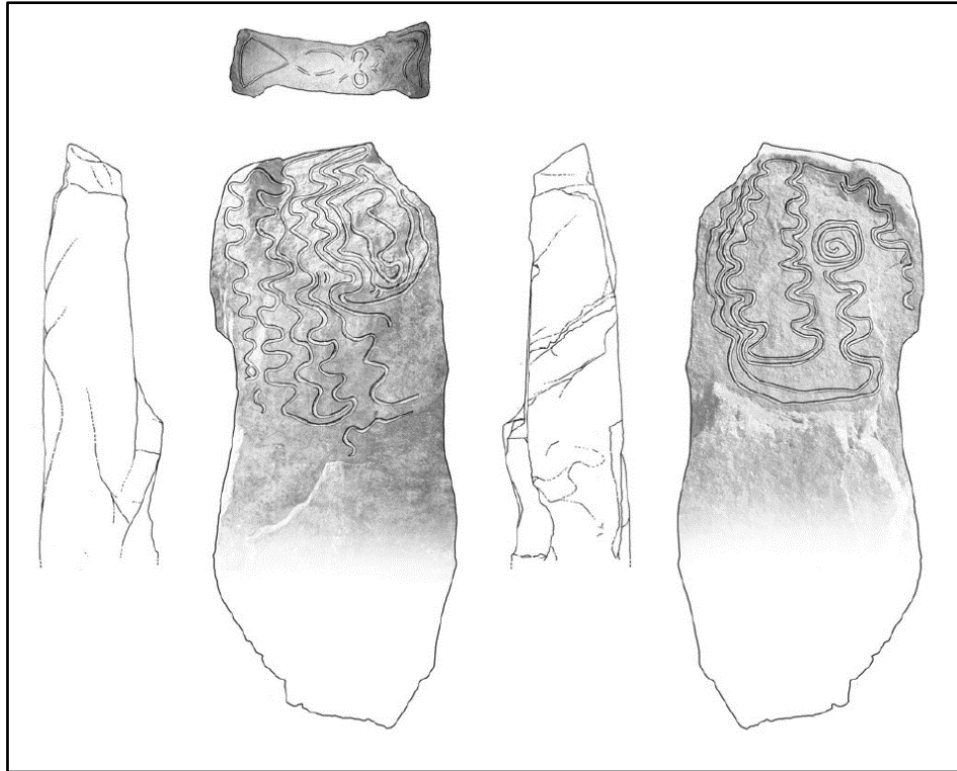


Figure 36: *The Pattern Stone* (Burrows, 2010).

During the cleaning back of the entrance the encircling line of kerbstones was discovered with Hemp deciding that the remainder of the season's excavation should be spent investigating these features and by the end of the 1929 excavation the entirety of the kerbstone enclosures circumference had been uncovered (*ibid*, pp 237).



Figure 37: *Remnants of henge ditch and kerb at Bryn Celli Ddu prior to excavation* (O'Kelly, 1969).

Hemp estimated that the cairn was 3.6 metres high and 48 metres in diameter (including the ditch) with the weight of the removed cairn material weighing in at 4,000 tons and suggested that the mound was originally taller with every metre adding 1,000 tons to the overall weight of the cairn. He noticed that the cairn material and stone made to construct the tomb were made up of local grit which was probably quarried from the outcrop in the neighbouring field, as no sign of pits or evidence of quarried material can be found in the surrounding landscape. The mound material was probably taken from the natural glacial deposits on which Bryn Celli Ddu now sits.

The following season Hemp excavated 3 sections through the mound and the encircling henge ditch was discovered. The ditch was 5 metres wide and almost 2 metres in depth and the approximate central point of the circle was the site of the pit with the ear-bone to the south of the chamber (*ibid*, pp 239). Within the ditch found evidence of burning alongside evidence of uprights and a careful packing of clay which prevented the stones of the mound eroding into the henge ditch (*ibid*). Hemp found that the ditch had been rendered by the layer of purple clay which lines the entire area within the henge enclosure and prevented the gravel side of the ditch from collapsing and silting toward the base. It was at this point of the excavation that Hemp noticed that the height of the kerbstones diminished towards the rear of the tomb, further accentuating the entrance (*ibid*, pp 241).

On completion of the sections that revealed the henge ditch and the kerbstones, Hemp turned his attention to the 3 stones (F, J & N) within the kerbstones which protruded through the surface on which the mound was built (see Figure 32). Stone N (see Figure 32) was found to be almost 2.5 metres in height and was set in a pit that had been carefully packed with stones so that the megalith was leaning away from the centre of the tomb at a 45° angle. Hemp deduced that the stone had not fallen and had been placed at this angle, the pit was not examined, and stone n was left in situ. Close to stone n; suspended within the mound material the cremated remains of a juvenile human between 8 and 10 years old were found(*ibid*).

Stone J (see Figure 32) was just under a metre in height with the upper part of the stone having been destroyed (*ibid*). This stone was set in a layer of the purple clay found throughout the tomb and to the south-east a hollow was found with a small stone 35 centimetres in height which was set upright and surrounded by the cremated remains of a young girl estimated to be about 15 years of age (*ibid*, pp 242). On top of the cremated bones a number of quartz stones

were placed with a circle of small flat stones encircling the hollow. Hemp suggests that the upright stone was phallic in its representation and the flat stone circle was the remains of a fire (*ibid*). Another burnt hollow was discovered to the southwest of the stone, but this one was found to only contain charcoal, broken quartz pebbles and fragments of the top of stone j (*ibid*).

Stone F was the largest of the three stones measuring in at just over 2 metres in length and was set at a 45° angle leaning out from the centre much like stone N (see Figure 32). No cremations were discovered in the vicinity of the stone but on examining its setting it was found to rest on three layers of quartz and rounded pebbles which in turn lay upon a natural soil surface (*ibid*, pp 243).

Hemp set his sights on ascertaining the relationship between the newly discovered ditch and the three large stones within the enclosure and the trenches opened up to do so discovered the remains of stone H (see Figure 32). This stone was in fragments, having been completely destroyed unlike stone J which had just had the top smashed away. The fragments within the socket were found to rest at the 45° angle pointing away from the centre, the same as stone N and F (*ibid*). The fragments of stone H (see Figure 32) were distributed to the west of the fragment filled socket and the stone was smashed down to a level lower than the archaeological horizon that had been reached (*ibid*).

Hemp deduced that stone N, J, F & H (see Figure 32) were all part of the innermost stone circle and lines drawn betwixt the stones all crossed at the point of the central stone and pit. This led the excavation to reveal the circle was in fact once made up of twelve upright monoliths, a recumbent monolith and a single group of small stones which were probably once the packing stones for a now missing monolith (*ibid*, pp 244). The stones had been located by the stumps that still remained or the hole through the clay floor in which they originally went through. Patches of burning and scorch marks were found across the purple clay floor surface. Hemp (1931) deduced that the sequence of events suggest that the purple clay strata was laid down after the completion of the chamber and the burial of the pattern stone. In the southeast sector of the site the purple clay floor was found to stop abruptly for three large stones which lay next to each other. Two of the stones were made of grit and the 3<sup>rd</sup> was schist and all had been placed in the tomb prior to the mounds construction and broken in two in situ (*ibid*, pp 245).

Hemp mentions an outer circle or Peristalith suggested in *Archaeologia Cambrensis* and drawn by Rowlands and on searching for it, found a single hollow outside of the spread of the original

mound. Hemp (1931) speculates that this is evidence for the peristalith but one-hole does not make a stone circle or kerb and further excavation around the original base of the mound would be required to confirm this.

A variety of fragments of wood were found across the site which were identified as hazel (which was excavated from a large hole at the front entrance, the henge ditch and was the most abundant species of plant remain on site), Hawthorn (2 pieces were found beneath the pattern stone and 9 fragments from non-localised areas), Pine (excavated from postholes 1 and 2 and from a large hole at the entrance), Blackthorn (a single piece was found beneath the pattern stone) and Oak (root fragments from large hole close to entrance and 5 small non-localised fragments). Hemp states that the mark of fire was to be found everywhere across the site, with patches of burning being present wherever the purple clay floor surface was revealed. Two large hearths flanked the entrance to the passage tomb on both sides (*ibid*, pp 249-250).

### Hemp's Artefacts

A number of prehistoric artefacts were discovered alongside the evidence of human remains and the architecture of the tombs itself (see Figure 32). A bead (see Figure 38), made from mudstone, was found resting on the inner bank of the ditch with no associated artefacts and Hemp speculates that it was casually lost by one of the tomb builders (Hemp, 1931). The bead (see fig 38) shows signs of wear on both the outside where friction from neighbouring beads wore the surface and the inside, where the string would have been threaded through the bead.

Although flint does not occur locally on Anglesey, between 15 and 20 flint tools and flakes were found during Hems excavation. Hemp also mentions that a vast quantity of flint had been found in the fields of the neighbouring farm of Holo Gwyn over the years (*ibid*). Hemp (1931) illustrated a number of these tools in his report, with a thumb nail scraper, a couple of blades, with the most interesting of the assemblage being a transverse arrowhead that are often found within henge monuments (see Figure 38).



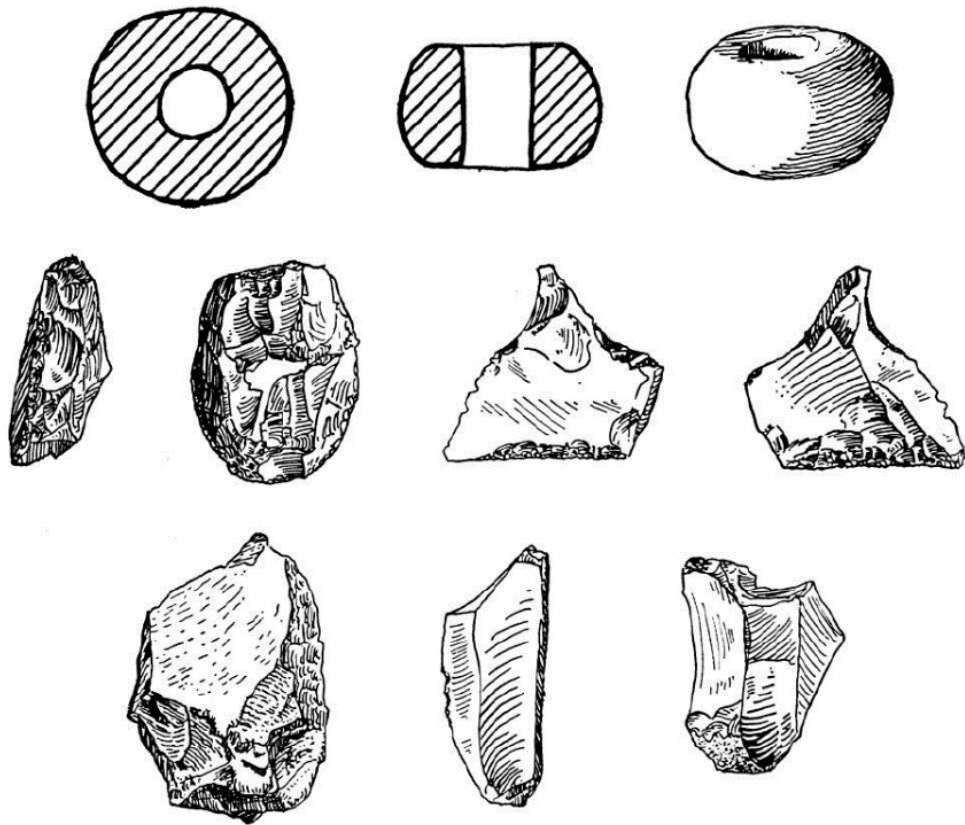


Figure 38: Artefacts recovered by Hemp during his excavation of Bryn Celli Ddu (Hemp, 1931).

## Hemps Conclusion

The records recounted here from Hemp's excavations have enabled us to form an initial blueprint of Bryn Celli Ddu. To summarise, Hemp proposed a series of events in which the monument was constructed over a single phase. The sequence of events deduced from Hemp's excavated evidence were as follows:

- 1) The central pit was dug.
- 2) The central pit is burned.
- 3) Piece of hazel and human ear bone deposited in central pit.
- 4) Brown layer of clay covers the hazel and ear-bone.
- 5) The pit is filled with a mixture of stone and clay.
- 6) Purple clay cone inserted into stone/clay mix.

- 7) A hollow is created in purple clay cone.
- 8) The central stone is lay on top of central pit.
- 9) Stone 3 of the chamber is raised next to the pit.
- 10) The pattern stone is laid down slightly overlapping the central stone.
- 11) The chamber is erected.
- 12) The purple clay floor is constructed.
- 13) Evidence of burning and cremations on purple clay surface.
- 14) The passage is built.
- 15) The completion of the ditch circuit
- 16) The inner stone circle is raised.
- 17) The kerbstones are placed.
- 18) The burials and ceremonies take place.
- 19) De-commissioning ceremonies are held.
- 20) The tomb is sealed.

## Recent Reinterpretations of Bryn Celli Ddu

### O'Kelly

O'Kelly's reinterpretation (1969) of the archaeological evidence obtained from Hemp's excavation was carried out during the excavation at Newgrange passage tomb in County Meath, Ireland. This work was undertaken by Claire O'Kelly and her husband, Michael O'Kelly, between 1962 and 1975 (O'Kelly, 1982. Pp 17).

Newgrange and Bryn Celli Ddu are often compared with one another, both are passage tombs in the Irish sea-zone; have quartz used as a building material; have a stone circle incorporated into the megalithic architecture; and incorporate rock art both inside and outside of the tomb. Both also possessed a possible central standing stone, although this is no longer present at Newgrange, but was mentioned in antiquarian records. Despite these similarities there are



differences between the sites, the most significant being the overall size. The mound at Bryn Celli Ddu is thought to have been no higher than 4.5 metres with a diameter of 27 metres (not including the ditch). The mound at Newgrange, in contrast, is 11 metres in height with a diameter of 82 metres (*ibid*, Pp 19). Newgrange also has a cruciform layout with two side chambers, a similar layout to the tomb at Barclodiad Y Gawres on Anglesey, whereas Bryn Celli Ddu is of the simple passage tomb form, with the passage connecting to a single chamber. Another difference is the quantity and precision of the rock art, Bryn Celli Ddu has two known petroglyphs associated with the tomb, the small spiral within the chamber and the pattern stone that was buried out of site beneath the mound. Newgrange has a vast quantity of rock art incorporated into the tomb both within the chamber, passage and outside on the kerb stones and the exquisitely carved entrance stone and light box above the portal (*ibid*).

### Purple Clays – Evidence of a buried ground surface at Bryn Celli Ddu

O’Kelly (1969) analysed Hemp’s extensive records for the excavation of Bryn Celli Ddu and questioned his interpretation of the purple clay layer as a purposefully laid floor claiming that the layer was in fact a build-up of ancient soil (see Figure 39). Stratigraphic data such as this usually suggests that the site had been abandoned at some point, allowing the sediment to accumulate, before a new phase of activity occurred atop this archaeological horizon. O’Kelly (*ibid*) notes that the purple clay layer is above those associated with the henge and stone circle phase and below the layers associated with the passage tomb. O’Kelly (1969) compares this phenomenon with the results from excavations carried out at the multiple cist cairn known as Moneen in County Cork, Ireland. At Moneen (O’Kelly, 1951) a clay layer with a striking blue colour and putty like consistency was interpreted as a layer that built up after the abandonment of the 1<sup>st</sup> phase of the tomb, this type of layer can also be seen at the ring fort of Garryduff I in Co. Cork, Ireland (*ibid*).



*Figure 39: The 2 pegs are set in the purple clay layer and the single peg marks the site where the pattern stone lay (O'Kelly, 1969).*

## Burrows and the Chronology of Bryn Celli Ddu

Steve Burrows revisited the artefacts and records from Hemp's excavation in 2010 (Burrows 2010). This study focused on the radiocarbon dating of wood and bone remains to form an accurate chronology for the sequence of construction events, and to provide evidence for the 2-phase theory proposed by O'Kelly (1969), discussed above.

Hemp's conclusion that the site was constructed in a single phase has been questioned by later researchers, with Eogan (1983) and Bradley (1998) suggesting that the site began as a smaller tomb that was partially enclosed by a stone kerb arc and subsequently enlarged with comparative architectural chronologies seen at Newgrange K (Eogan, 1983) and Bradley comparing the site to the Clava cairns (Bradley, 1998). Claire O'Kelly perceived Hemp's data to show that the site started as a henge and stone circles with the tomb being built atop this earlier structure (Burrows, 2010. Pp 251). The various theories about the first stages of Bryn Celli Ddu are illustrated in Figure 40.

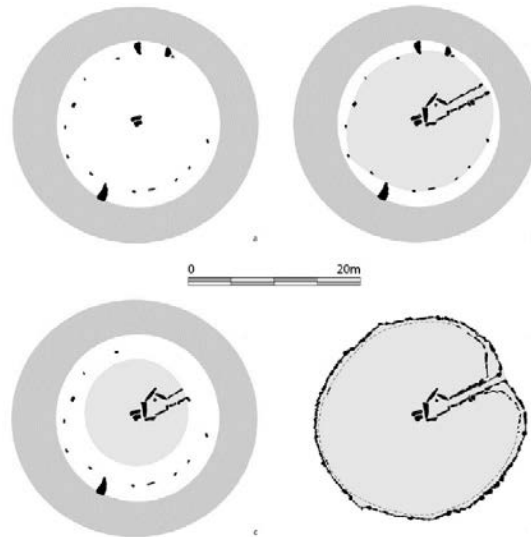


Figure 40: Possible 1st Phases of construction at Bryn Celli Ddu as suggested by a. O'Kelly (1969); b. Eoghan (1983); c. Bradley (1998) with d being the final phase that is agreed by all researchers (Burrows, 2010. pp 252).

Radiocarbon samples were taken from a variety of organic materials recovered during Hemp's excavation inside, beneath and outside of the passage tomb. Burrows' aim was to establish a chronology for the henge and stone circle phase beneath the clay layer, and date the construction and use of the passage tomb phase (Burrows, 2010).

The following section of this thesis will detail Burrows (ibid) discoveries as to the chronology of the monument.

5,990-5,730 cal BC (Mesolithic period) - The earliest dates come from fragments of pine wood from 2 of the posts at the tombs entrance and a piece of Oak found from a hole near the entranceway of the tomb (see Figure 22). Hemp noted that this area was the most complex part of the excavation, and his uncertainty can be seen with Hemp illustrating the posts as five posts in a line in his published report (see Figure 21) but with earlier interpretations by Hemp showing eight post holes forming a three-sided structure (Burrows, 2010).

3,310-2,900 cal BC - Cremated bone (UB-7113) was taken from the hollow marked by upright stone J from a pre-mound context (see Figure 41).

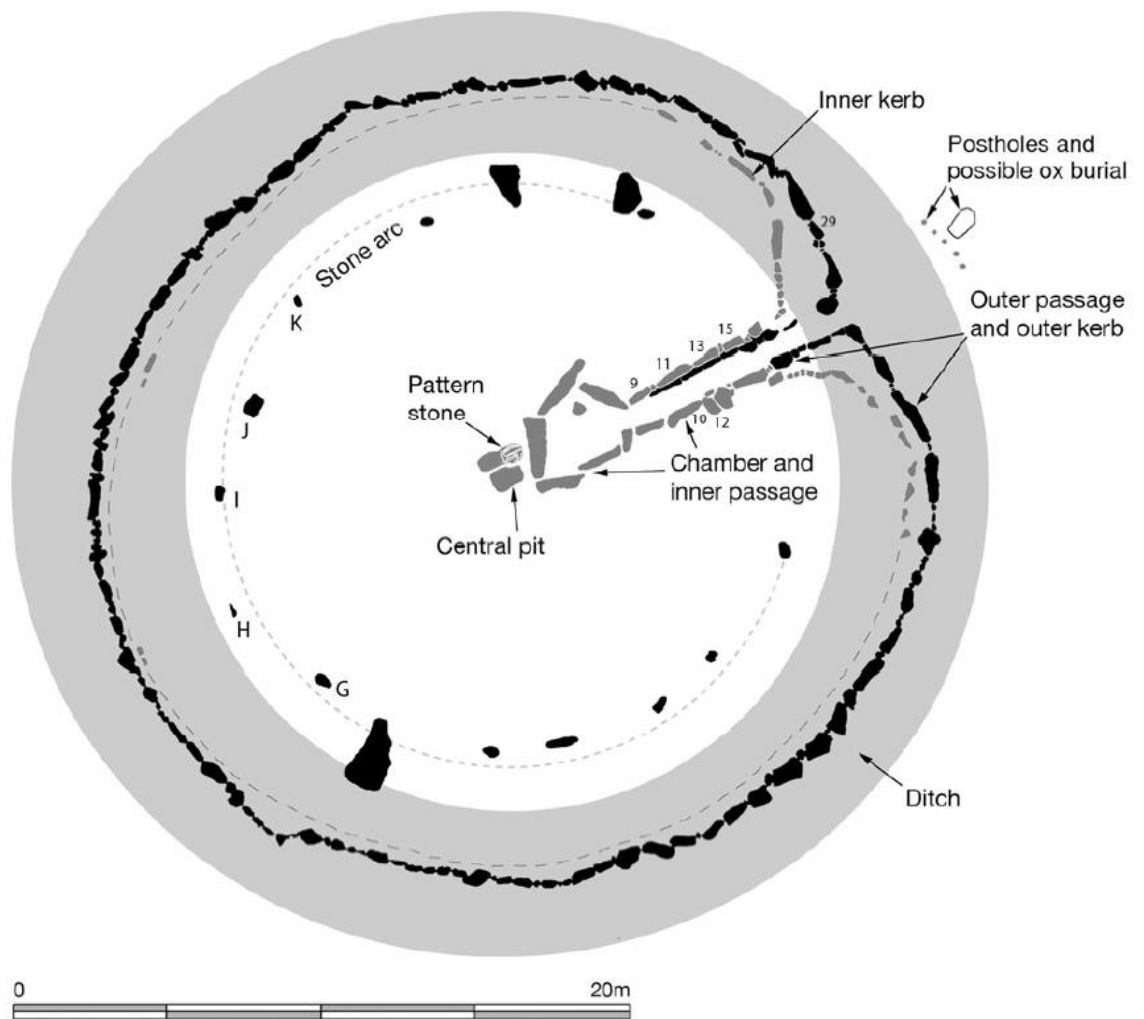


Figure 41: Burrows (2010) plan of Bryn Celli Ddu.

3500-3100 cal BC - Cremated bone (UB-7116) was taken from Stone hole I (see Figure 41) from within the stone arc from pre-mound context. Burrows suggests the later date for this bone than UB-7113 could either be a statistical anomaly in the radiocarbon dating, accidental incorporation into the tomb material or deliberate use of curated bone in the construction of the tomb.

3100-2890 BC – fragment of *Prunus Spinosa* (Blackthorn) and a fragment of *Prunus Avium/padus* (sweet cherry/bird cherry or hagberry) from beneath the pattern stone (see Figure 30). Burrows (2010, pp 262) views the pattern stone as “the symbolic heart of the tomb”

*Contexts associated with the use of the tomb*

3100-2890 BC- burnt animal and human bone taken from bottom layer of the passage close to stone 13 (see Figure 41).

3310-2900 BC- fragments of human bone taken from the south half of the passage opposite Stone 12 (see Figure 41) and from the north half of the passage close to Stone 11 (see Figure 30), some of these remains were taken from both above and below the pavement stone.

3330-2910 BC- One tooth from between Stones 9 and 11 (see Figure 41). Fragments of human bone, burnt animal bone and an unburnt antler from the passage.

3090-2890 BC- human bones from cavity behind Stone 29 (see Figure 41) of the outer kerb.

The results of the radiocarbon dating programme allowed Burrows to argue that the tomb was constructed somewhere between 3074 and 2956 cal BC, and to speculate that the tomb could have been calibrated to the midsummer sunrise alignment and constructed within two years (*ibid*, pp 263). Burrows (2010, pp 264) use of Bayesian modelling indicated that the tomb was in use as a burial site between 5 and 182 years. This broad range was taken from small amount of unidentified bone from Hemp's excavation. The most surprising evidence from the radiocarbon dates was the result from the 5 postholes at the entrance of the tomb, which gave Mesolithic dates and indicates that the landscape was in use by people for thousands of years before the construction of the henge, stone circle and passage tomb at Bryn Celli Ddu (Burrows, 2010).

## The Search for the Henge Bank

In 2016 an electrical resistance tomography survey was carried out at Bryn Celli Ddu (see Figure 42). The survey was carried out to ascertain if the ditch that surrounds Bryn Celli Ddu was accompanied by an outer bank, making Bryn Celli Ddu's first phase the classic definition of a henge (Griffiths et al. 2016). This was key to arguments surrounding the very unusual, indeed inverted, succession from henge to chambered burial monument.

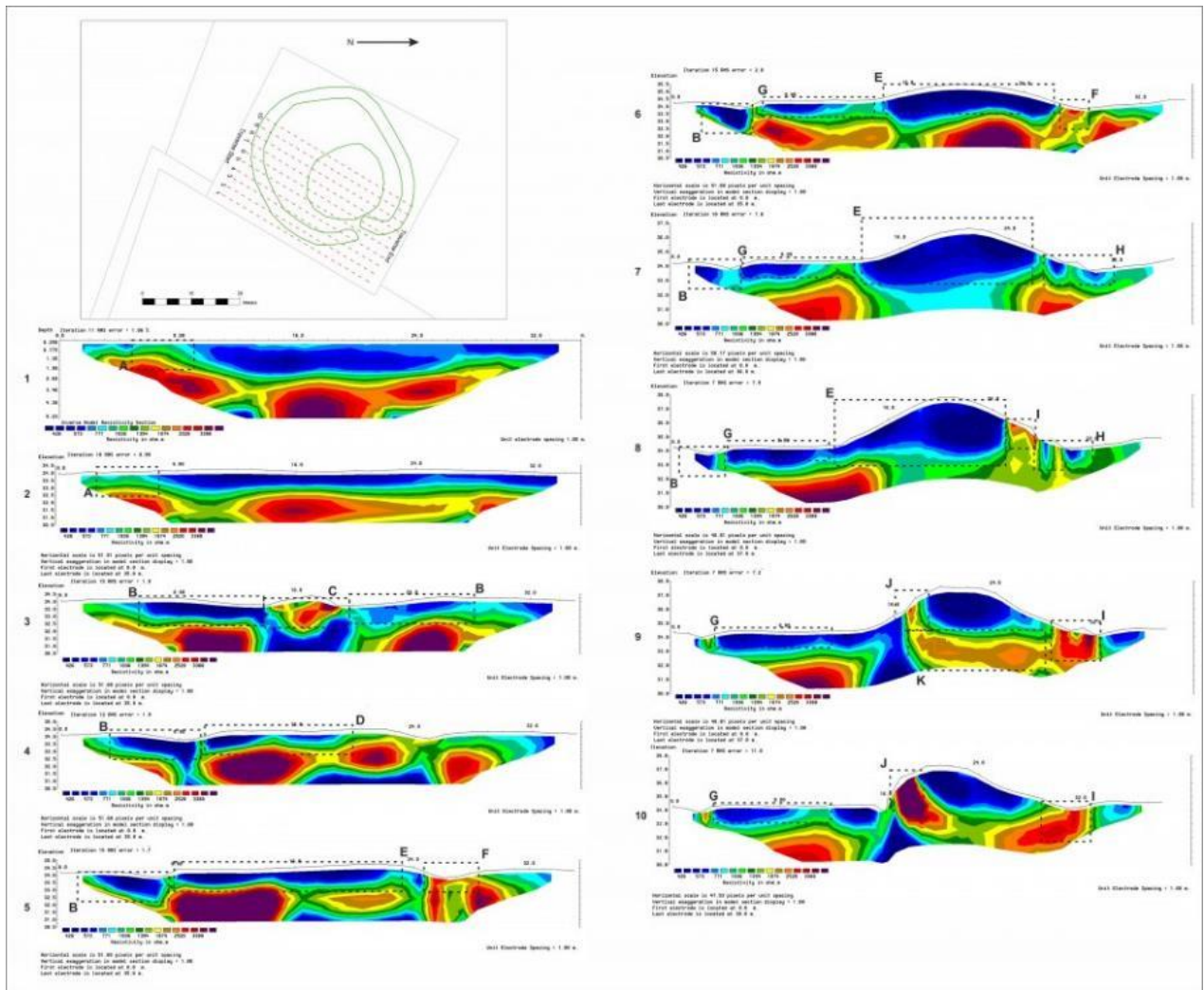


Figure 42: Results of Electrical Resistance Tomography at Bryn Celli Ddu, the bank anomaly can be seen in transects 1 & 2 and is labelled A (Griffiths, et al. 2016).

The results found that a bank did encircle the monument, despite it no longer being extant and only existing below the current ground surface (see Figure 42). Multiple readings across multiple transects, taking in half of the entirety of the monument, indicated that the bank surrounded the area of the ditch that was surveyed. The distance from the centre of the ditch to

the crest of the bank was measured to be exactly two metres, and evidence toward the entrance indicated a potential high-resistance stone surface outside of the entrance to the passage tomb (*ibid*).

These results are significant as they support the pre-tomb henge chronology likely and suggests that the henge predating the passage tomb subverts the known chronology of these prehistoric monuments.

### ‘Evolution not Revolution’ – the Development of Bryn Celli Ddu

Lynch speculates that the building of the passage tomb over the stone circle was a form of prehistoric iconoclasm; with a group following the new tradition of henge building constructing the earlier phases of Bryn Celli Ddu and a group that followed the earlier tradition of passage tombs took over the site and destroyed the circle and built the cairn on top of the site (Lynch 1991, pp. 92). It is only assumed that the tomb builders destroyed the circle as some of the stone still lay within their sockets. We know from the early antiquarian accounts the tombs were intact into the modern period and were denuded of the stone material over the course of 20 years in the early decades of the 1800’s.

It is likely that the missing stones from the stone circle at Bryn Celli Ddu were removed by farmers during the post medieval period to either harvest stone material for the construction of walls and buildings or to attempt to make the field suitable for ploughing. It is likely from the evidence obtained through excavation, with the stone circle being beneath the tomb mound and geophysical survey proving the existence of a bank, that the henge and stone circle evolved into a passage tomb and this possibility throws into question the reliance on typological form and architecture of prehistoric monuments from this period.

It is clear from the evidence that the site of Bryn Celli Ddu has had a long life, evolving from the Mesolithic period into the Neolithic with a number of phases within the enclosure itself. It is debateable that the site’s change from a henge/stone circle monument into a simple passage tomb was an act of prehistoric iconoclasm, as much of the structure of the henge and stone circle was subsumed into the tomb structure and it is possible that this is a case of the evolution of the site over the years that it was in use, rather than the destruction of the previous phase by new groups entering the area or later generations.



## Bryn Celli Ddu Bach, Llanddaniel Fab



*Figure 43: 3D photogrammetric model of the excavated areas of Bryn Celli Ddu Bach, showing the double ring kerb (Edwards 2019, unpublished report).*

Bryn Celli Ddu Bach (The Small Mound in the Dark Grove) lies 35 metres to the southwest of the passage tomb at Bryn Celli Ddu. Unlike Bryn Celli Ddu very little survives of this monument above ground, with the burial cairn being completely denuded in the final decades of the 18<sup>th</sup> century. The tomb was illustrated by Rowlands (1723) prior to the complete removal

of the cairn material. Skinner (1908) recalls that the cairn was dug into in the early 1800's with an earthen 'pan' and wedge of gold were recovered. Skinner (1909) suggests that the wedge of gold was probably a misidentified Bronze Age axe head with Lynch (1970) speculating that it was probably the remnants of a bronze knife. The cairn was excavated in 1929 and despite the ruinous nature of this monument it was found that an outer kerb and central cist had survived the damage caused by the antiquarian excavations and general dismantling of the structure (Lynch 1970). The stone kerb (see Figure 43), which defined the outer edge of the monument, was found to be 20 metres in diameter. The central cist consisting of a stone box made of flat stone slabs measuring 23 cm by 61 cm by 35.5 cm, with a capstone which sat flush with the ancient ground surface. The stone lined cist contained the cremated remains of an adult male with patches of burning and cremated bone being found close to the cist. Due to the damage caused in antiquity to the archaeological deposits it is difficult to ascertain whether these patches of bone and burning are separate cremation deposits or material that has been redistributed from the stone lined cist during the destruction of the cairn. This cairn is a later addition to the landscape than the Neolithic passage tomb at Bryn Celli Ddu and is probably Early Bronze Age in date given the bronze artefacts and the cremation burials.

### The Standing Stones

Two standing monoliths can be found within the fields surrounding Bryn Celli Ddu, the closest is 137 metres to the southwest of Bryn Celli Ddu, in the neighbouring field to Bryn Celli Ddu Bach alongside the large outcrop and stands just over one metre in height. This stone is unusual for three reasons, the first being that the width of the stone is greater than the height giving the monolith a roughly circular outline when viewed from the widest face, the second being that the stone is raised on an area of lowland in comparison to the immediate surroundings and standing stones are often raised in upland areas, although the distribution on Anglesey strongly indicates that this is not the case on the island. The third interesting aspect of this monolith is the modern drill hole that can be found in the top of the stone and goes to a depth of 5 centimetres. This modern alteration has brought the historicity of this stone into doubt with some believing that this stone was left by the medieval quarryman during the mining of the neighbouring outcrop. Drill holes however have been observed in other standing stones on the island, including several examples in the Llanerchymedd region (Dickson & Tram 2009, 99; 105) as well as a possible example recently discovered near Plas Medd, Coedana (Owen 2018, 58). It begs the question therefore whether this is indeed more recent quarrying or a form of

unusual decoration as of yet unrecorded. This could have been carried out with an early form of bow drill, as experiments have shown this technique was possibly utilised with the creqation of the holes seen on axe hammers and battle axes of the later Bronze Age periods (Osipowicz 2005).

The second standing stone is known as Tyddyn Bach (Small House) and can be found 450 metres to the northwest of Bryn Celli Ddu. The monolith (see Figure 44) is 3.3 metres tall, 1 metre wide and 1.25 metres thick. The stone also tapers to a point towards the top and the base of the stone is surrounded by a large clearance cairn, its encroachment having obscured most of the base of the standing stone. Located on a valley slope with good views of both the monument of Bryn Celli Ddu, as well as the Snowdonia Mountain Range on the horizon, this monolith certainly makes a better candidate for an authentic prehistoric megalith. Little more is known about these standing stones and both monoliths are further investigated as part of this study.



*Figure 44: Tyddyn Bach standing stone nr. Bryn Celli Ddu; Llanddaniel Fab (CADW).*

## Rock Art in the Bryn Celli Ddu Landscape

The rock art discovered on the pattern stone and the spiral within the chamber at Bryn Celli Ddu is not the only example of prehistoric petroglyphs in the landscape. George Smith (2013) discovered several cup carvings on top of the large outcrop in the neighbouring field to Bryn Celli Ddu and on outcrops stretching away to the west. The large outcrop has evidence of drill marks and has been extensively quarried since the Medieval period. There is no doubt about the importance of this outcrop during the Neolithic as the upright pillar within the tomb is made of the same blue schist geology having originated from stone quarried from the neighbouring outcrop. The petroglyphs consist of only cups with no ring marks on all of the examples at Bryn Celli Ddu, although cup and ring designs are not unknown of on the island. Further to the northwest, a stone with both cup and ring was discovered at Llwydiarth Escob farm near Llanerchymedd (Nash et. al. 2010, see 'Rock Art' case study chapter), and another stone with a pecked cup and ring motif was used as a packing stone for the monolith at Llanfechell (Smith et. al. 2013), which was discovered after the standing stone fell over after the land became boggy. Both of these examples of rock art have been 3D modelled as part of this research project, the results of which can be seen in the discussion chapter. More recently, yet another cup and ring marked stone has been reported on an outcrop near Tregwehelydd, Gaerwen: a site which yielded more petroglyphs nearby (see 'Rock art case study' section). Cup and ring marked stones, although notoriously hard to date, are widely agreed to be Neolithic to Early Bronze Age in date evidenced by their use at Neolithic tomb sites alongside examples excavated from sealed stratigraphic contexts dated to this time in the prehistoric.

### Bryn Celli Wen, Llanddaniel Fab

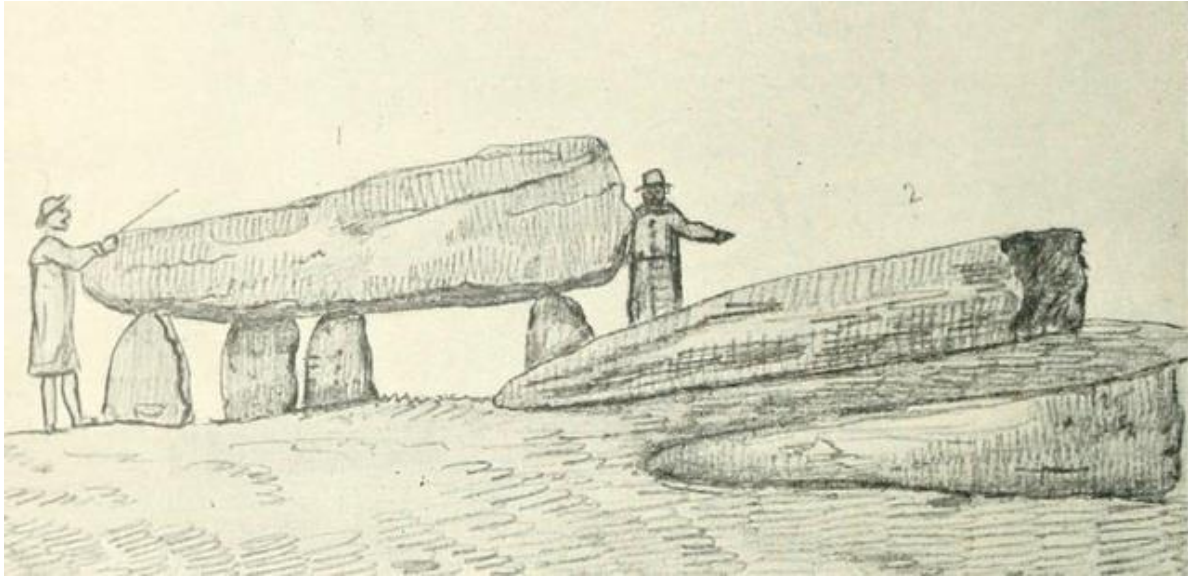
Bryn Celli Wen (Mound in the White Grove) is located at the top of the valley slope 400 metres to the east of the monument at Bryn Celli Ddu and its current defining historical feature is the ruins of a modern farmhouse within a wooded area. Bryn Celli Wen was excavated by Edmunds and Thomas (1990) as part of the Anglesey Archaeological Landscape Project following a series of experiments involving field walking and shovel testing across the landscapes surrounding the passage tombs at Bryn Celli Ddu and Bryn Yr Hen Bobl (Edmunds & Thomas, 1990).

The shovel testing technique involved digging test pits into the subsoil in an attempt to ascertain artefact date and distribution across large areas. The results from the immediate surroundings



of the tomb at Bryn Celli Ddu found little in terms of artefactual or structural evidence. This led Edmunds and Thomas (*ibid*) to remark that there appears to be no evidence of contemporary or later settlement in the areas surrounding Bryn Celli Ddu, similar findings were found across Bryn Celli Ddu Bach. They then turned their attention to Bryn Celli Wen. This site proved to be much more rewarding, as the team found a much higher density of worked flint, burnt flint and two small sherds of Peterborough ware pottery on the crest of the hill - close to a large and exposed rock outcrop nearby (*ibid*, pp 22). These findings led to excavations, with a 25 metre by 25 metre trench being excavated over a feature, at first believed to be a Neolithic pit, but on extension of the trench was found to be ditch. A section across the ditch noted that its fill contained burnt material, whilst further excavation of this feature found that it had been initially dug, then backfilled, then re-cut, extending from a large pit into a linear ditch with evidence of burning at the base. The ditch was then backfilled, and a number of posts were cut into the ditch fill. These posts were then removed, and the postholes backfilled. Following this phase there is a period of natural silting then a layer of the burnt material, from which 3 pieces of the Peterborough ware pottery was recovered. Edmunds and Thomas (*ibid*) suggest that this complex archaeological sequence at Bryn Celli Wen has parallels with the early phases of Crickley Hill in Gloucestershire, an Early Neolithic Causewayed enclosure. This type of enclosure is rare with only one other known example in Wales (*ibid*, pp 22.) and geophysical surveys using both resistivity and magnetometry were carried out in the Autumn of 1990 to image the extent of the ditch feature. The results of these surveys suggest that the ditch is part of an enclosure atop the hill which has a diameter of 180 metres (Edmunds and Thomas 1990, Pp 26). Following from Edmunds and Thomas' discovery of the ditch feature at Bryn Celli Wen, the landowner at Bryn Celli Ddu pointed out a number of earthworks in a field behind the school to the southwest of Bryn Celli Ddu in the fields next to the carpark for the monument. These earthworks were identified as hut circles and excavations recovered Late Iron Age pottery which shows that this landscape has seen human occupation from the Mesolithic to the end of the Prehistoric period (*ibid*, pp. 26 & 27).

## Chapter 3: Ty Newydd and Llanfechell: Background and History of Investigation



*Figure 45: Hand drawn sketch by Rev. John Skinner (1808) of Ty Newydd Tomb. Note the large stones to the right of the image.*

### Introduction

This chapter will introduce two further sites that were extensively investigated in the preparation of this thesis: Ty Newydd, the remnants of a tomb near Llanfaelog; and Llanfechell, an extraordinary landscape of standing stones to the north of the island. In both cases these monuments were recorded by early antiquarians but, as with so many sites on Anglesey, their understanding has suffered from a lack of investigation subsequently.

### Ty Newydd, Llanfaelog

The restored remnants of the tomb at Ty Newydd stand on the northern slope of an outcrop in a commanding position overlooking the village of Llanfaelog to the northeast and the coastal town of Rhosneigr to the West. The earliest account of this tomb is E. and T. Williams' list of Cromlechs on Anglesey, compiled between 1798 and 1801 (Williams et. al. 1798, pp. 288), which gives little information other than the fact it is listed as a 'cromlech'. As Bingley gives no description of the monument, attention must be given once again to Skinner's '10 Days Tour

of Anglesey' (1802), an antiquarian's journey around the island which took place in the winter of 1802.

Skinner describes the rectangular capstone resting upon 3 of the 4 upright support stones and two large stones lying next to the standing monument measuring in at 5 metres long and 1 metre thick. Skinner produced a sketch of the tomb prior to his departure on his continued travels. Of particular interest is the large stones to the right (see Figure 45), which may be suggestive of large orthostats or possibly standing stones. Following this Skinner was then led by a local to the ruins of another tomb half a mile away close to the banks of the River Crighill (*ibid*, pp. 46-47; see Figure 46).

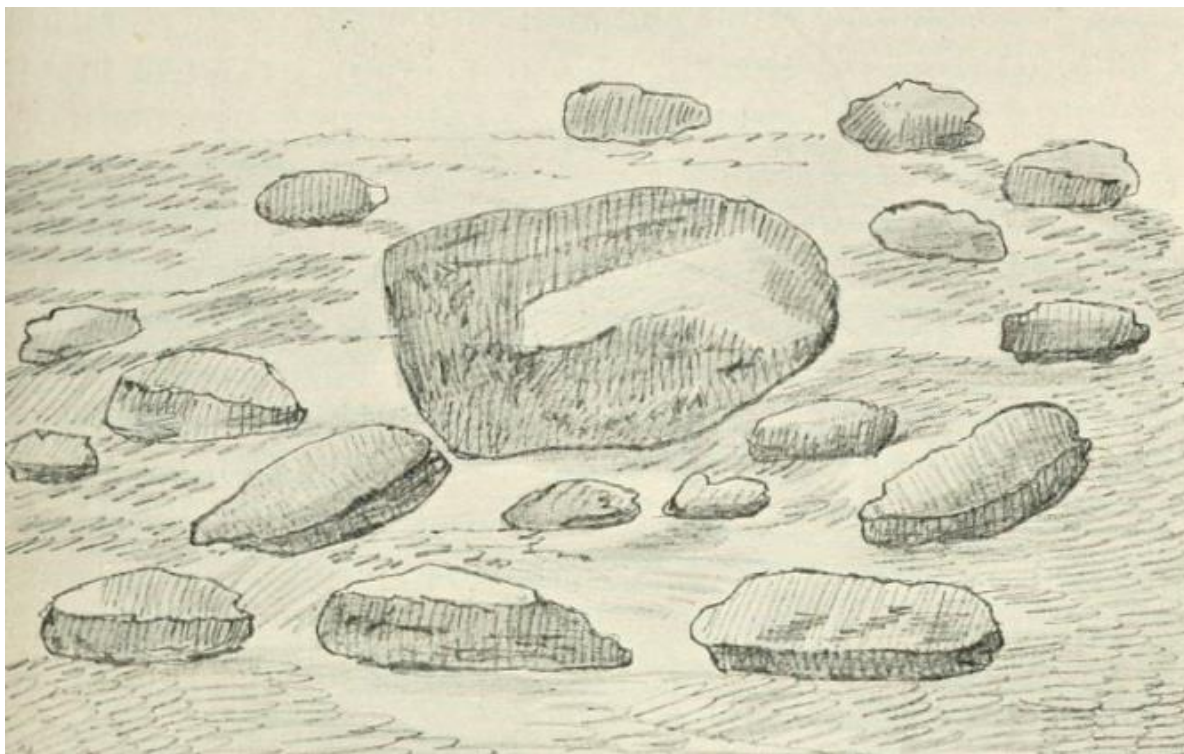


Figure 46: Depiction of destroyed tomb at Crigyll (Skinner 1808).

The tomb was next mentioned by H. Longueville Jones who visited it in 1844 (1864, pp. 44). Jones recounts his visit to the tombs at Ty Newydd whilst searching for Prehistoric and Early Medieval remains along the southwestern coast of the island. Longueville Jones at first describes the tomb as a 'double cromlech' but then likens the tomb to Bryn Celli Ddu and suggests that the second cromlech could be the partially collapsed passage, with the standing tomb representing the chamber. It is worth noting that Bryn Celli Ddu would have stood in a similar ruinous state in 1844 to the descriptions of Ty Newydd given in this account.



Longueville Jones also provides us with an illustration of the monument at Ty Newydd (see Figure 47) and states the importance of the recording of these ancient remains, as on his return to Ty Newydd 20 years later, the partially collapsed passage or 2<sup>nd</sup> tomb had been completely removed and used in the construction of the field walls.

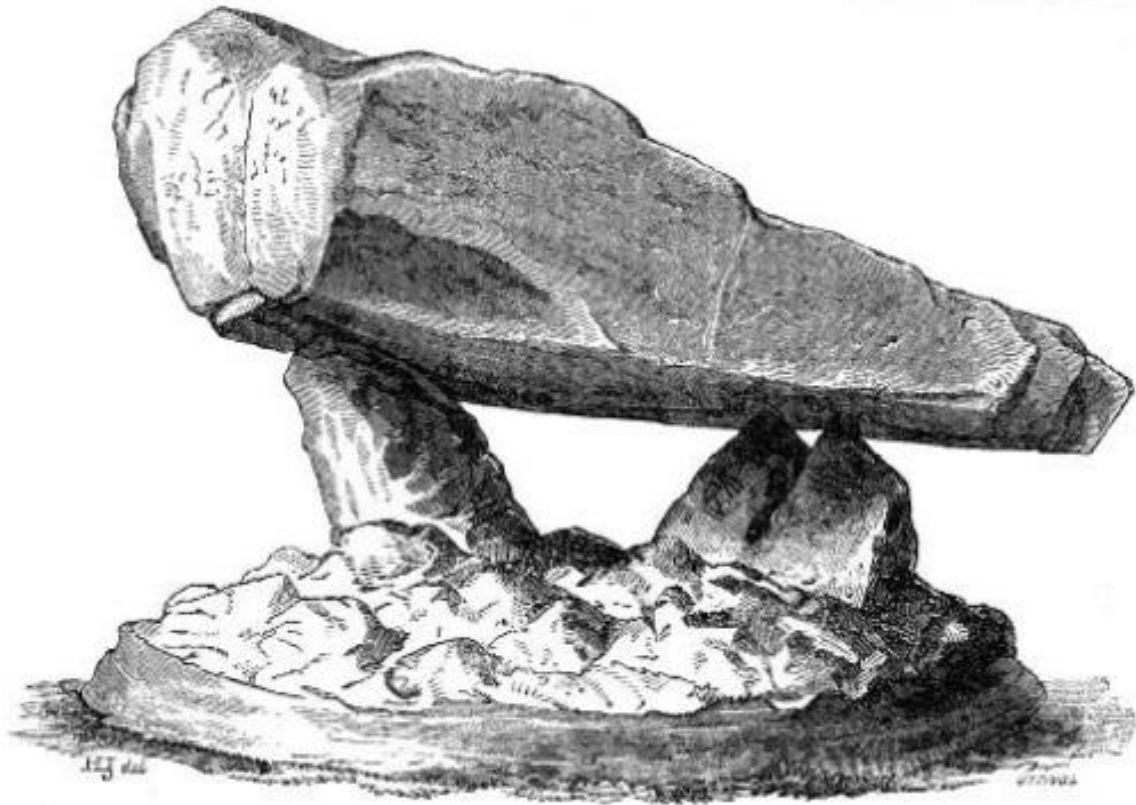


Figure 47: Depiction of Ty Newydd Tomb in Longueville Jones' report following his site visit (1864). The capstone is intact in this drawing.

He also recounts the tale of a tenant setting fire to the cromlech to welcome a new landlord on his arrival to the area (*ibid*, pp. 44). The tenant built a bonfire on top of the capstone and the heat caused the capstone to split crossways through the middle. He mentions that this needless destruction was regretted by the village but feared that the changing temperature of the seasons would cause the capstone to break into four pieces, further ruining the already damaged remains of the monument.

By the 1930s the monument was under the protection of the Office of Works. Concerns regarding the ever-widening crack in the capstone of the tomb prompted the restoration project, which was carried out in August 1935. The capstone of the burial chamber was supported with a girder and two stone supports were used to replace the now missing 4<sup>th</sup> upright stone. While

the girder was in place Philips took this opportunity to excavate within the chamber (Philips 1936, pp. 94).

Philips describes the condition of the tomb as mostly buried beneath a small mound, much of this material recently dumped at the base by the Office of Works in an attempt to support the capstone and to prevent it splitting into pieces prior to the restoration works. Before this modern material was removed, Philips noticed a large megalith within the chamber area and recognized this as one of the fallen upright supports. He also noted that the direction the stone had fallen into the chamber, alongside modern tool marks on the surface, suggested that the upright was pushed in and round in a failed attempt to topple the capstone (*ibid*). Once the modern material was stripped away, the excavation within the chamber began. Philips first encountered a layer of fine black earth containing a large quantity of charcoal, three beach pebbles, a limpet shell and 110 fragments of broken quartz which Philips notes is a common find in Early Bronze Age burials. The interior of the chamber measured 2.8 meters west-east and 1.3 metres north-south. (*ibid*, pp. 95; see Figure 48)

### PLAN OF THE TY NEWYDD CHAMBERED TOMB.

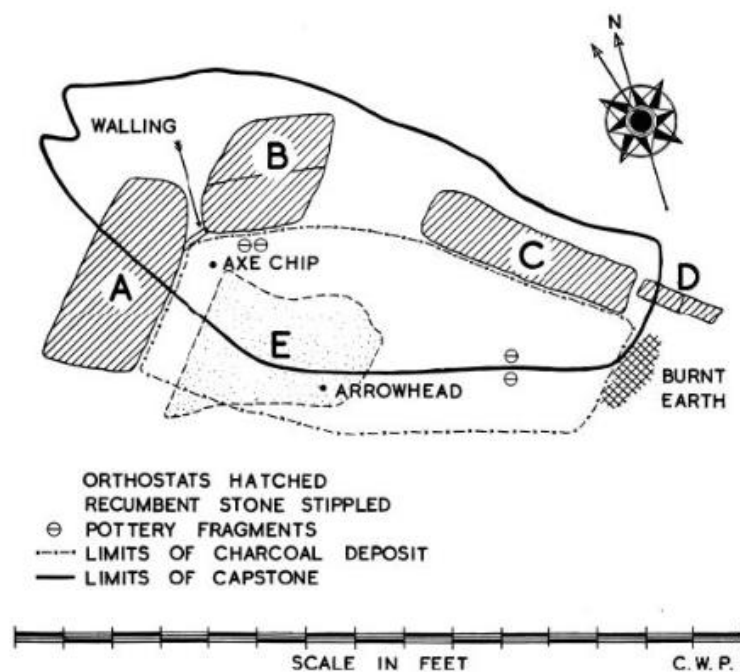


Figure 48: Philips recorded drawing of the site, showing structural arrangement and findspots (1936).

The worked lithics from this layer included 5 small flakes of flint, a fragment of polished flint axe head with a white patina and a broken barbed and tanged arrowhead. Nine sherds of prehistoric pottery were also excavated from this layer and Philips likened the material, rim and impressed cordage design to Beaker period pottery and concluded that the tomb was in use during the early part of the Bronze Age (*ibid*, pp. 97)



Figure 49: Image of barbed and tanged arrowhead recovered from chamber at Ty Newydd (Philips 1936, pp. 97).

One of the most surprising elements of Philips excavation was the discovery that the capstone was only supported by two uprights, with only one of these in its original position. The damage to the chamber had caused the capstone to shift considerably and it is remarkable that the tomb did not completely collapse.

On completing his excavation within the chamber, Philips turned his attention to the outside of the monument in search of the extent of the cairn material. On speaking with ‘old men’ from the local area he was told that the chamber once stood within an enclosure that was surrounded by a hedge bank (*ibid*, pp. 98). Philips excavated a trench between stones B and C (see Figure 48) which revealed that most of the material outside of the chamber had been cleared away with evidence of recent ploughing only a few feet from the chamber itself.

Post excavation analysis identified the types of wood from the charcoal layer and found a predominance of hazelwood charcoal (42 fragments), with six fragments of Oak, 1 of Ash, 1 of willow and 18 unidentifiable pieces. Philips also mentions the complete absence of human remains from within the chamber (*ibid*, pp. 97).

The Early Bronze Age origin of Ty Newydd was questioned by Lynch in Prehistoric Anglesey (Lynch, 1970. Pp 64). Lynch provides a drawing of the beaker pottery recovered from the

chamber and concludes that the simple cordage impressed design on the beaker is of a type that can be found at the end of the beaker period. Deposits such as the beaker sherds and fine barbed and tanged arrowhead are not uncommon finds within megalithic chambered tombs but are often associated with later re-use of these monuments, with the fragment of polished stone axe possibly being evidence for the Neolithic origins of Ty Newydd. Lynch (*ibid*, pp 64) also notes that no evidence of sockets for stones that might once have been a passage are mentioned in Philips' excavation report. Without this evidence it is difficult to typologise the monument at Ty Newydd: it is possible that it is either a passage tomb similar to Bryn Celli Ddu or possessed two separate chambers comparable to the tombs at Presaddfed and Plas Newydd (*ibid*, pp. 85-87).

### Llanfechell

The village of Llanfechell is in the north of the island, and in the hills to the northwest of the village can be found a collapsed tomb at Cromlech Farm. The first recording of the prehistoric remains around Llanfechell is found in the diaries of William Bulkeley (1736) of Bryn Ddu, which first record the name Cromlech Farm in an entry dated to the 25<sup>th</sup> of March 1736<sup>1</sup>. In 1796 the Cambrian Register provides the first recording of specific monuments at the farm and describes the burial chamber as a 'cromlech or druidic altar' (Williams E. & T. (eds.) 1796; p.288). This is the entirety of the known literature published prior to the 19<sup>th</sup> century that references the name Cromlech Farm, but does not speak of the cromlech from which the farm got its name.

In a prominent position on a hill overlooking the farm to the southeast stands the monument, recorded locally as the 'Meini Hirion' (Standing Stones); a fascinating site that consists of three megaliths, each almost 2 metres tall and raised only 3.3 m, 2.4 m and 2.9 m from one another. This site is also known as the Llanfechell Triangle and was recorded by Skinner in 1802 in the journals of his 10-day tour around the island (Skinner, 1802 pp 57), describing the monument as follows:

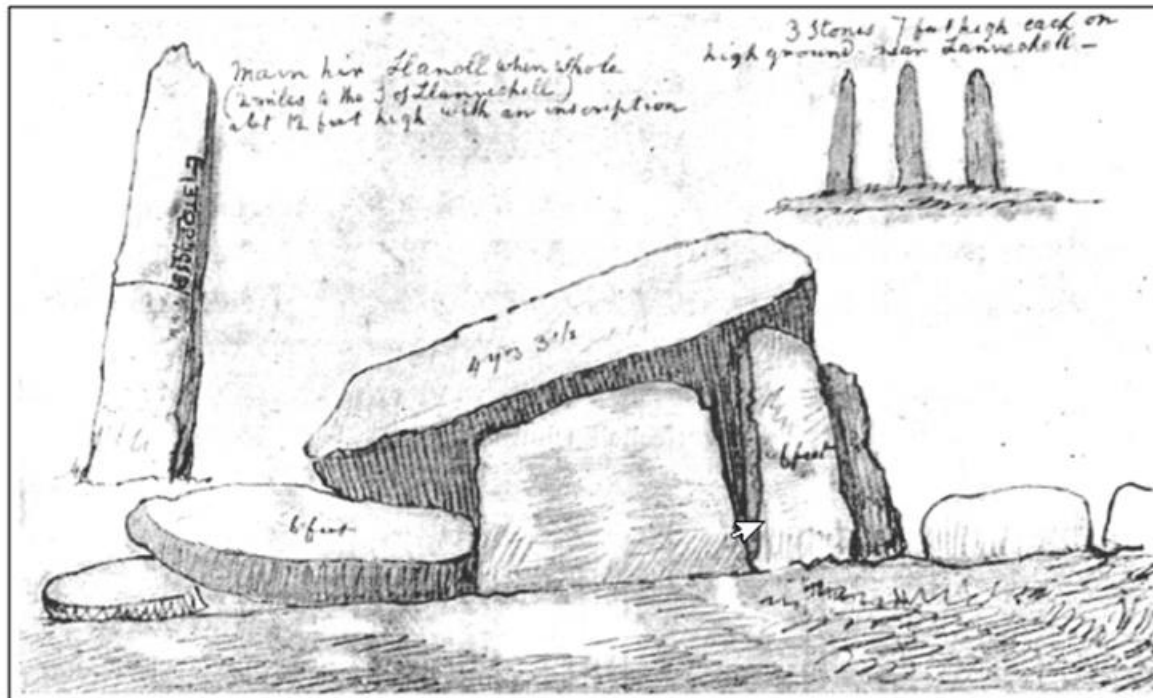
*'...we first visited three upright stones standing on a rising ground placed three paces asunder forming an exact triangle. They were about seven feet high and two feet and a half wide, These*

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<sup>1</sup> <http://Bulkeleydiaries.bangor.ac.uk>

*I make no doubt were intended as a direction to travellers as they might be seen from every rising hillock in the neighbourhood and also from the coast, we could not learn that they were called by any particular name if it had sounded anything like **are** it would have thrown some light upon the inscription in Llantrisant parish.’ (ibid, pp 57).*

Skinner suggests that the triangle functioned as a prehistoric signpost along an ancient routeway on account of its commanding presence atop the highest point in the local area.



*Figure 50: Skinner's sketch drawing of the megalithic tomb near Cromlech Farm (bottom-centre) and the Llanfechell Triangle (top right - 1808).*

Skinner also describes the remnants of the tomb at Cromlech Farm as ‘several large stones scattered promiscuously across the ground’ (see Figure 50) which attests to the already ruinous condition of the tomb by the early 19<sup>th</sup> century, and Skinner also makes mention of stone having been used to repair the nearby field walls. Despite this description, Skinner’s sketches of the monuments show the tomb at Cromlech farm was still supported by at least three upright megaliths at this time, with the angle of the capstone hinting at collapse of the tomb to the west. The uprights are now entirely collapsed, and the tomb takes the form of a low mound with protruding large stones (Smith, 2007).

The Llanfechell Triangle is represented in Skinner’s (1802) drawings as the silhouette of the three standing stones atop what appears to be a mound (see Figure 50). It is likely that the

mound is Skinner depicting the topography of the ridge on which the triangle was raised and not an extant mound at the base of the monument. Skinner records both the tomb at Cromlech Farm and the Llanfechell Triangle but does not make mention of the single large monolith that can be found on a neighbouring ridge on the Bryn Ddu estate, 0.6km to the east of the triangle (Arch Camb, 1908. pp 56).

Angharad Llwyd was the next to write about the site in her essay 'A History of the Island of Mona' (Llwyd, 1832). This essay won a competition at an Eisteddfod at Beaumaris which was held to commemorate the visit of Queen Victoria to the island. Llwyd (*ibid*) claims that the three standing stones at the Llanfechell Triangle were the orthostats which at one time supported a capstone, and her measurements add 0.9 metres to the height of the megaliths. Despite these inaccuracies, Llwyd's account serves as evidence of a renewed interest in the prehistoric monuments at Llanfechell, with the next mention of the site being by the Cambrian Archaeological Association when a group of their members visited the site in 1870 (*ibid*, pp.128). The account echoes Llwyd's theory that the Llanfechell Triangle is the remnants of a tomb minus the capstone, and it was noted that the tomb at Cromlech Farm was not visible from the Triangle, which hints at further collapse of the monument at this time. Its fate was revealed by Professor Anwyl in 1900 whom recorded the partial destruction of the tomb at Cromlech Farm using explosives, a technique of tomb destruction which was unfortunately not unique to Cromlech Farm, with stories of the blasting of the tomb at Mynydd Bodafon from eyewitness accounts claiming that the capstone was fired 80 feet into the air with the power of the explosion (Owen, per comms.).





*Figure 51: Photo taken of the tomb as it appeared c.1900 by J.E. Griffith.*

The earliest photographic evidence of the tomb at Cromlech Farm and the Llanfechell Triangle was taken by J. E. Griffith, a keen photographer and amateur antiquarian. The photographs (see Figure 51) show the tomb, looking towards the southeast, and by this time all the uprights have collapsed, with the capstone resting on top of the fallen orthostats. The photograph of the Llanfechell Triangle (see Figure 52) by Baynes (1911) shows the site much as it appears today, with the exception of the view to the horizon which is now dominated by the Wylfa Nuclear power plant.



*Figure 52: Photo of the stone triangle at Llanfechell (Baynes 1911).*

It is not until 1911 that Baynes records not only the Cromlech Farm tomb and Llanfechell Triangle, but also the megalith on the Bryn Ddu estate. He records the monolith as being aligned north south and suggests that the tomb at Cromlech Farm has a winter solstice alignment with the Llanfechell Triangle to the southeast (1911, pp. 70). Baynes also makes note of a large stone set into the southeast corner of the church at Llanfechell which may once have been part of the prehistoric landscape (*ibid*, pp. 51). Unfortunately, this stone does not appear to be visible in the interior or exterior of the church and it is suggested by Owen (2020, per comm.) that the stone might be obscured by the recently added limewash that coats the outside of the church.

The Anglesey Antiquarian Society officially recorded all known prehistoric monuments in the Llanfechell landscape and, interestingly, have recorded a piece of local folklore regarding the Llanfechell Triangle. Legend says that if you stand within the triangle at sunrise you will see ‘little people’ dancing round the nearby ‘maen hir’ (standing stone) at Bryn Ddu. Legends surrounding standing stones are well-known across Wales (Gwyn-Jones, 1930, pp 96). On

Anglesey the standing stone at Carreg Leidr (The Thief's Stone, Llandyfrydog) is named after a local legend of a thief being turned to stone following the theft of the local church's gilded bible (See Figure 10; Williams 1867, pp. 346).

# Chapter 4:

## The Foel: Background and Context

### Introduction

In the summer of 2020 local archaeologist and historian Arwyn Owen found and recorded two previously undiscovered rock art panels on an outcrop known as Pen-Y-Foel (see Figure 53 for location), a small hillock which can be found to the northeast of the village of Llanerchymedd.

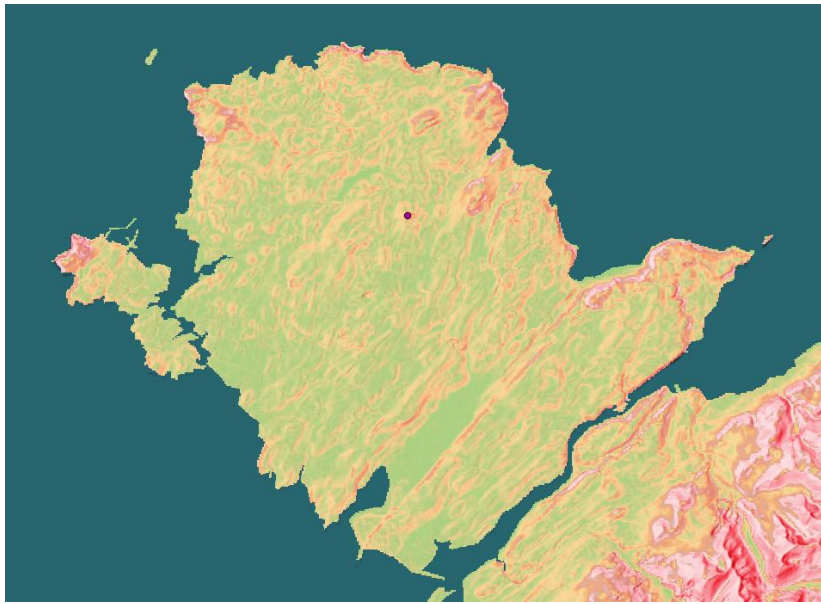


Figure 53: Topographic map of Anglesey showing the location of the Foel in the landscape.

The Foel (Figure 53 for location) is first mentioned in 1727 in Henry Rowland's *Mona Antiqua Restaurata* but only as a passing reference which first gives us the name for the Foel (meaning 'Bare or Bald', probably referencing the bare outcrop at its summit), but with no mention of any prehistoric uses of the site. However, it was this chance discovery of rock art that led to a series of events culminating in the excavation of the Foel by the author, and rediscovery of one of Anglesey's lost chambered tombs. This chapter sets out what was understood of the Foel prior to the preparation of this thesis.

### Early Records of the Foel

The poet Hugh Hughes (Y Bardd Goch/The Red Poet; 1693-1776) lived on a property at the foot of the Foel known as Llwydiarth Escob (The Bishops' residence, as it may have been owned by the Bishopric of Bangor at one time, see Carr 2011 pp. 278-9). Besides being a

celebrated poet, he was also a keen collector of old Welsh manuscripts which he compiled into *The Yellow Book of Dyfrydog* between 1763 and 1769. The book records sites of antiquarian/archaeological interest (both locally and across the island), place names and local folk medicine practices, but it was in the recording of family trees and genealogies that Hughes found that the area of the Foel and its surroundings has been settled since the Early Medieval period (Hughes 1766; pp. 71).

Local legend tells of a local Welsh warlord known as ‘Cyhelyn’ who fortified the Foel and built a mill on top of it (Archive Ref. WM/2626/9) but there are neither recorded historical writings nor recovered dateable archaeological evidence to prove this. It is believed that this fortification may have given the commote of Twrcyhelyn its name (‘Commote’ being the name of the medieval administrative area which covers the north-eastern corner of the island). Despite this, the possibility that this story is fact, passed down in the spoken word over several centuries cannot be ruled out, and this investigation must consider the possibility of extant or unrecorded Early Medieval archaeology atop the Foel.

The site was added to the First edition OS map of northern Anglesey (‘Holyhead’) in 1818 by Robert Dawson, a surveyor and cartographer. He was commissioned to produce a map of Anglesey and it is on this map that we see the area named as Y Foel Llwydiarth (see Figure 54), giving its height as 111 metres above sea level (Dawson 1818). A large quarry pit is also included on the map on the summit of the Foel (see Figure 54), but no other landscape features are visible atop the Foel itself. This quarry appears to be quite large, drawn as a crater and taking up much of the western side of the summit. The map makes no mention of historic or prehistoric monuments on the Foel itself, however Dawson does include the nearby standing stone at Llys Einion, and another monument (labelled as Gorseddau) is included to the west of Bryn Dyfrydog. A ‘Gorsedd’ is a council or meeting place for bards and druids connected to the Eisteddfod ceremony. These sites are labelled in a gothic font which is indicative of ancient and historic locations, but with no monuments visible atop the Foel itself. Given the site’s concealed nature it may be possible that Dawson failed to notice it on his travels. As such, the lack of any definitive references to archaeological monuments on The Foel makes it likely that

any that may have previously been unrecorded had been subsequently destroyed by the early 19<sup>th</sup> century.



Figure 54: Robert Dawson's Holyhead Map (1818) showing The Foel, named 'Y Foel Llwydiarth' at this period - presumably after its then and current owners at Llwydiarth Fawr (Dawson 1818).

The tithe map of Amlwch dated to 27<sup>th</sup> May 1841 (Halsam 1841) records the landscape to the north of Llanerchymedd, and the area known as the Foel is listed under the lands owned by Tyddyn Bacha (a 'registered small holding'). This name is very similar to the standing stone at Bryn Celli Ddu, with many sites being called Tyddyn Bach or Tyddyn Bacha across the island. Again, the map again does not make mention of any prehistoric archaeology atop the Foel but does mention that Tyddyn Bacha was under the ownership of William Pritchard Lloyd Esq who lived at Llwydiarth Escob, a fact that will become relevant later in this chapter.

Skinner (1802) visited Llanerchymedd on his 10-day tour of Anglesey in search of an 'ancient stone with an inscription' in the vicinity of the village. Unfortunately, Skinner was told that there was no such stone in the area by the local clergyman and was instead sent by the local innkeeper in the direction of the 'druidical' monuments that surround Mynydd Bodafon. There is no further reference to the supposed Llanerchymedd inscribed stone, and Skinner did not include a supposed location or description of what was carved onto it. It is difficult to ascertain the age of the ancient inscribed stone that Skinner attempted to find, as there is no mention of date, but it may have been a standing stone at Maenhir Llanol. This stone was reused for an Early Medieval dedication, situated close to the hamlet of Llanbabo, and had been visited by Skinner previously (Skinner 1908, p. 69).



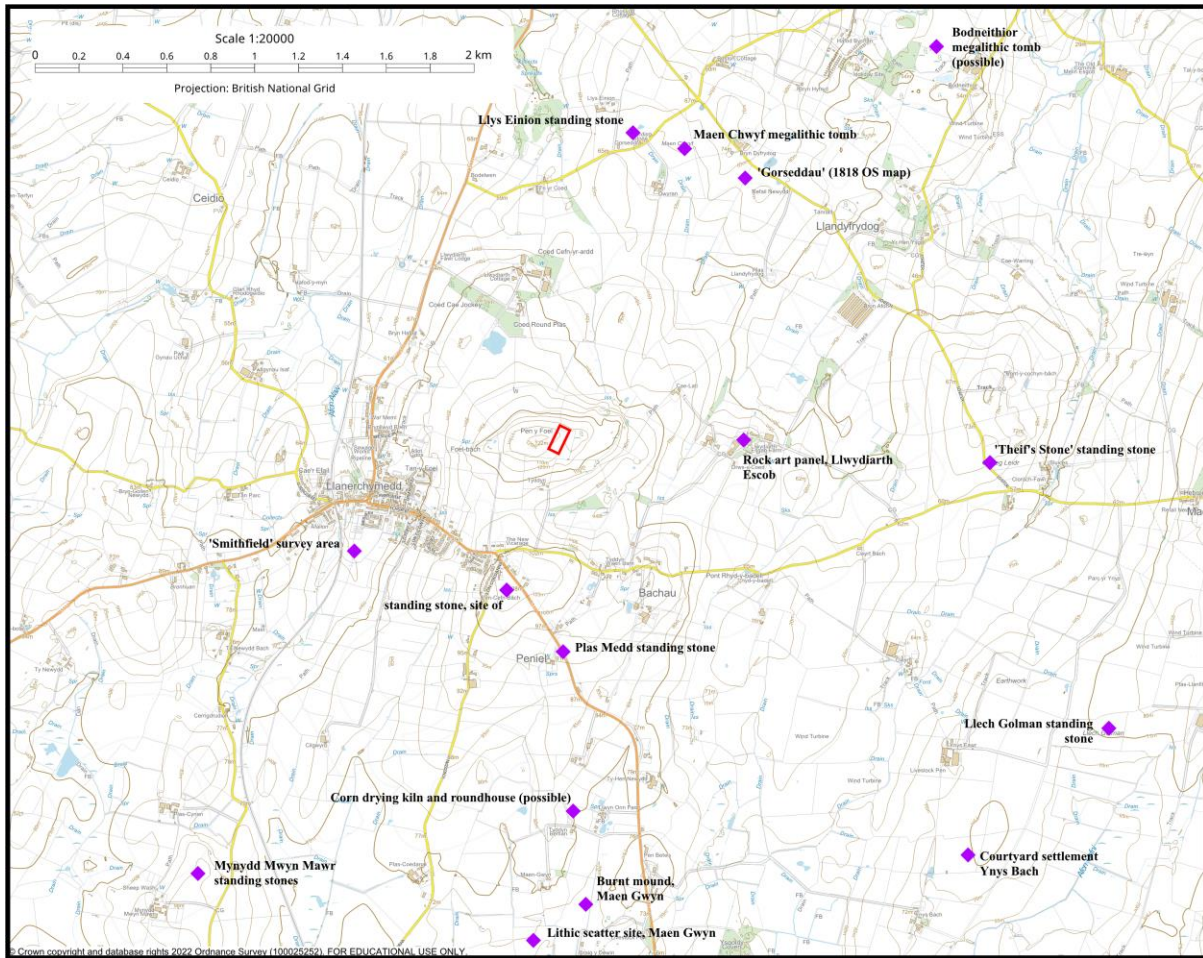
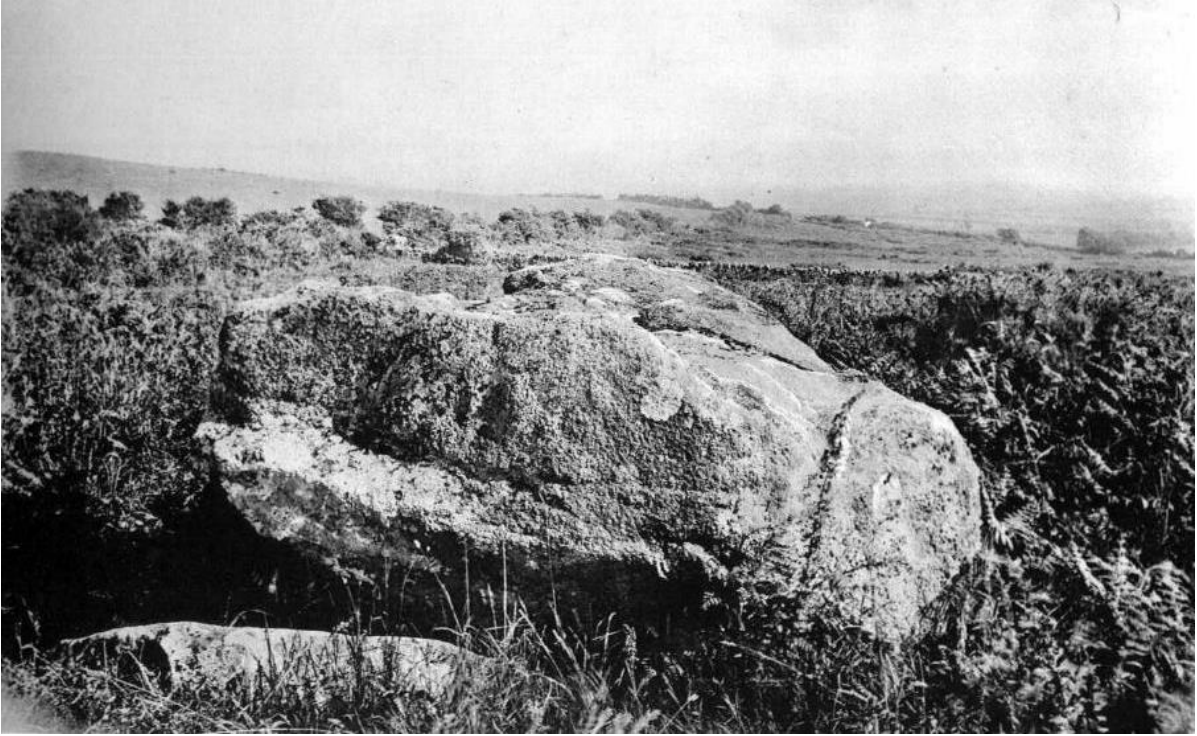


Figure 55: Map showing distribution of prehistoric monuments within Foel study area (new rock art area is highlighted with a red rectangle, centre image).

The earliest known archaeological survey of the area was carried out by Reverend H Longueville Jones in 1855 and was published in the 3<sup>rd</sup> series of *Archaeologia Cambrensis*. His report lists ancient monuments on the island including a tumulus near the B5112 road a mile and a quarter mile southwest of Llanerchymedd church (1855, pp 21): a disputed megalithic tomb known as Maen Chwyf ('the rocking stone') which lies in the lowlands beneath the Foel to the north (1855, p.23). The stone was used as a platform for the Welsh Eisteddfod (a Welsh cultural event) in 1835 (Williams 2006; p. 199). Longueville Jones also records a standing stone at Llech Golman to the southeast (Jones 1855, p.23), but again makes no mention of any ancient monuments on the Foel itself.

Griffith (1900) published a portfolio of photographs of ancient burial monuments, including photographs of the stones at Maen Chwyf (see Figure 56-57), which Griffiths refers to as owned by 'Gaerwen Farm'. The image shows a large boulder with a stone beneath it, but little else is visible that could identify this site as a tomb.



*Figure 56: Photo of Maen Chwyf, taken from the Northwest, by Griffith before 1900.*



*Figure 57: Photo of Maen Chwyf, taken early 20th century, by an unknown photographer.*

Maen Chwyf is again recorded by an anonymous photographer from the Edwardian era, which shows a clear image of the large boulder known as the rocking stone (see Figure 56-57), due to its bowed shape. A large stone beneath the boulder in the photograph is possibly one of the

upright supports for a monument, with the rocking stone being the capstone of a now collapsed megalithic tomb.

Baynes (1910) published an article in the *Cymmorodion* transactions that included a map of cromlechs and standing stones in the area surrounding the Foel, including destroyed monuments no longer visible in the landscape. Baynes records Maen Chwyf as a burial chamber (Baynes 1910, pp. 54-5), and the Llech Golman standing stone is described as ‘a rough quartzite pillar with uneven sides, measuring eight foot six inches high and ranging from three to five feet in diameter’ (*ibid*, pp. 72). The etymology of the name ‘Golman’ comes from the legend of Irish chieftain Golman, who is mentioned in local legend as having constructed defenses near Tre Wyn called Ffos Golman (‘Golman’s ditch’) where a small hoard was reported to have been discovered in the eighteenth century (*ibid*, pp. 72-3). Again no reference is made to monuments on the Foel itself.

An unpublished interim report by the Anglesey Antiquarian Society mentions an inscribed stone near the property of Ty Hen close to the village of Llanerchymedd (1912 pp. 11). This stone was reported once again by the Anglesey Antiquarian Society in published reports on prehistoric monuments in the area, recording an engraved stone at Ty Hen which is now lost (AAS 1913, pp 12), Maen Chwyf, Llech Golman and the standing stones at Mynydd (Mwyn) Mawr (AAS 1915. Pp 12). This ‘nature engraved stone’ may have been the monument that John Skinner searched for on his journey across the island over a century prior, although this is impossible to prove. Also mentioned in later records is a tumulus that once existed by the road a quarter of a mile west of the church at Llanerchymedd (AAS 1915. Pp 12), that was thought to be Early Bronze Age in date (Baynes 1923, pp 31). Mynydd Mwyn Mawr is also known for two standing stones that align on a natural spring on the summit of the hill. These stones are in direct view of the Foel, with the Foel being the most prominent hill in the area surrounding Llanerchymedd. Further reports from the Anglesey Antiquarian Society do not mention anything prehistoric and focus on the church at Llanerchymedd.

The Royal Commission on Ancient and Historical Monuments of Wales (RCAHMW) released a report in 1937 which records a number of standing stones in the area around the Foel. These include Carreg Leidr, Llys Einion and Llech Golman (RCAHMW 1937; 52-3) and notes that this stone was packed around its base and that it was raised on a slight hill. Maen Chwyf is

described as a possible collapsed burial chamber and, despite Llanerchymedd having an entry within the report, only the church itself is recorded (*ibid*, pp. 37).

### The Escob Stone

In 1991 the 2<sup>nd</sup> edition of Frances Lynchs Prehistoric Anglesey was released and within it the first record of the Llwydiarth Escob stone. This is a fragment of hornblende picrite (a type of stone geologically unique to the area of Anglesey that includes the Foel) that has a number of cup and ring petroglyphs pecked onto one face (Lynch 1991, pp. 350). Two cups are encircled by a number of complete and partial rings, two of which are connected by a linear groove with a cup, and cup and partial ring also visible on the far right of the panel. The panel also seems to be enclosed by a linear groove which frames the cup and ring, whilst the dimpled texture on the surface of the stone is unusual but possibly natural (see Figure 58). A 3D model of this stone was created as part of the project, the results of which are presented in the discussion, and which provides the best image thus far of the rock art inscribed into the Escob stone.

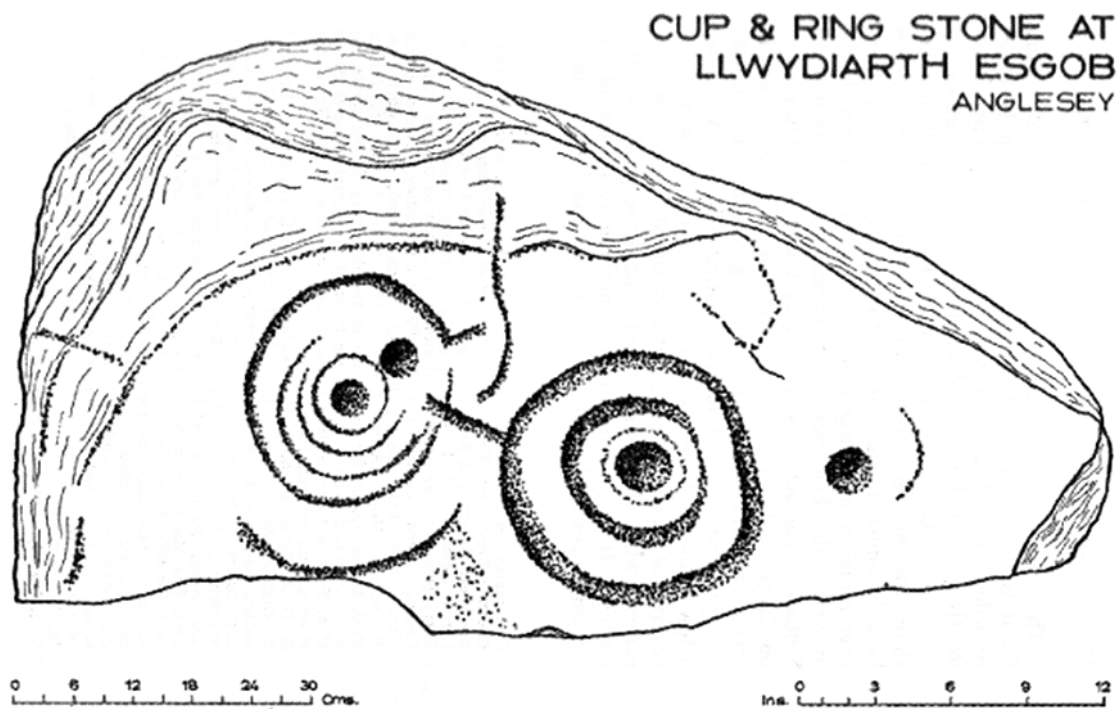


Figure 58: Rock art panel at Llwydiarth Escob (Lynch 1992).

Lynch (1991) also mentions a number of artefacts recovered from the area around Escob Farm, including half of a Late Neolithic/Early Bronze Age axe hammer (*ibid*, pp. 142, fig. 39, no 4); a broken hammerstone or battleaxe of probable Bronze Age date; a rough out of a Graig Lwyd



stone axe (*ibid*, pp. 112; Fig 30, no. 12); and a large polished Langdale axe which was found when the farmer dug a ditch. Lynch includes the stones at Maen Chwyf in her map of ancient locations (Lynch 1991, pp. 62) but uses the symbol of destroyed or doubtful tomb to label the site.

In 2003 a survey of prehistoric monuments was carried out by CADW (the national heritage body to Wales). In the follow-up report written by George Smith (2003, pp 14) it refers to the Llwydiarth Escob stone, suggesting that this rock art panel was once part of a larger monument within the landscape. Smith also describes the stones at Maen Chwyf as a possible chambered tomb (*ibid*, pp 14). This report was followed by a threat-related assessment to the area in 2007, when sites near Ynys Bach in Coedana were identified through cropmarks during a particularly dry summer. Geophysical surveys were carried out which revealed anomalies associated with roundhouses and fortifications from the Iron Age/Romano-British period (Hopewell et. al. 2007, pp. 20-2). The next surveys to be carried out by CADW were undertaken in 2010 which investigated a circular feature at Dyfrydog Farm. The results of geophysical survey and analysis were inconclusive, with suggestions that it could be a prehistoric monument or a Medieval haystack stand (Smith and Hopewell 2010, pp. 22-33).

George Nash revisited the Llwydiarth Escob stone when surveying the rock art of the island for the Anglesey Rock Art Project. Nash (2010, pp. 257) suggests that the Escob stone is a fragment of a larger rock art panel and suggests that it was part of a larger monument, stating that it might once have been an upright support from a megalithic tomb, or was part of a standing stone from an upland area close to Escob Farm.

In 2014 C. Dickson and N. Tram recorded the possible association of landscape features with the pair of standing stones at Mynydd Mwyn Mawr, after noticing a natural spring in the corner of the field which aligned with the two standing stones. This alignment then continued to the east of Llanerchymedd and terminates at two funerary monuments to the north (Dickson and Tram, 2014). They also recorded unusual geometric rock art on the standing stone pair, with the north stone having a rectangular depression carved into it, and the southern stone having a drilled hole in the top (*ibid*, pp. 101).

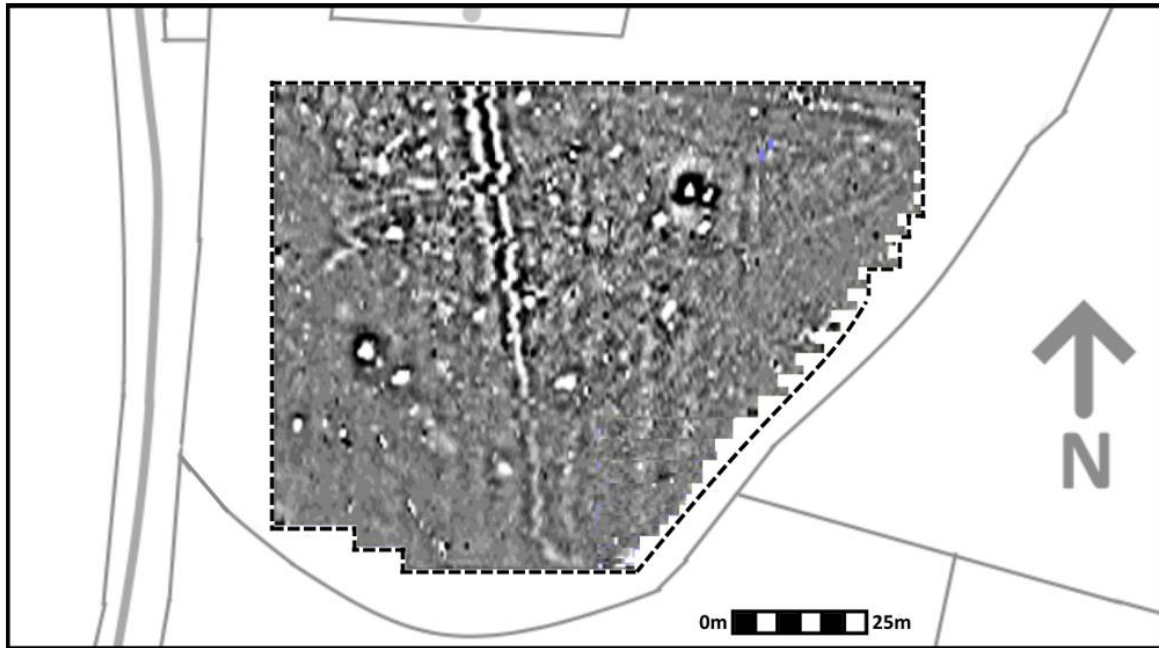


Plate 2: Gradiometer survey result: 'Smithfield', Llannerch-y-medd

*Figure 59: Geophysical survey results from 'Smithfield' site, Llannerchymedd - with anomalies visible in field indicative of earlier, potentially prehistoric settlement (Owen 2020, with kind permission).*

### Twenty-First Century Investigations

Between 2018-2020 a research project was conducted by local historian and archaeologist Arwyn Owen into the history of the village and surrounding areas, including the Foel. With assistance from the author, a geophysical survey was conducted which identified anomalies suggestive of a prehistoric settlement near the village church (Owen 2020 – see Figure 59). Following this, fieldwalking and metal detecting surveys have identified a number of lithic artefacts indicative of prehistoric activity in the area (Owen 2020, unpublished). Map regression analysis by Owen also identified a number of lost prehistoric monuments nearby, including a site called ‘Gorseddau’ near Bryn Dyfrydog, and a possible previously unrecorded megalithic tomb at Bodneathior (Llandyfrydog); both monuments visible from the Foel summit (Owen 2021, per comms.).





*Figure 60: Image of Coedana area showing burnt mound in bottom right corner (Owen, with kind permission).*

Owen (2020) published the most in depth analysis of prehistoric and historic remains in the area surrounding Llanerchymedd, recording a number of historic and recent archaeological sites and findspots in and around the nearby parish of Coedana, immediately to the south of the Foel. These include an area of potential archaeological interest near Maen Gwyn to the west of Coedana Church (Owen 2018). Historically, a written account exists of the discovery of an exquisite stone axe head made from dolerite, found during ditch cutting near the farm during the 19<sup>th</sup> century and now held in the National Museum of Wales (Lynch 1991; 140-1, with a photo of the axehead seen in Burrow 2011; 97). A research project led by Owen between 2018 and 2020 would later record new features and findspots, including a burnt mound to the east of Maen Gwyn (see Figure 60), along with over 100 flint tools found during field walking survey across the surrounding fields of the farm, indicative of significant prehistoric activity in this area (Owen 2018, pp. 23-25; Owen 2020, unpublished). To the north, Owen has also recently discovered a possible standing stone nearby Plas Medd, an area with several springs nearby (Owen 2018, pp. 23-25), alongside a disc scraper findspot a short distance to the south of Late Neolithic/Early Bronze Age date (Owen 2022, unpublished). On Owen's property (Meillion)

there have been several archaeological features and findspots recorded, including a possible corn drying kiln of Bronze Age date (Owen 2020, per comms.) as well as structural remains which may be the possible remains of nearby roundhouses – complete with dateable finds of chert and flint tools (Owen 2020, per. comms.). To the east of the property a worn neolithic scraper was also recorded from a molehill (Owen 2020, per comms.), which was identified following a visit to Oriol Môn in 2017.

These finds fit in well alongside the finds from St Marys church at Llanerchymedd, which include 22 lithics and a possible settlement of prehistoric date found through geophysical survey (Owen 2020, unpublished – see Figure 59). Between them, this proves that the areas to the south and west of the Foel are hotspots for prehistoric activity in the area. Coupled with the finds at Maen Chwyf to the north and the standing monoliths found throughout the surrounding area, it is clear that there is much prehistoric archaeology discovered in recent years. Despite no mention of prehistory atop the Foel itself it is unlikely that this imposing natural landscape feature would have been ignored in prehistory, and must have been utilised at some point.



*Figure 61: Selection of worked lithic objects/tools found near Maen Gwyn (Owen, with kind permission)*

Alternative sources to antiquarian or archaeological reports contain only passing references to the area and no mention of prehistoric monuments around the Foel or Llanerchymedd. The only source which provides possible further evidence of lost monuments is from a painting by celebrated artist Kyffin Williams (1918-2006) of the remains of a tower windmill (of 18<sup>th</sup> century date) known as G'allt y Benddu, its name deriving from the hill ('Allt y Benddu' or black-topped hill) immediately south of the Foel. The archaeologically interesting element of the painting is the standing monolith in the field in the foreground, which is no longer there



(Oriol Môn Art Collections - see Figure 62). Local living memory recalls a stone being in this field, but Kyffin's painting seems to be the only visual record we have of this site. It has been suggested by one local (Gwyn Williams) that the stone was buried in the field. Further conversation with the landowner (Tecwyn, Pencefnmawr) has proven inconclusive at present.



*Figure 62: Oil Painting of possible standing stone by G'allt y Benddu Windmill (Llannerchymedd), by Kyffin Williams (c. 20th century). With kind permission by Oriol Môn.*

To conclude, it has been established that although there is a large amount of evidence for prehistoric activity in the landscape surrounding Llannerchymedd, a principal area of focus for this thesis, the Foel, remains heavily understudied. Maen Chwyf has been discussed from 1818 to the present day, yet no large scale investigation has been carried out to establish the site's potential origin as a prehistoric tomb before it became the platform for neo- druidical ritual. There are no records available in the public and academic domain that make mention of any known prehistoric human activity atop the Foel, and it would appear that the rock art on the outcrop has been overlooked despite a number of antiquarian and archaeological investigations at its base and in the surrounding area. The discovery of rock art on The Foel, made by Owen during his government-sanctioned exercise during the Covid19 lockdown, spurred the further

investigation of the area in the preparation of this thesis. This further investigation included taking advantage of the rare opportunity to excavate a previously undiscovered Neolithic monument.

## Chapter 5: Methods

Several modern imaging techniques have been utilized during this research project. Methods often used in landscape archaeology such as aerial photography; LiDAR mapping; mapping using GIS software; as well as geophysical surveys using resistivity and magnetometry have all been used in this study to discover new aspects of the archaeology of these ancient sites. These methods are used alongside modern imaging techniques such as 3D photogrammetry to better illustrate the archaeological features and artefacts to the reader and these techniques will be listed in the following section.

### Mapping

The first approach to the landscape of Anglesey utilised in this study was to create a topographic map of the Isle of Anglesey. Modern OS maps are not ideal when it comes to the study of prehistory as the majority of information recorded has been created after the prehistoric periods such as roads and field boundaries. For this reason, a topographic map is ideal for the study of earlier times and the lay of the land which, although having been changed by quarrying and modern development still retains its lowlands and uplands and these are significant to the sighting of prehistoric monuments such as passage tombs, stone circles and henges. Rivers, mountains, and the ocean are also important landscape features that can be studied in relation to any prehistoric features that are recorded in the data from geophysical survey, aerial imagery, and LiDAR.

The map was created in QGIS using raster images and digital elevation models to create shadows in the lowland valleys and light in the upland areas. This was followed by assigning colours to the different heights of elevation within the landscape. In this case the highest points are marked in red and the lowest points are marked in green (see Figure 63).



*Figure 63: Topographic LiDAR imagery of Western Britain.*

## Aerial Photography

The use of aerial photography in archaeology is a widely used method and essential to the study of the ancient landscape. Recent findings of crop marks recorded in satellite and drone data on hot summer months have aided in the discovery of a multitude of new sites, with recent notable examples being the discovery of a new prehistoric monuments dubbed Dronehenge in County Meath (Davis & Rassman. 2021. Pp 1).

For all of the aerial survey work conducted during this study, a DJI Mavic Pro Platinum was used. The drone was first released to the public in 2017 and features an inbuilt camera complete with 26mm lens (or 35mm lens equivalent) and 1/2.3" CMOS sensor, with an effective pixel (megapixel or MP in this instance) range of 12.35 MP (out of a total 12.71MP). The drone has a total flight time of 27 minutes and is set as standard to take photos in both lossless .TIFF format (in this instance it is saved as DJI's proprietary. DNG format) and a standard .JPG format.

## Standard Photography

For standard photography and record keeping a Nikon D7200 was used. The D7200 (see Figure 59) was released in 2015 and used a 23.5 x 15.6mm CMOS sensor, with an effective pixel range of 24.2MP (out of a total 24.72MP). The photos were saved as a large format (6000 x

4000 pixels) with a combined .RAW and .JPG saving feature. This allows for archival standard record keeping as well as allow for smaller file sizes for photogrammetric modelling ([www.nikon.co.uk](http://www.nikon.co.uk))

Two types of lenses were used for recording. For site work a Nikon AF-S DX NIKKOR 18-300mm F/3.5-5.6 EG VR Wide Angle and Telephoto lens was used. The lens has a directional view of 76 to 5.3 degrees with a closest focus of 0.45m (*ibid*). For recording of all finds a Nikon AF Micro NIKKOR 60mm 1:2.8 D lens was used. The lens has a minimum focus depth of 0.219mm which is suitable for recording even the smallest of finds. The lack of compatibility with the D7200 (as the lens was released in 1987) has meant that all images have had to be adjusted manually (this is not difficult with the digital viewfinder on the back of the DSLR).

## LiDAR

LiDAR is an acronym for light detection and ranging (also known as Airborne Laser Scanning) and is a method that uses lasers repeatedly fired down from an aircraft to determine the distance between to the ground. These points of data are saved as co-ordinates and a 3D photogrammetric model is created from the dense cloud of points that is created from the survey data. The technique is often utilised in environmental studies, particularly in regard to flood defences in the United Kingdom but has become a popular form of archaeological prospection in the years since the data has become free and readily available from the government (Challis et al. 2008. Pp 1055).

The benefit of this technique to landscape archaeologists is that the data records the undulations of the earth in minute detail and takes away foliage and vegetation to reveal the true lay of the land. This allows for faint earthworks too be seen such as ploughed out burial mounds and earlier field boundaries. LiDAR is a popular form of archaeological prospection, and all of the available LiDAR for the Isle of Anglesey was processed in 1m resolution at its highest possible quality. Unfortunately, not all of the island has been surveyed as some sites are shown having no LiDAR carried out over them and in these cases aerial and satellite images alongside walkover surveys will be relied on as the first stage of searching for buried remains, but this method has been utilised at any point that it is available (Challis et al. 2008. Pp 1055).

The data is downloaded as Ascii files from the [Lle.gov.wales](http://Lle.gov.wales) website where it is open source and free to all and this data is then uploaded into QGIS geographic information software where is processed. The angle and azimuth of the light can be manipulated prior to processing to cast



shadows across the earthworks to make them better visible from the height elevation data but this process is better done in Blender software as the light can be manipulated in real time.

## Geophysical Survey

Geophysical survey is often used to locate buried archaeological features that are no longer visible above ground and to image extant earthworks in relation these features. There are several different methods of geophysical survey and the two that are used in this study are Magnetometry and Resistivity. These methods are the primary source of data used alongside the results from the aerial, satellite, and LiDAR data to establish what unseen archaeology lies beneath the earth. This method was used across the landscape survey areas surrounding the standing monument at Bryn Celli Ddu, Ty Newydd and the two monuments close to the village of Llanfechell. Geophysical survey was not carried out ahead of the excavation on the Foel on account of the extant archaeology standing atop a raised outcrop and that the area of focus for the excavation was obvious from what surviving archaeology lay above ground.

## Magnetometry



*Figure 64: Example of magnetometer being used in the field; Bryn Celli Ddu (Llanddaniel Fab).*

Magnetometry (See Figure 64) is a popular method of archaeological prospection owing to its ability to survey large areas of land relatively quickly. Resistivity surveys are a slower process and for this reason the magnetometry surveys were conducted at each site first, followed by the resistivity surveys which covered a smaller area over the anomalies discovered from the magnetometry results.

A Bartington fluxgate 602 dual probe gradiometer was used to carry out the surveys. This instrument consists of 2 high stability fluxgate Grad-01-1000 sensors fixed with a 1 metre separation and attached to a DL601 data logger which records the readings from the probes and also houses the battery and control panel. The range of the probes was set to 100 nano-Teslas and the instrument was calibrated at the same zero point and was re-calibrated after every third grid to ensure an accurate measurement across the entire survey (Birtles, 2013. Pp 40). The process requires the setting out of 30 x 30 metre grids, using measuring tape reels, with the corners being marked with a cane. The grid is then walked back and forth at 1 metre intervals. The probes are pointed downward toward the ground with a reading being taken automatically every 1 metre. The individual squares of the grid are always walked east to west then west to east in a zig zagging path and each grid square survey always commences from the same corner. The cross bar of the gradiometer is hooked onto a rucksack, enabling some of the weight of the machine to be supported by the shoulders and back of the operator. The machine is then held out from the body with the probes pointing directly down, with the operator ensuring that the probes are kept at the same height from the ground surface where possible.

Magnetometry uses electro-magnetic fields to locate below-ground archaeological remains in a non-invasive manner (Clark. 1996. Pp 64). A gradiometer survey is a widely used method of non-invasive archaeological prospection within the field and is effective at detecting areas of burnt material, pits and ditches. It does this by detecting iron content within the ground and 6% of the earth's crust is made up of iron which is dispersed throughout the rock, clay and minerals as chemical compounds. Human activity can redistribute these iron particles which can cause anomalies within the magnetic field of the earth surface which are detectable using magnetometers. Magnetometry is particularly good at showing any signs of burning within the survey area and any ditches or banks which are no longer visible above ground (Clark 1996. Pp 64).

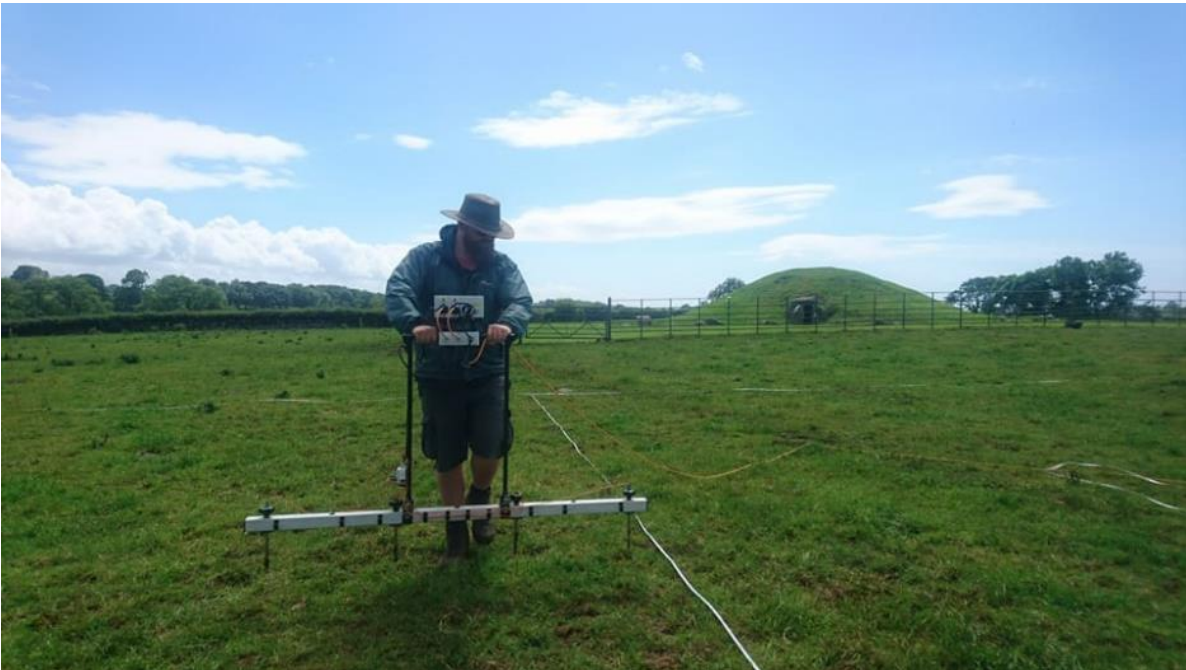
The magnetometer consists of two sensors connected to a data logger and battery unit. The sensors of the magnetometer contain 2 parallel strips of a nickel iron alloy. This special alloy has a very high magnetic susceptibility and a low remnant magnetism (Lowrie, 1997). The alloy is annealed at an extremely high temperature which removes any lattice defects to minimise magnetostrictive energy. After the heat treatment the magnetic coercivity of the alloy is very low which means that the magnetisation of the alloy can be affected by a very low magnetic field (Lowrie, 1997). The alloy is now so susceptible to magnetic forces that the earth's magnetic field can magnetise the special alloy strip. It is the sensitive nature of this alloy that requires the operator of the machine to have no ferrous metals on their person during the survey (Lowrie, 1997).

During operation of the magnetometer, primary energizing coils wind the parallel alloy strips in opposite directions which causes the coils to become magnetised (Lowrie, 1997). A secondary coil that is wound around the primary coil detects changes within the magnetic flux of the core. The magnetic flux within each strip changes with the rise and fall of the primary current and this fluctuation induces a voltage in the secondary coil. If there is no external magnetic influence on the sensors the signals are equal and opposite due to the changing flux and no output signal is recorded when the axis of the sensors aligns with the magnetic poles (Lowrie, 1997). When the axis is aligned one strip of alloy adds the magnetism from the Earth's magnetic field while the other strip subtracts the force from the Earth's magnetic field, this means that the phases within the two strips are different as one will saturate before the other and the flux changes in the two alloy strips are no longer equal and opposite. This produces an output voltage in the secondary coil which is proportional to the strength of the Earth's magnetic field (Lowrie, 1997. Pp 268).

The Bartington 601 dual probe gradiometer is a vector magnetometer, this type of magnetometer was developed during World War 2 as a submarine detector. A vector magnetometer measures the strength of the magnetic field in a particular direction which is along the axis of the sensor. Prior to operation the magnetometer must be calibrated to the cardinal directions (North, South, East and West) and the direction of the traverses carried out during the survey must be noted (Lowrie, 1997. Pp 269).

The flux-gate gradiometer outputs a voltage which must be calibrated to the magnetic field and the instruments provides a continuous record of field strength and has a sensitivity of around 1 nT (nano-Tesla's) and will record most magnetic anomalies of archaeological interest. For this reason, the flux gate gradiometer is a popular method of archaeological prospection and is often used to identify anomalies ahead of excavation.

## Resistivity



*Figure 65: Resistivity survey being carried out over Bryn Celli Ddu survey area.*

The resistivity method of geophysical survey uses an electrical current and probes measuring electrical resistivity, to pick up differences in the properties of the soil (Clark, 1996. Pp 70). Two external electrodes are placed in the ground outside of the survey area which introduces a current into the ground. A hand operated rig holding two mobile probes are placed into the earth and a measurement of the electrical resistance between the external electrodes and the mobile probes is taken (see Figure 65 for an example of the machine used).

Wet soil conducts electrical current with low resistance and buried stones, walls and banks have a high electrical resistance. For this reason, the technique is good at picking up ditches, pits, banks and subterranean stone features. The humidity and mineral composition of the earth can affect the electrical conductivity and therefore the results (Clark, 1996).

A Geoscan RM-15 resistivity meter was used during these surveys and measurements were taken every meter using the same grids as were used during the magnetometry survey. The process of resistivity is much more time consuming, with it taking between 30 and 40 minutes per grid whereas the average time to complete a single grid using magnetometry is roughly 10 minutes. Due to the time-consuming nature of resistivity survey a smaller area was surveyed, focusing on the most interesting anomalies discovered in the magnetometry survey data to enable the surveys to be completed in the required time.

The raw data from both the magnetometry and resistivity was downloaded onto Geo-plot software which processes the results from each reading into a visual image. Minimal processing was done, with the mean traverses being zeroed and the shades inverted as it is easier to visualise negative features such as ditches and pits in a darker shade (see results section).

Once the data had been processed the image was uploaded onto Photoshop, but no further modifications were done apart from the overlay of both images and the opacity altered to enable the images to be merged. The opacity tool enabled the survey to be made partially transparent, allowing features from both the magnetometry and the resistivity to be compared as part of the same image.

Both techniques of geophysical survey used together allow us to see two different images acquired through electromagnetic fields and electrical resistivity of the same area. It is worth noting that further surveys using multispectral photogrammetry and ground penetrating radar would also be beneficial in understanding the nature and depth of the archaeology.

### Archaeological Excavation

The site at the Foel was excavated using time honoured scientific archaeological techniques which begins with the measuring out of the desired area to excavate; in this case a 4 metre by 4 metre square area, and then the turf was removed with spade and shovel. The earth was then removed in spits using trowels and the large stones that stood in the destruction layer were removed with crow bars and strap. The trowel technique allows for the close analysis of the layers and subtle colour changes in the soil to be found. These colour changes are identified as features and these are fully recorded photographically and drawn using tapes, grids and graph paper to ensure that the archaeology has been fully analysed prior to the further excavation of the feature.

Drone and 3D photogrammetry was also used as additional forms of recording to ensure that no data was lost during the process of excavation. The excavation process is destructive in nature and it is of the upmost importance that every layer is fully recorded to a high scientific standard ahead of the removal of these archaeological layers of strata.

The Harris matrix method of recording is also utilised in this study and is a global industry standard of recording excavated archaeological features. This technique establishes the stratigraphic sequence of layers following the recording of each of the features that have been



excavated and this allows for the chronological series of events that lead to the features ending up in the ground.

### Recording Artefacts

All small and medium finds recorded were placed into white-grip seal labelled office bags. In the case of excavation at the Bedd y Foel site, the code BYF was used, along with the date, object number and description of object. A Grid Reference number was also assigned as well as an approximate location within the trench (i.e., the corner/area it was discovered within the trench).

Tapes and measures were used to record objects on site, along with a handheld GPS; a Garmin Etrex 10, was recorded as being accurate to within 2 metres, however this may change with weather and cloud coverage.

For objects recorded 150mm digital callipers were used, along with a standard 30-CM ruler. Objects were weighed with a 2KG 0.01g digital scale.

For one instance of work, it was decided that specialist camera equipment would be needed. To this end a Depstech HD Wi-Fi Inspection Camera (or Endoscope) was used. The camera has a 5MP CMOS sensor with a fixed focal distance of 7-40cm and 5m of cable. Imagery for the camera was transferred wireless to a handheld smartphone (in this instance a Sony Xperia L3) via a DEPSTECH app. The app would feedback imagery to the phone, with photos and videos saved into the devices' built-in storage ([www.depstech.com](http://www.depstech.com))

In the instance of measuring and photographing finds, a Kaiser RS-1 copy stand was used. The camera was fitted to the stand atop a light panel with twin LED lights to illuminate the object. A scale (ruler) would also be added prior to photography set near one side of the object.

### 3D Photogrammetry

The method of creating digital 3D models from photographs is known as 3D photogrammetry and this technique has been utilised in this study to 3D model rock art panels such as the Escob stone and Stone of Cunogussus and sites such as the Llanfechell Triangle and the excavated trench at Bedd Y Foel.



The benefit of this technique in the study of rock art is that once the 3D photogrammetric model has been created a mesh is built which produces a high-quality surface model that can detect weathered pieces of rock art that are no longer visible to the human eye and because of this have been unrecorded. The benefit of applying this method to sites is twofold, the first being that the site can be studied from all angles without the requirement of the drone and the mesh will also reveal any undiscovered rock art. The second benefit is in presenting the findings to the public, many of these sites are on private land and difficult to access for anyone with mobility issues; in particular the Llanfechell Triangle on account of large dry-stone walls that must be climbed over to access the stones. The 3D model allows for a miniature version of the site to be presented to the public which adds a tactile element which cannot be obtained by merely viewing the model on a computer screen.

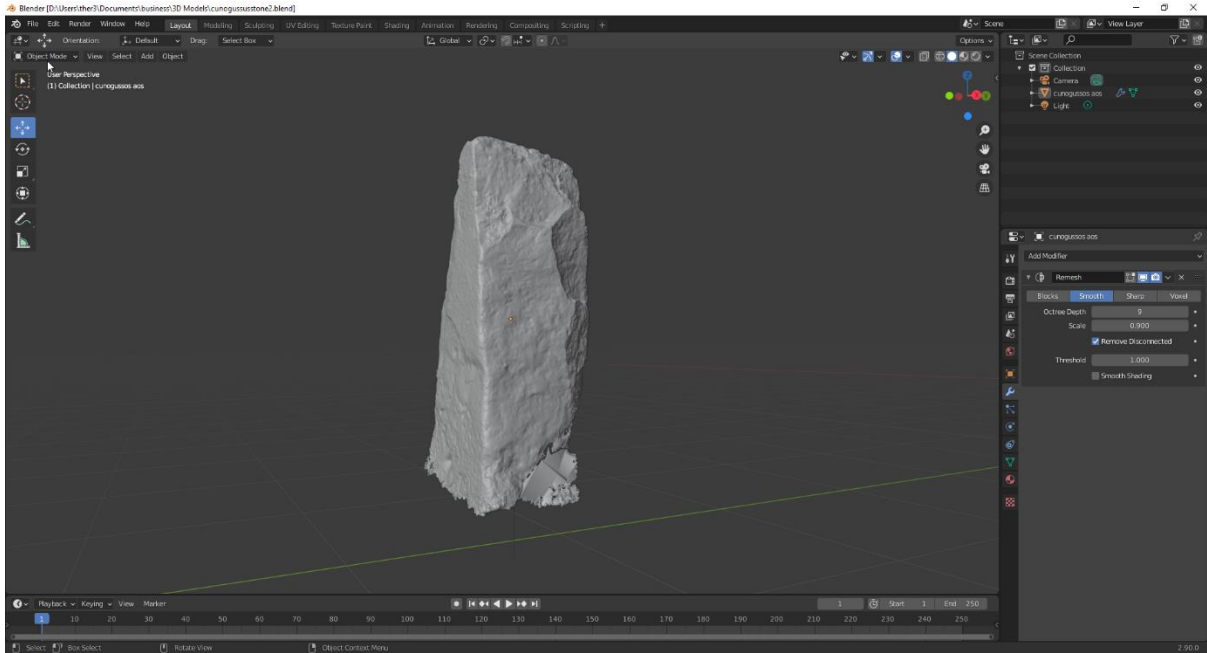
The physical process creating a 3D model using 3D photogrammetry is surprisingly easy. The first stage is to photograph the subject to be modelled from all angles. It is best to imagine a sphere around the subject and the camera should be angled from every azimuth, taking pictures of every side of the subject that is needed to be recorded in the model. It is important to choose an overcast day if the subject is outside as bright light and harsh shadow can confuse the software and cause the model to be distorted or not work at all in some cases. These photographs are then loaded onto Agisoft 3D photogrammetry software and the align photos process is set to run. Once this is completed a sparse cloud of points has been created by the software of the subject in 3D. The next stage is to create a dense cloud which forms an almost complete 3D model made of points detected by the software. The final stage in this process is to create the mesh which connects the dots of the dense point cloud to create the model. The mesh of the model is then exported into MeshLab software for further processing. The processes applied to the 3D model are known as ocular occlusion shading and Lambertian Radiance Scaling these processes set shadows into the recesses of the mesh and define any details that may reveal previously unseen rock art.

### 3D Printing

As part of the process, a series of 3D prints were made of some of the features identified and discussed in this thesis.

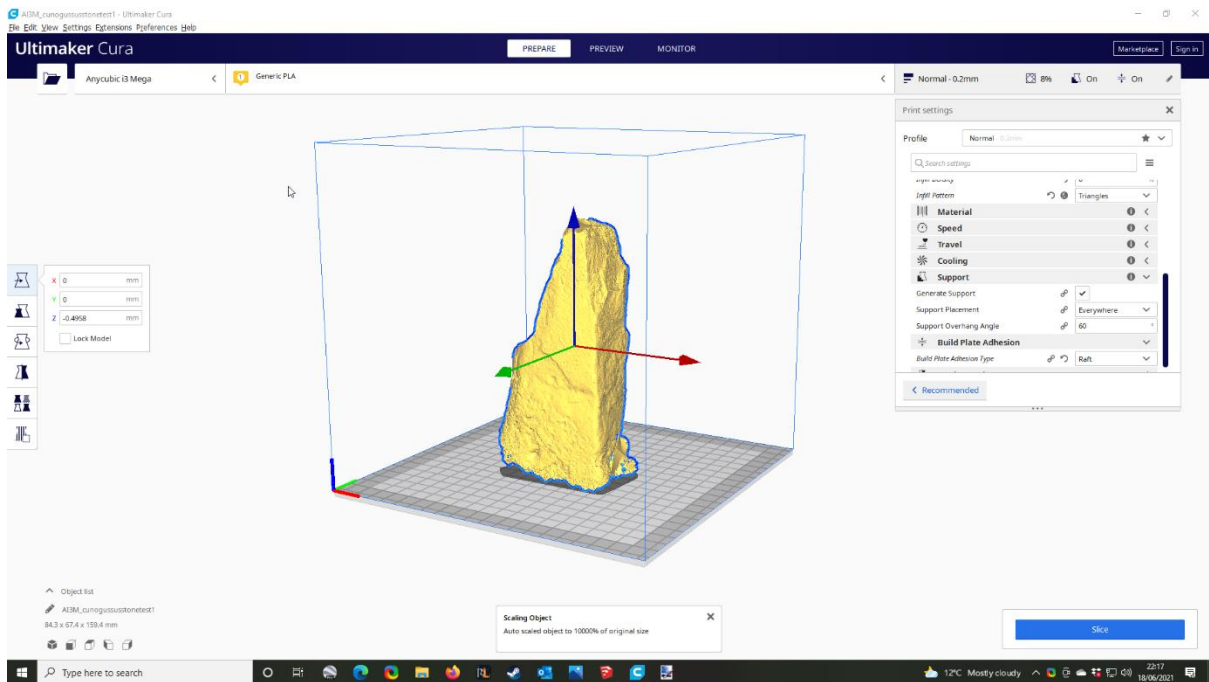
3D photogrammetric models were first modified in Blender, an opensource 3D creation suite which allows for modelling, rigging, animation, simulation, and rendering ([www.blender.org](http://www.blender.org)).

This software was used to clean up some of the 3D models produced using photogrammetry by repairing meshes and removing unnecessary and cluttered features prior to printing (see Figure 66). This would allow for a streamlined print, as any additions to the model may significantly increase the time taken to print a model. As the software accepted .OBJ files this allowed for easier access to modify the files as required.



*Figure 66: Screenshot of Blender 3D creation suite software, with example of one of the photogrammetric models produced during this thesis.*

For preparing the 3D models for printing two pieces of software were used – Ultimaker Cura (ver. 4.8.0 – see Figure 66) and Creality 3D. Both are 3D printing software’s with two versions and are currently free to use. The software’s can be used to scale models to print size, modify properties (i.e. thickened shell, infill density and pattern, generating supports etc.) which are necessary for the models to be produced. The length of time it takes to print depended on the size of the model used as well as the amount of resin/filament used.



*Figure 67: Screenshot of Ultimaker Cura in use, with example of photogrammetric model produced during this thesis, then being prepped for printing.*

The finished models were printed using both filament and resin printers, which produced models with considerable detail allowing for further study. For larger models an external provider was contacted.

For the filament printer an AnyCubic i3 Mega was used ([www.anycubic.com](http://www.anycubic.com) – see Figure 67, right hand side). The model of printer used was first released in 2018 as a budget printer. The filament used for the finished prints was a black 1.75mm PLA 3D filament and can print at 100mm/s. Most of the sites photogrammetrically modelled were printed out using this particular printer. For the printing process the filament is fed automatically into a heated printing head (which heats up to 220°C) and is printed along 3-Axis (Z, X and Y) – The Y axis is controlled by a motorised base, whereas the Z and X axis are controlled by motorised belt and threaded bar systems in the printer head itself. The benefits of this system were the cheaper cost of printing material used, as well as the ability to greatly scale up models. However, the printing left banding on the exterior face which on occasion masked certain features, such as the faint text and peck marks on certain modelled objects.

For the resin printer, a Creality LD-002R resin printer was used ([www.creality.com](http://www.creality.com) – see Figure 66, left hand side). This printer used a grey coloured ABS-like photopolymer resin which cures under UV light and takes about 48 hours to fully cure. As the model is uploaded, the printer is

filled with the solution in a bath with a transparent glass base. Beneath this base are five Ultraviolet (UV) Light Emitting Diode (LED) lights which are programmed to shine at certain frequencies and times during the model creation process. This method allows for the printing process to take place. As the head lifts the lights partially cure the model, allowing for a motor to raise the printing surface upwards to complete the model. The benefits of a resin printer allow for finer detailed models compared to the filament printer which proved useful in capturing some elements such as the Latin inscription on the Cunogussus stone. The size of the models was limited however due to the method used, and the chemicals used could prove harmful if swallowed or breathed in within a confined space.

# Chapter 6:

## Results of Geophysical and Non-Invasive Surveys

### Introduction

This chapter details the results of the non-invasive techniques utilised to investigate the various case-study monuments and their environs. Depending on the site under discussion, this will include LiDAR data analysis, original geophysical survey and the 3D recording of rock art features using photogrammetry. The results of invasive excavation at the Foel is reserved for the following chapter; and a detailed discussion of the various discoveries presented later in the thesis.

### Bryn Celli Ddu

One of the aims of this study was to intensively investigate the landscape surrounding the monument of Bryn Celli Ddu, using a number of methods to ascertain the extent of prehistoric activity. The purpose was understanding the context of the Late Neolithic and Early Bronze Age ritual monuments already identified through antiquarian study, and more recent archaeological excavation.

The first task was a walkover of the site and its surroundings to take in the lay of the land and identify the positioning of the extant prehistoric features in relation to one another, such as the outcrop and standing stone in the field to the west of Bryn Celli Ddu, the outcrop with cup marks to the southwest of the tomb and the standing stone and clearance cairns in the uplands approximately 451m west of the tomb (for area covered see Figure 68). As these monuments were being recorded, the condition of the fields was assessed ahead of the surveys. Luckily, apart from a few areas of slight waterlogging in the lowlands, the fields were in excellent condition and due to the grazing of the dairy cows, the grass was low revealing slight mounds and undulations which were noted and in preparation for comparing against the survey data.

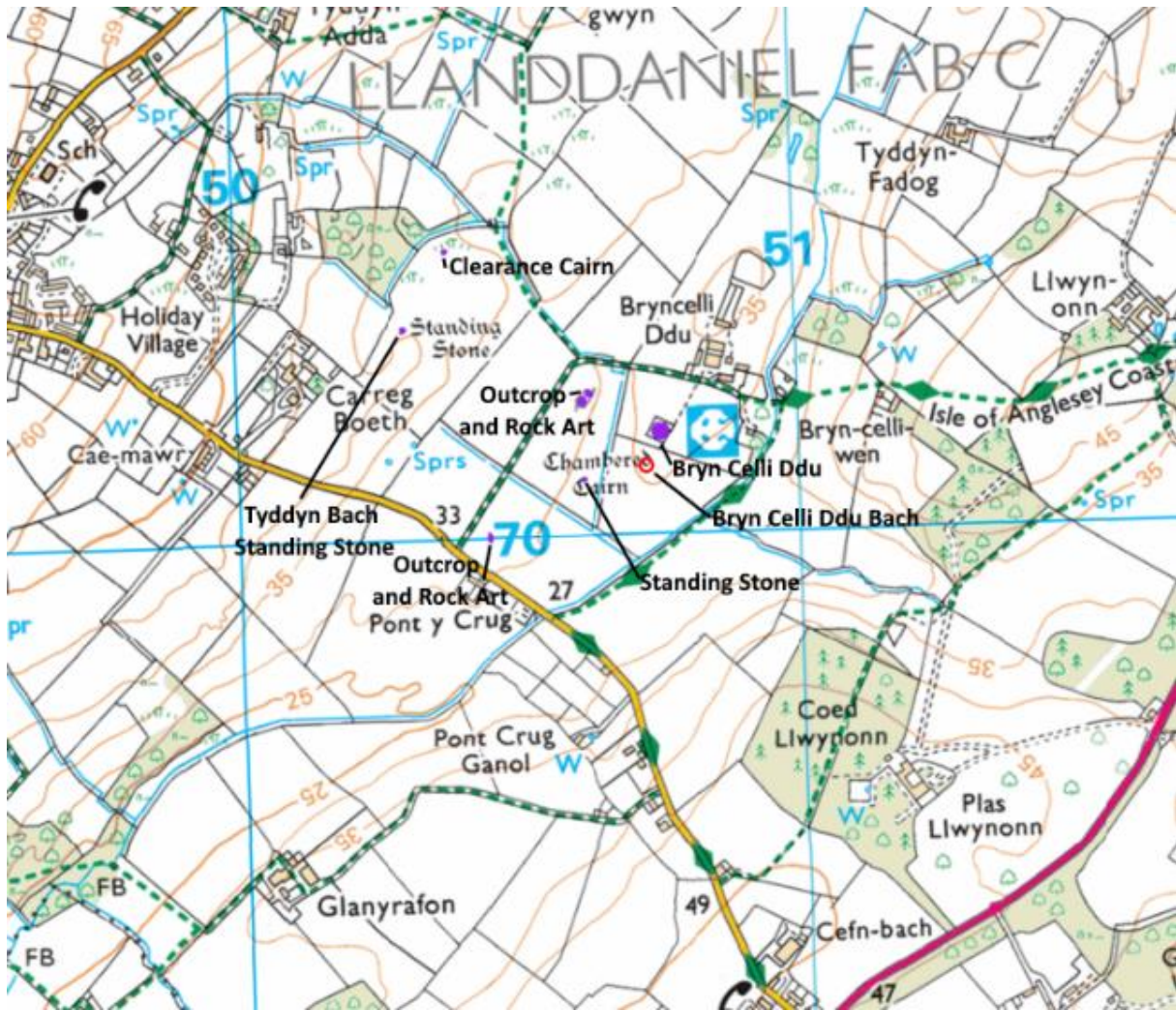


Figure 68: OS map showing extant features in landscape, annotated - 1:25000 scale (edited). Ordnance Survey data.

## LiDAR Analysis

Bryn Celli Ddu and its surroundings are now part of a large dairy farm, with all the fields investigated as part of this study being on well drained pastureland. After the walkover was complete, aerial photographs and LiDAR data was downloaded of the study area, with this data later studied and analysed for cropmarks in the satellite imagery. This was undertaken to identify any potential anomalies and extant features recorded through this technique.

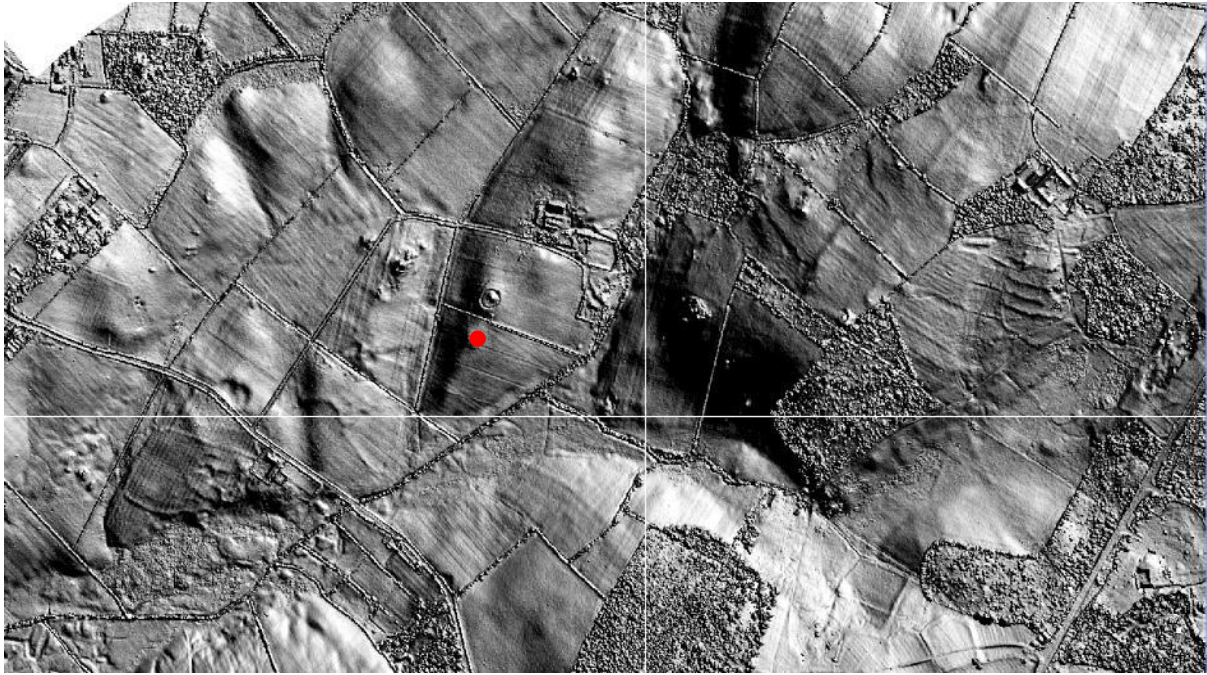




*Figure 69: LIDAR image of Bryn Celli Ddu and surrounding landscape. Bryn Celli Ddu marked as red dot on image (centre right).*

The processed LiDAR images reveal a number of anomalies not visible on the ground surface. The majority of these identified anomalies mainly consisted of linear features (i.e., lines) running across the landscape and, on occasion, interacting with each other. Patterns such as these are usually indicative of previous field boundaries, with said boundaries criss-crossing through the landscape, pointing to earlier phases of agricultural land use at Bryn Celli Ddu. The linear anomalies are orientated to the south-east and north-west, much like the current field boundaries, although these earlier partitions are smaller with the lines following irregular paths rather than the precise modern boundaries which run in straight lines.

The reason for the orientation of these field boundaries is likely to follow the upland ridges which run south-east/north-west across almost the entirety of the island. This was likely to make full use of the available landscape between the larger outcrops with the clearest linear anomalies being seen in the well-drained upland areas and the clearest cluster of anomalies being found in the field to the west of the school in the bottom left field (see Figure 69).

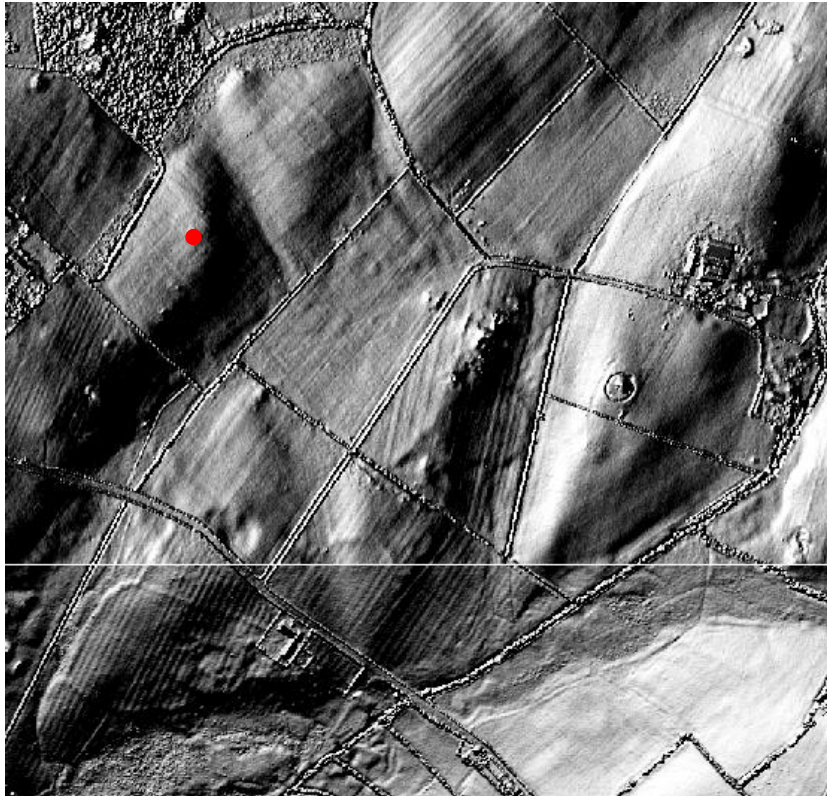


*Figure 70: LIDAR image of Bryn Celli Ddu and surrounding landscape. Bryn Celli Ddu Bach marked with red dot (centre).*

Bryn Celli Ddu Bach is clearly visible as an extant mound directly to the south-west of the reconstructed tomb (see Figure 70). Alongside this can be seen the evidence of both ridge and furrow plough marks and modern drainage. Alongside these are faint linears seen crossing the ridge from east to west. This disturbance, alongside the destruction of the upstanding monument in antiquity, have not completely destroyed the overall form of the burial mound.

Circular and sub circular anomalies are often found to be prehistoric and a number of these can be found in the LiDAR data. Of these, Bryn Celli Ddu Bach is the clearest anomaly identified. Interestingly a number of these anomalies seem to be associated with the linear field boundaries from the earlier phases of agriculture and are probably structures associated with farming and settlement. Round structures can be found across the British Isles from the Late Bronze Age to the Romano-British period but the roundhouse building inhabitants of Anglesey continued the tradition far into the Early Medieval period, evidenced at sites such as Pant y Saer near Benllech (Philips 1934) and a possible site at Cefn Cwmwd, Rhostrehwfa (Roberts, Cuttler & Hughes 2012; 30-65).





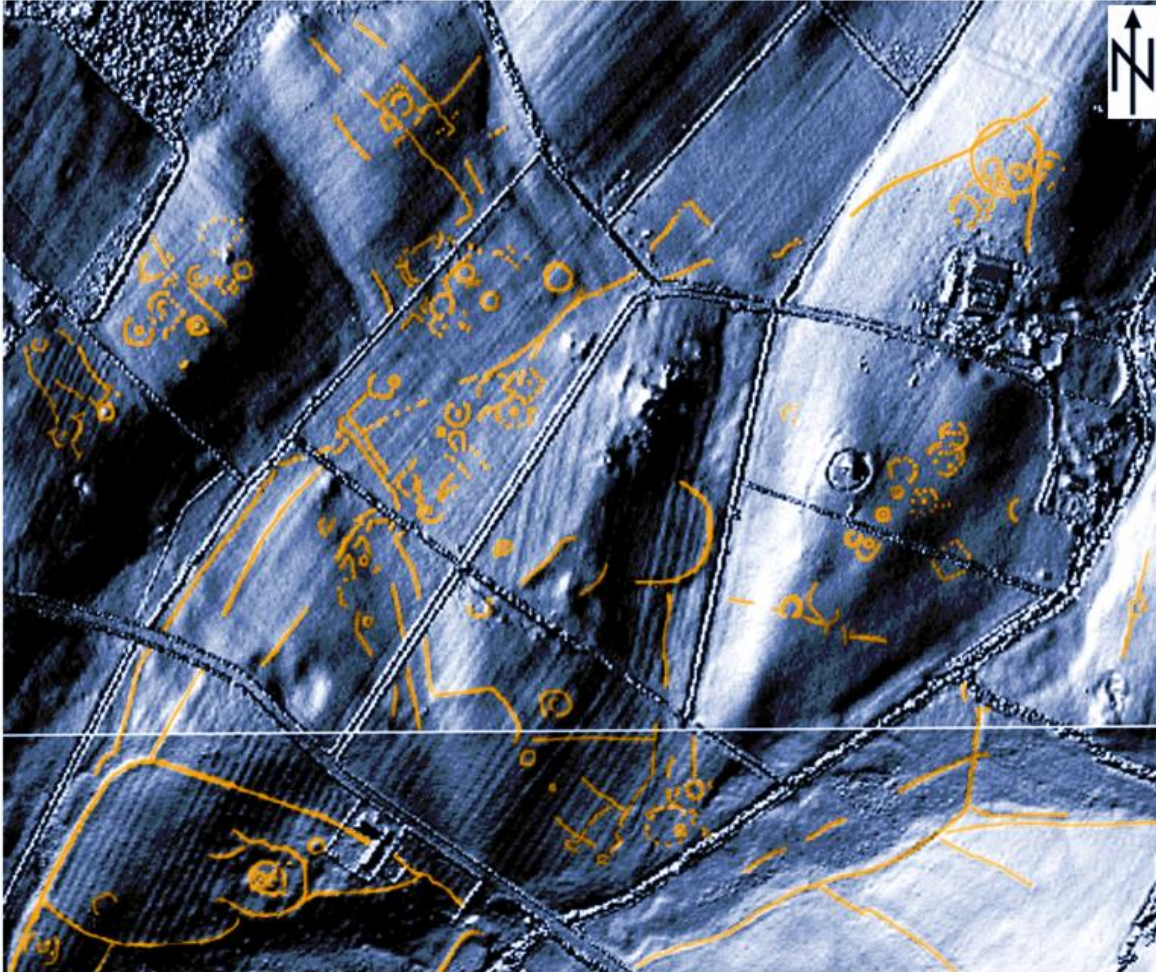
*Figure 71: LiDAR image of Bryn Celli Ddu landscape. Tyddyn Bach marked with red dot (top left).*

A circular ditch anomaly can be seen incorporated into the monolith known as Tyddyn Bach on the upland to the west of the survey (see Figure 71). This anomaly is of particular interest due to its circularity and proximity to the standing stone and will be an area of focus for the geophysical surveys. Another large circular anomaly can be seen directly to the north of the farm buildings and occupies the same ridge as both Bryn Celli Ddu and Bryn Celli Ddu Bach.

The LiDAR was uploaded into Photoshop and the main features have been highlighted in yellow (see Figure 72). A number of these features culminate around the school across the road from the Bryn Celli Ddu landscape. It is probable that these are associated with the excavated Late Iron Age roundhouses recorded near the school (Edmunds and Thomas, 1990. Pp 26 & 27) and the linear features that snake through the fields to the north-east are previous field boundaries from early phases of farming and settlement in the area and it is likely that these are Iron Age coaxial field systems.

A number of circular features can be seen to the east of the tomb at Bryn Celli Ddu - of varying size but similar shape. It is likely that these are satellite burials from later periods in the Bronze Age. A Bronze Age burial was discovered when the path to the monument was built and with the mound at Bryn Celli Ddu Bach to the southwest it is probable that the landscape

surrounding these monuments is home to further burials. The presence of circular and sub-circular anomalies in the magnetometry and resistivity data would be evidence for the farm at Bryn Celli Ddu being a prehistoric graveyard that has been used for the rites of burial for thousands of years in prehistory.



*Figure 72: Interpretation of features identified from LiDAR data - Bryn Celli Ddu survey area; Llanddaniel Fab.*

## Geophysical Survey

The geological formations on the sites studied as part of this PhD are different in every case (see Chapter 1). This must be taken into account when studying the data acquired from the magnetometry surveys as the mineral composition of the bedrock can have an effect on the results. The maps of the geology was sourced from the Geological survey of England and Wales carried out in 1974 and was downloaded from Digimap.



Bryn Celli Ddu and its environs are located upon a strip of geology known as the Central Anglesey Shear Zone and Berw Shear Zone and consists of schist and Hornblende geology which is represented in brown on the geological map (see Figure 73). This is surrounded by Mica schist represented in green with a small area of Quartz rich geology marked in yellow. It is this quartz rich geology that can be seen in the outcrop close to the extant monument and is the geology which makes up the majority of the material that was used in the construction of Bryn Celli Ddu.

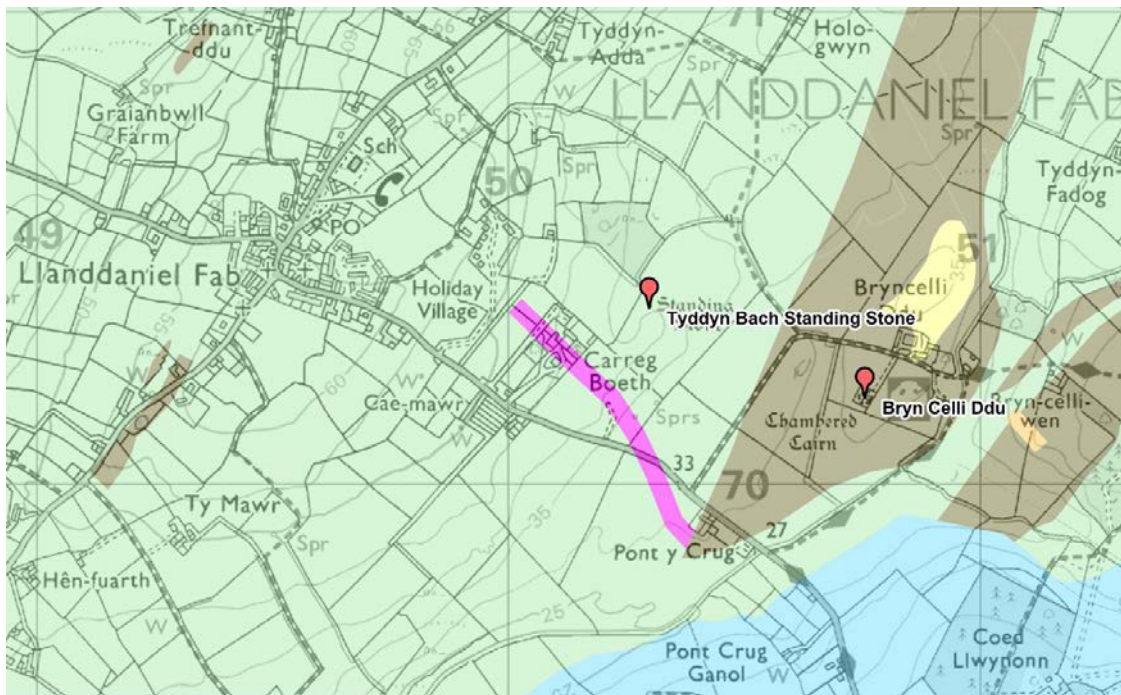


Figure 73: Geological map of Bryn Celli Ddu study area.

The magnetometry and resistivity surveys were carried out over four years from 2016 to 2020 and the first survey focused on the ridge on which Bryn Celli Ddu and Bryn Celli Ddu Bach stand. This survey was carried out ahead of the excavation of Bryn Celli Ddu Bach, as such only the targeted area of ridge was focused upon with four grids. The fields were numbered in the order in which they were surveyed to better illustrate the fields that were covered in sequence and the location of any anomalies to the reader of this thesis (see Figure 74).



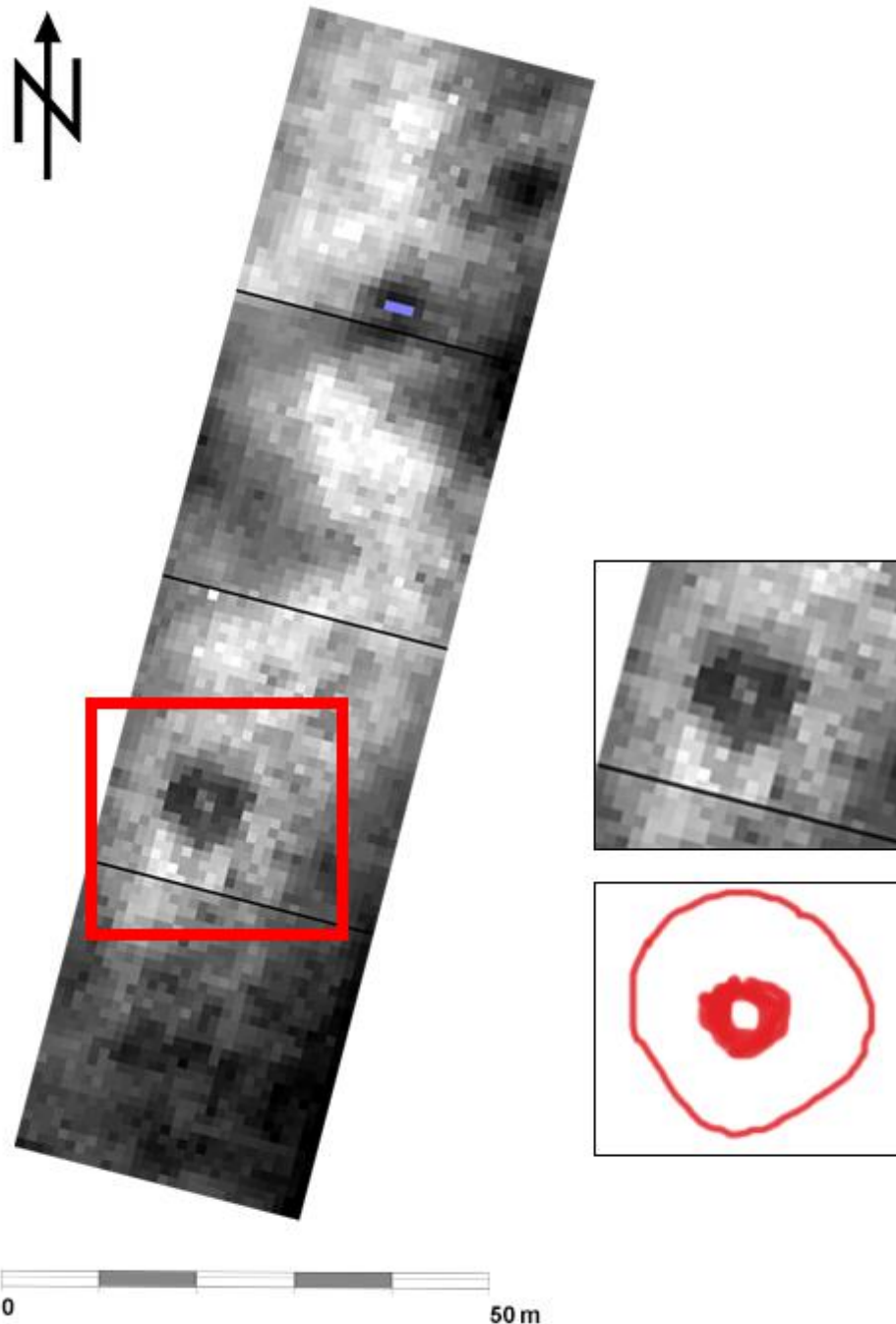
*Figure 74: Satellite image of areas surveyed – Bryn Celli Ddu; Llanddaniel Fab.*

### *Field 1*

Four 30x30 grids of resistivity and three 30x30 grids of magnetometry were carried out across the ridge in the Bryn Celli Ddu Bach field, which focused on the part of the ridge tapering off to the southwest.

The underlying geology of the ridge is clearly seen with the white and lighter grey readings with the black and darker grey data points being negative features and areas which retain moisture. The blue rectangle is two dummy logs which indicate the cattle water trough which was there and the low resistance reading around the trough is presumably the area trampled by the cows as they congregate around the trough to drink.





*Figure 75: Geophysical Survey results for Field 1 resistivity survey; Bryn Celli Ddu (Llanddaniel Fab). Anomalies highlighted in bottom right corner.*

The results of the resistivity survey clearly show a circular anomaly to the south of the ridge as it drops down into the lowland area in the field to the south (See Figure 75). This anomaly is two concentric sub circular shapes with a faint low resistance reading encircling a raised area with a clearly defined sub circular low resistance reading within this anomaly, at its centre is a

small area of higher resistance readings. The anomaly measures about 17.9 meters overall due to its sub-circular outline with inner circle having a diameter of 10.8 metres. The higher resistance readings in the centre of the anomaly can be no more than 3 metres. A dark spot can be seen to the north of the survey which surrounds the blue dummy reading that had to be taken in that area as the cattle water trough was located here. It is probable that the dark spot around the trough is land trampled by the dairy cows as they visited the trough to drink. This anomaly measures 7.1 metres across.

The magnetometry data overlays the 3 northern grids of the resistivity survey has revealed three interesting anomalies, the clearest of which is a circular anomaly with a central anomaly along with linear and sub-rectangular anomalies to the south of the survey

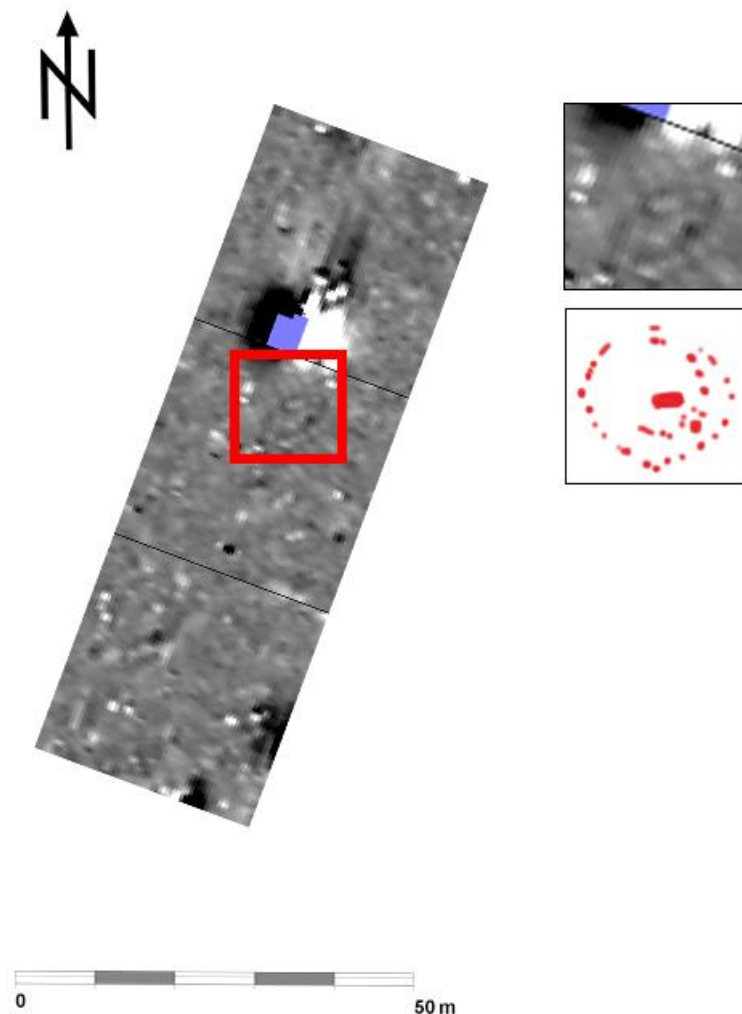


Figure 76: Geophysical Survey results for Field 1 magnetometer survey; Bryn Celli Ddu (Llanddaniel Fab). Anomalies highlighted in top right corner.

The outer circle (see Figure 76) is defined by a number of small anomalies that make up the overall sub-circular shape. The northern part of the anomaly is obscured by the electromagnetic halo that surrounds the metal cattle water trough that is in the area of the blue dummy readings. The overall diameter of the circle is measured at 9.5 metres with the central anomaly being approximately 3.1 metres in length.

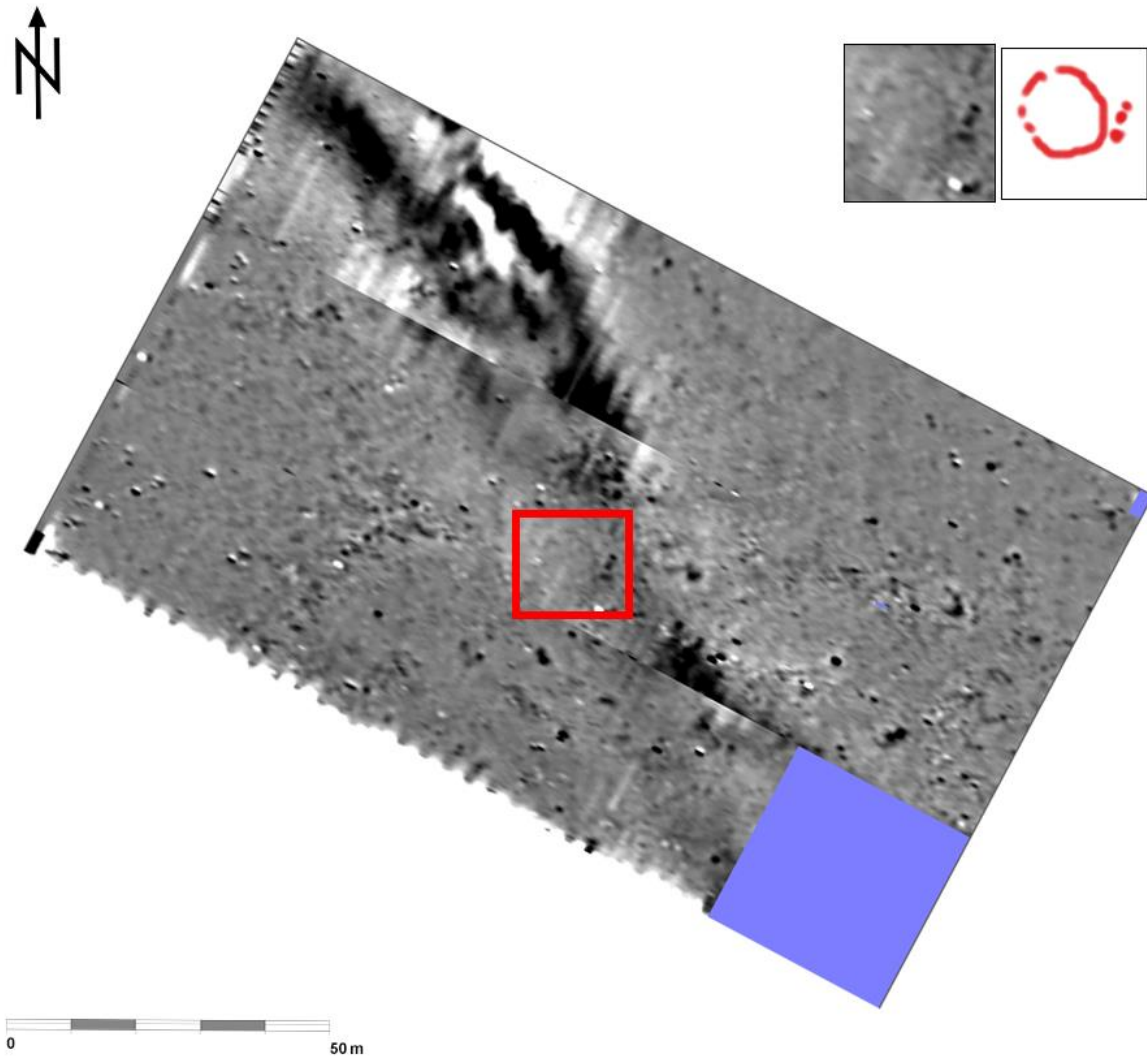
A number of other anomalies can be seen dotted throughout the field (measuring between 1.4 and 1.6 metres) and it is possible that these are pit features as were found to the south of the ridge during test pitting. The pits were dated through pottery finds to the Early Neolithic. Of course, any interpretation of the data are purely speculative until the anomaly is excavated and positively identified.

### *Field 2*

The 2<sup>nd</sup> field to be surveyed can be found to the west of Bryn Celli Ddu and much of the area to the north of the field is taken up by the large outcrop with the cup marks pecked into the top, the first of two monoliths can be found in the south-west corner of the field. The outcrop was avoided during the survey due to the diamagnetic properties of quartz, large veins of which run through the outcrop and underlying bedrock geology. Although these diamagnetic effects are weak, they will still be detected due to the highly sensitive nature of the magnetometer, and this is clear from the results of the survey.

The distorted anomaly which runs from the northern corner of the survey down to the southernmost extent of the survey aligns with the extant outcrop and is clearly its continuation beneath the topsoil to the south.

Out of the fourteen 30 x 30 metres grids surveyed, the most prominent archaeological anomaly is a sub-circular shape visible close to the centre of the survey area (see Figure 77). This circle is located on the upland of a low-lying ridge and is 45 metres due west of the standing stone and can be seen as a prominent sub-circular feature in the LiDAR data. Measurements suggests that it is at least 11.5m in diameter. A number of linear and recti-linear anomalies can be seen across the survey a large partial circle can also be seen in between the standing stone and the central sub-circular anomaly and a circle of individual readings can be seen incorporated into the monolith.

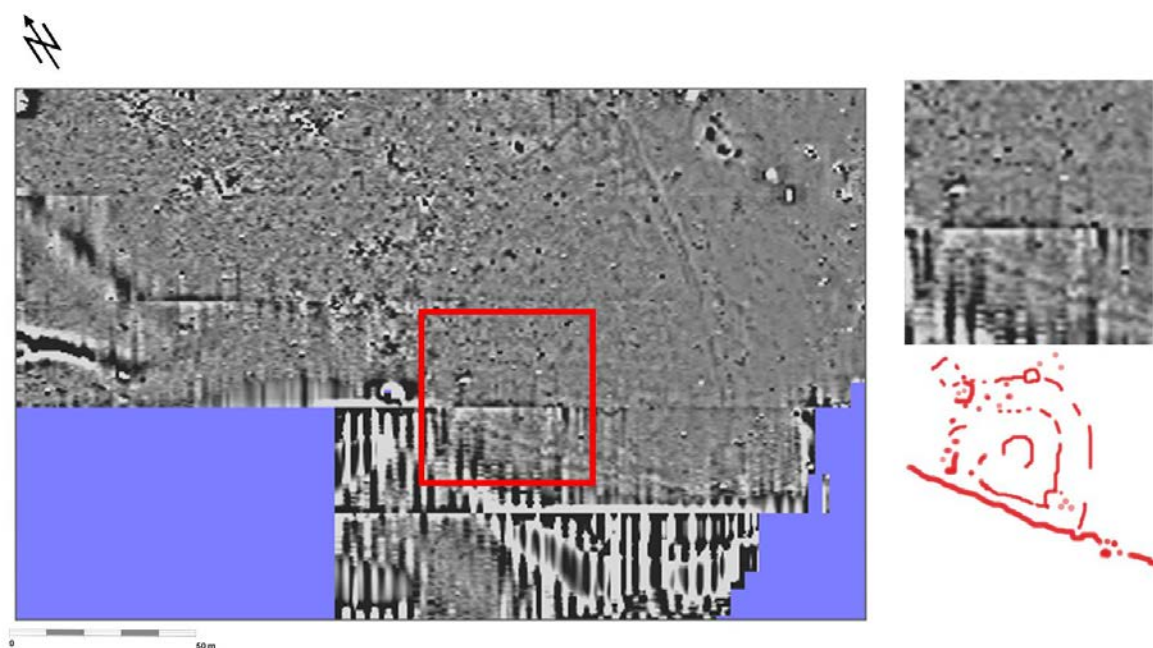


*Figure 77: Geophysical Survey results for Field 2 magnetometer survey; Bryn Celli Ddu (Llanddaniel Fab). Anomalies highlighted in top right corner.*

### *Field 3*

The 3<sup>rd</sup> field to be surveyed as part of this project is to the far south of the area surveyed and is the lowest lying field as the ridge from field 1 tapers out and the landscape drops down towards the river Afon Braint. The land then rises to the north and aligns with the upland areas of field 2, fortunately the geology in field 3 did not distort the image as much as it did in field 2, but it was clear during the operation of the magnetometer that the south and west of the field was detecting high electromagnetic readings and from the data it is clear that there are underground electrical utilities which follow the edge of the field alongside the road. Unfortunately, due to the distortion caused by the electromagnetic field created by this underground utility the survey of the western corner of the field was abandoned.

An unusual anomaly can be seen, which comprises of 3 concentric sub-circular anomalies with a series of linear anomalies to the south and east (see Figure 78). This anomaly is more ephemeral than the clear sub-circular anomalies seen in the magnetometry data from field 1 and these circles are incorporated into the linear anomalies which align with the early field boundary features seen in the LiDAR. Smaller partial sub-circular anomalies can be seen on the upland areas in the centre of the survey along with clusters of magnetic readings and this clustering of circular anomalies on the upland areas is becoming a pattern in the data. The feature measures 14.2 metres northeast to southwest and 15.5 metres northwest to southeast. The smaller central enclosure measures 3 metres across.



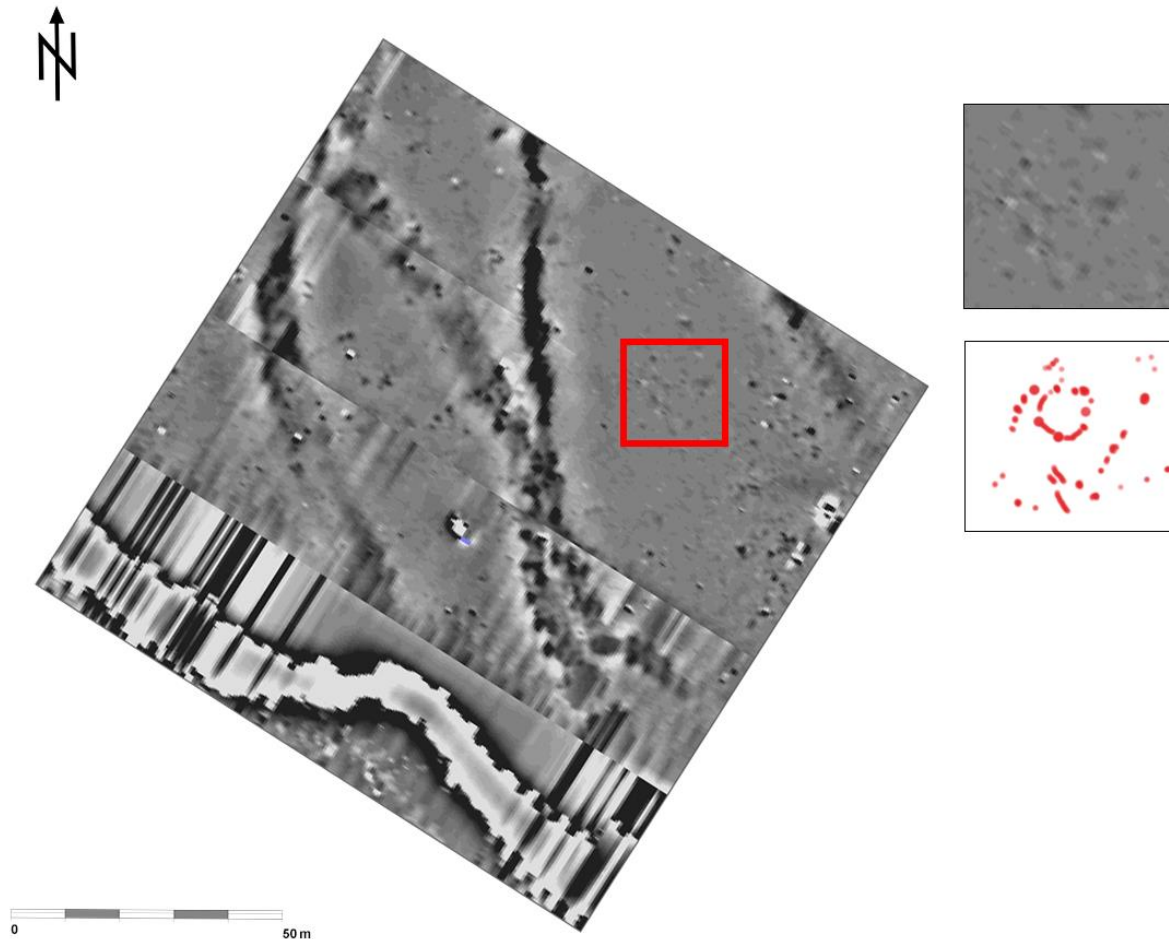
*Figure 78: Geophysical Survey results for Field 3 magnetometer survey; Bryn Celli Ddu (Llanddaniel Fab). Note electromagnetic interference to southwest. Anomalies highlighted in right hand side.*

#### *Field 4*

Field 4 is located to the northwest of field 3 and is located in the lowland area between the uplands to the north and west and the uplands to the east in the field with the outcrop. This lowland area continues into field 7.

Unfortunately, the strong presence of further magnetic interference had left strong natural anomalies within the readings. These appear as three dark irregular lines running down from the north of the survey are likely geological, with the more intense white reading running from west to south being a continuation of the underground electrical cable running parallel to the

road (see Figure 79). The total area of the surveyed anomaly measures 16 metres northwest to southeast and at least 18 metres northeast to southwest. The smaller sub-circular anomaly at its centre measures 5.6 metres in diameter.



*Figure 79: Geophysical Survey results for Field 4 magnetometer survey; Bryn Celli Ddu (Llanddaniel Fab). Note electromagnetic interference to southwest. Anomalies highlighted in top right corner.*

A faint anomaly can be seen to the east of the survey area with a rectilinear to the west which is partially obscured by the underlying geology (see Figure 79). It is clear from the survey results so far that the geology that lies beneath the earth at Bryn Celli Ddu is displaying magnetic properties and this is due to the diamagnetic properties of the quartz veins running through the stone.

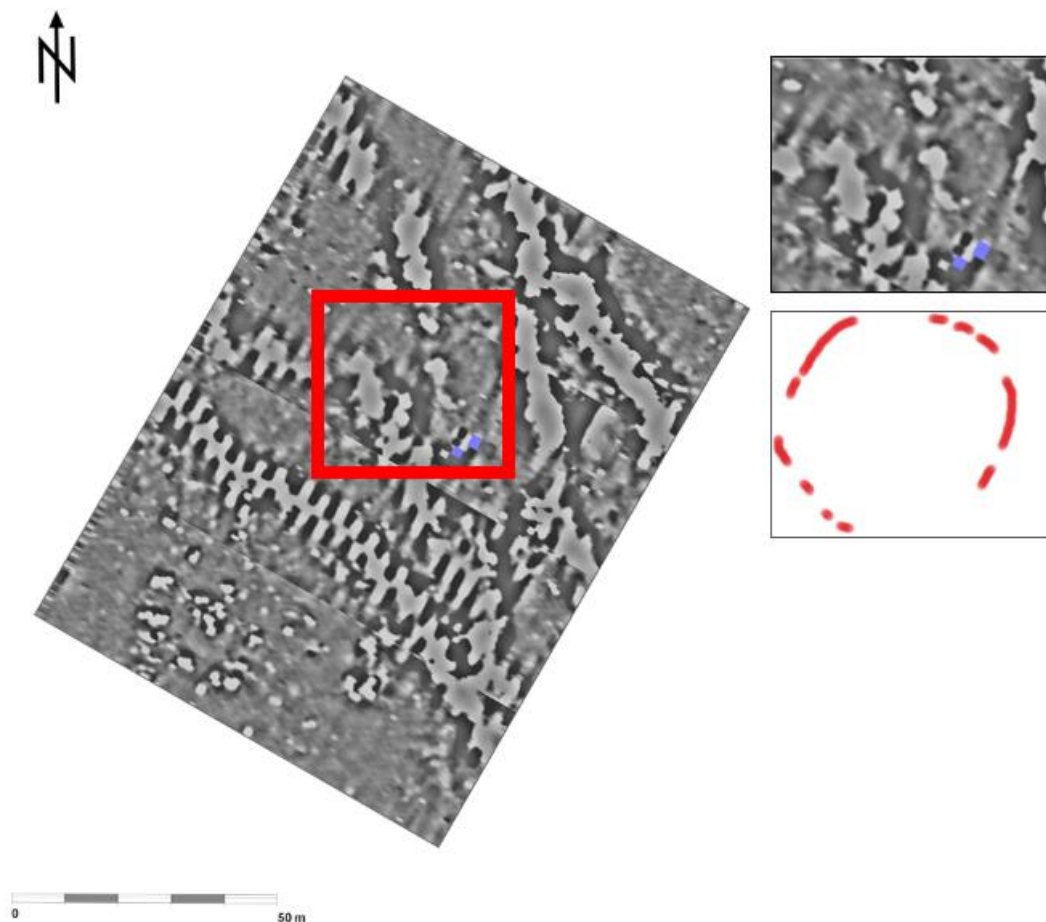
### *Field 5*

Fields 5 and 6 are actually part of the same field but it was decided to focus on two separate upland regions, and this is the reason for the separate numbering. Field 5 is of particular interest to this project as this is the area of the landscape that has the largest monolith; Tyddyn Bach.



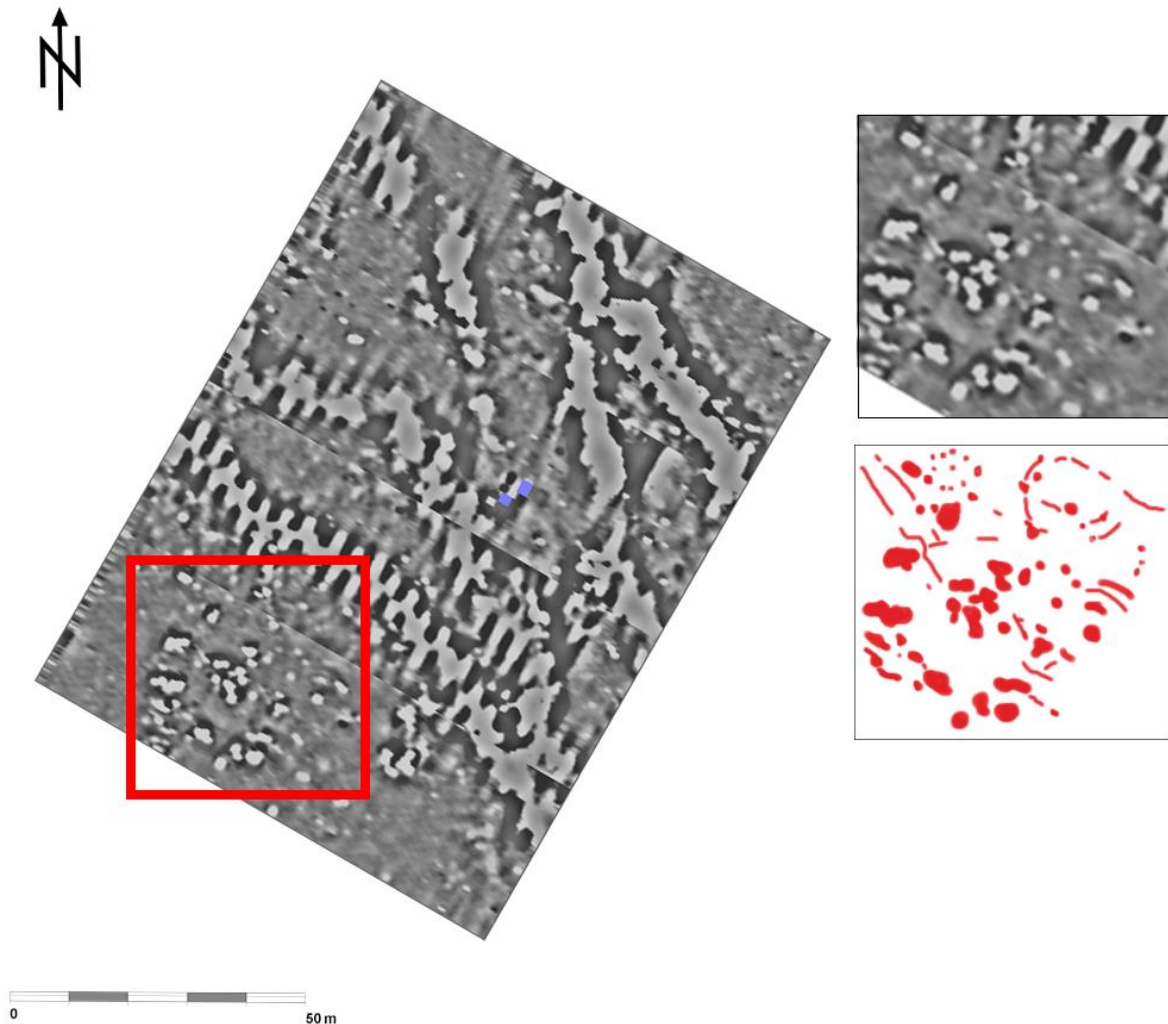
This upland area is peppered with small outcrops and stones and the base of Tyddyn Bach is surrounded by a pile of stones, a clearance cairn which was created by the farmer to maximise on space.

Once again much of the results of this survey are obscured by the diamagnetic response of the underlying natural geology which manifest as the linear anomalies running from top to bottom (see Figure 80). Careful analysis of the area around the stone revealed the faint outline of a large sub-circular anomaly that is in the same place as the anomaly noticed in the LiDAR data. The anomaly (see Figure 80, right hand side) measures 14.9 metres in diameter, with traces of another curvilinear anomaly running parallel to its northwest.



*Figure 80 (top) and 53 (below): Geophysical Survey results for Field 5 magnetometer survey; Bryn Celli Ddu (Llanddaniel Fab). Note electromagnetic interference across survey area. Anomalies highlighted in top right corner.*

Another cluster of anomalies can be seen to the south of the circular anomaly and this feature is a circle of large readings surrounded by smaller sub-circular anomalies that are comparable to the sub-circular anomaly found in the magnetometry results from field 1 (see Figure 80).



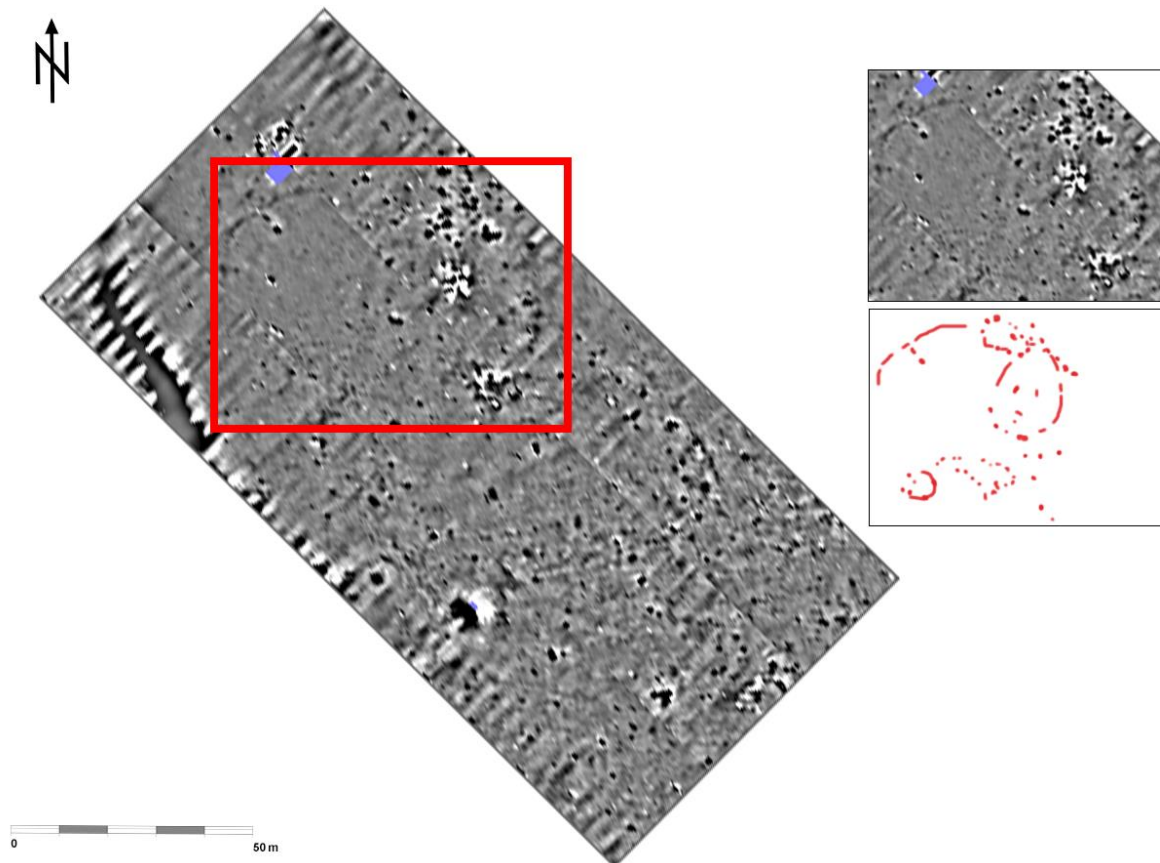
*Figure 81: (top) and 53 (below): Geophysical Survey results for Field 5 magnetometer survey; Bryn Celli Ddu (Llandaniel Fab). Note electromagnetic interference across survey area. Anomalies highlighted on right side, with interpretation below.*

The anomalies here measure 14.6 metres northeast to southwest by 14.5 metres northwest to southeast.

### *Field 6*

Field 6 is within the same modern field boundary as field 5 and is an upland area to the north. The area between fields 5 and 6 drops away suddenly into a lowland area which retains water and can be boggy in places. For this reason, the upland areas were focused upon.

The upland area in field 6 is remarkably flat with a clearance cairn in the northernmost corner which can be seen in the data as the blue dummy run. It is worth noting at this point that a number of the stones within this clearance cairn appear to be worked and prepared in a similar way to some of the uprights of tombs found across the island, we will return to this clearance cairn in the discussion.



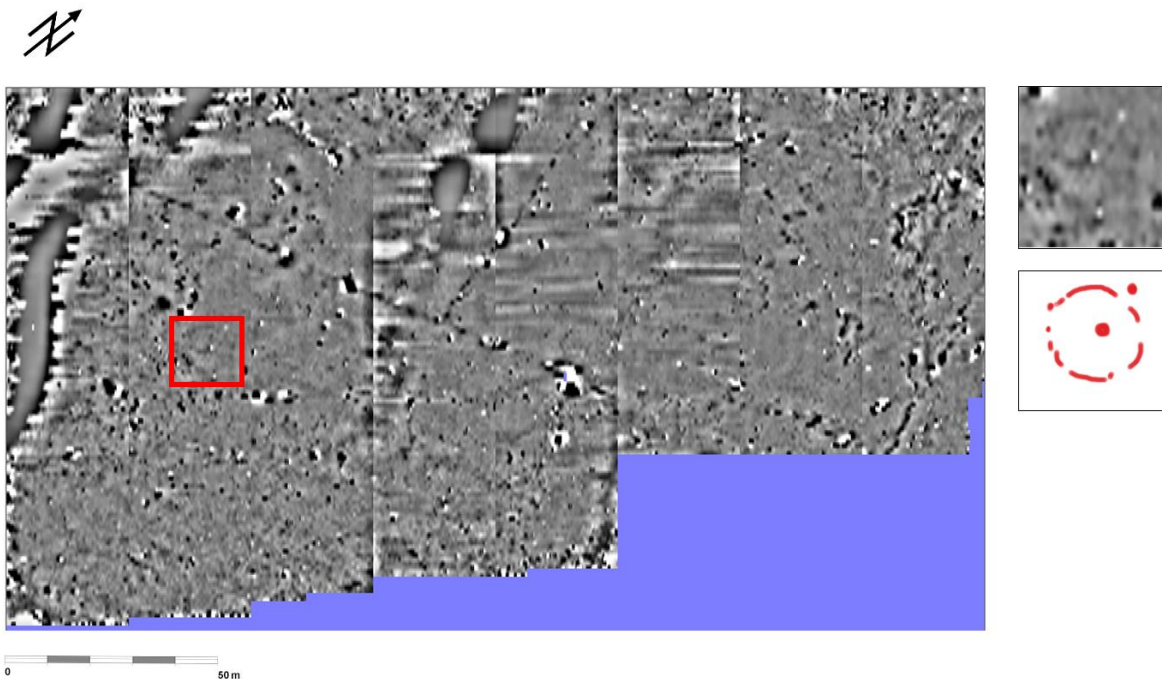
*Figure 82: Geophysical Survey results for Field 6 magnetometer survey; Bryn Celli Ddu (Llanddaniel Fab). Note electromagnetic interference across survey area. Anomalies highlighted in top right corner.*

The results from field 6 show several curving linear anomalies which enclose the flat land at the top of the hill (see Figure 82). A few electromagnetic spikes (visible as white and black blobs) show that there is probably a high amount of ferrous metal beneath the ground surface. Possible sub-circular anomalies can be seen within the circuit of the two large linear anomalies. These two large anomalies that enclose the flat hilltop can be seen as ditch features in the LiDAR data. The anomalous area measures at least 48.8 metres northwest to southeast and 49.6 metres northeast to southwest, the largest recorded on site.

### Field 7

The final field surveyed at Bryn Celli Ddu was a lowland area lying between fields 5 and 6 to the northwest and field 2 with the outcrop to the southeast.

The results from this field show clear linear anomalies on an east west alignment through the field, linear anomalies running north south terminate at the east west linear and are clearly associated (see Figure 82). The longest running roughly east to west, is measured at 124.7 metres, with another normally running northwards from longer linear measuring at 66.6 metres. It is likely that these are previous field boundaries and two breaks in the longest east west linear are clearly entrances - these are defined by a strong ferrous metal anomaly (or diamagnetic local stone as is found across the site).



*Figure 83: Geophysical Survey results for Field 7 magnetometer survey; Bryn Celli Ddu (Llanddaniel Fab). Note electromagnetic interference across survey area. Anomaly highlighted in top right corner.*

To the south of the enclosure is a circular anomaly with a central anomaly and a break in the circle to the west and the diameter of this circle is 10 metres, with the diameter of the central anomaly measured at 1.65 metres. To the northwest of this anomaly is another sub circular anomaly that is 35.5 metres in diameter and underlies the linear anomaly. Circular anomalies similar to the 10-metre circle can be seen throughout this field with two circular anomalies to

the northeast, both of which measure approximately 11 metres in diameter the most northerly of which still exists as a small extant mound in the otherwise flat field.

The results of the data from the geophysical surveys at Bryn Celli Ddu have discovered a large number of anomalies indicative of previous use of the land in recent and prehistoric periods. The results were overlaid over the satellite image of the area and the anomalies were highlighted in red with the extant surviving archaeological remains being highlighted in purple. With the data analysis complete and the anomalies from the survey mapped in relation to each other, the true extent of the previous field systems can be seen and appear to follow a different alignment to the current field systems. Some of the current field systems follow the line of some of the earlier phases of land partitions associated with farming practices, but the current farm has changed much of the layout to accommodate the modern farming practices now used at the dairy farm at Bryn Celli Ddu.





*Figure 84: Geophysical results superimposed onto satellite view of survey area; Bryn Celli Ddu (Llanddaniel Fab)*



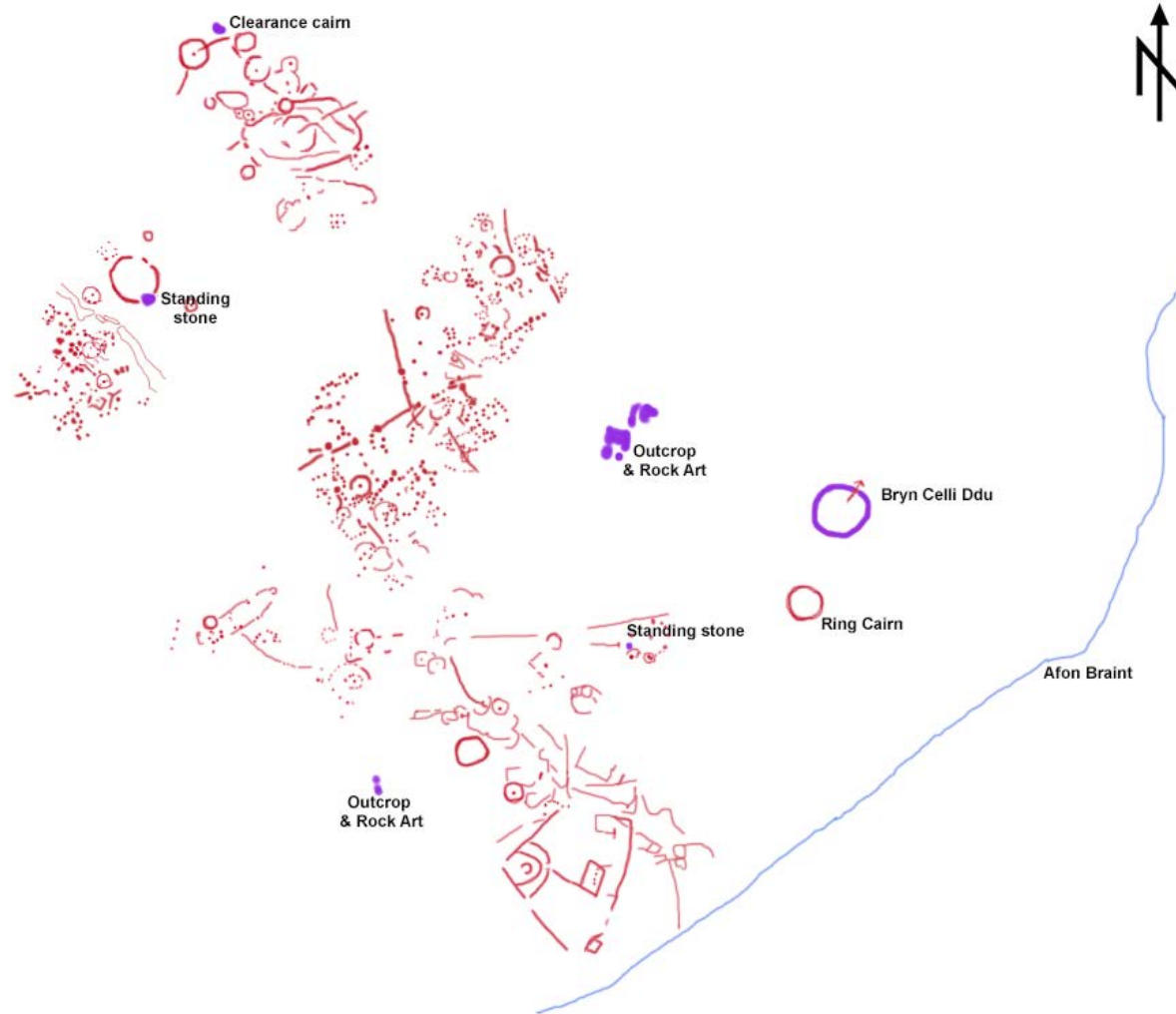
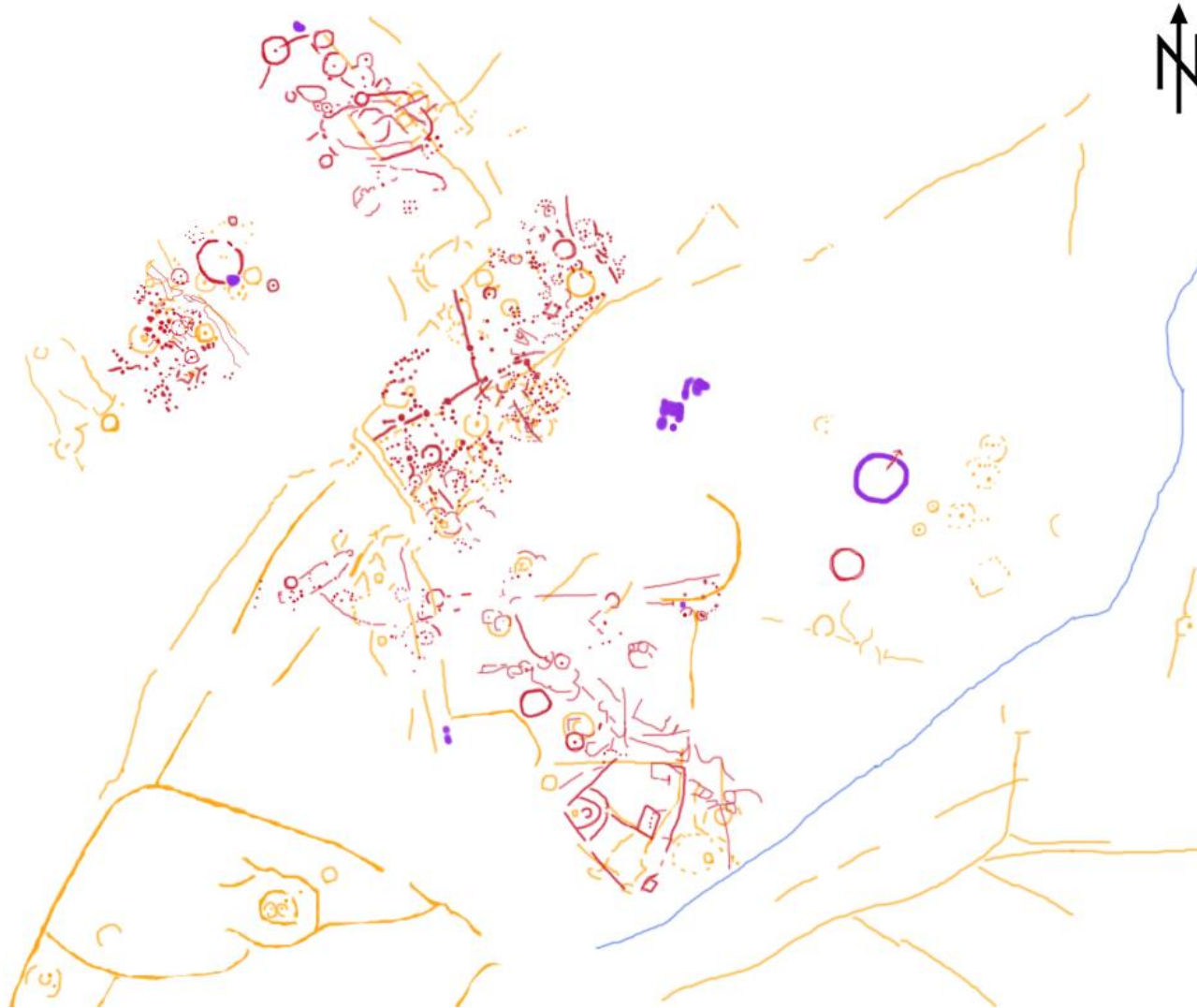


Figure 85: Interpretation of anomalies identified during geophysical survey; Bryn Celli Ddu (Llanddaniel Fab)



*Figure 86: LiDAR/geophysical results superimposed onto survey area; Bryn Celli Ddu (Llanddaniel Fab)*



*Figure 87: LiDAR/Geophysical interpretation outlines on white background in survey area; Bryn Celli Ddu (Llanddaniel Fab). Known/existing monuments highlighted in purple.*

The features visible in the LiDAR were overlaid and highlighted in yellow (see Figure 80) and this process of the analysis further defines the course of the linears with some of the features perfectly aligned with the linear anomalies found in the magnetic data. The majority of circular and sub-circular anomalies can be found in the upland areas associated with the standing stone at Tyddyn Bach and these are comparable with the anomalies seen closely associated with the tomb at Bryn Celli Ddu. The clusters of circular and sub-circular anomalies in the lowlands look to be structures associated with the field systems, but the remainder of the analysis and suggested origins of these anomalies will be continued in the discussion.

### 3D Photogrammetry of Rock Art

#### *Stone 1*

Photographs were taken of the small outcrop in the western corner of field 3 which has a prominent cup mark on the top of it. The photographs of the stone were uploaded into Agisoft 3D software, and a 3D model was created. The cup is visible to the right of the scale (See Figure 88). Unfortunately, the cup was full of water and although the water was removed: a wet patch which can be seen in the model did not dry and reflected some of the finer detail of the cup mark.

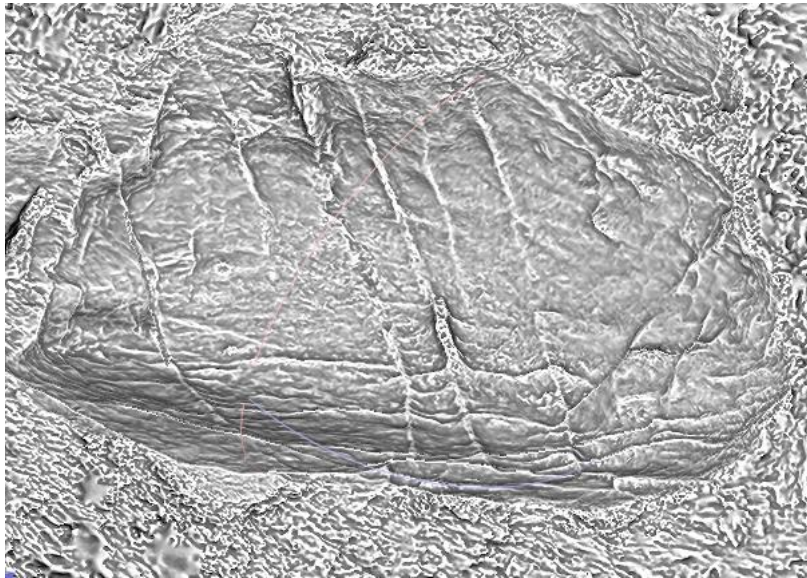


*Figure 88: Photogrammetric model of cup-marked stone (Stone 1); Bryn Celli Ddu (Llanddaniel Fab).*

The 3D model of the outcrop was uploaded into Meshlab software (Cignoni et al. 2008) and radiance scaling (Vergne, et al. 2010) was applied to the mesh. This process exaggerates the

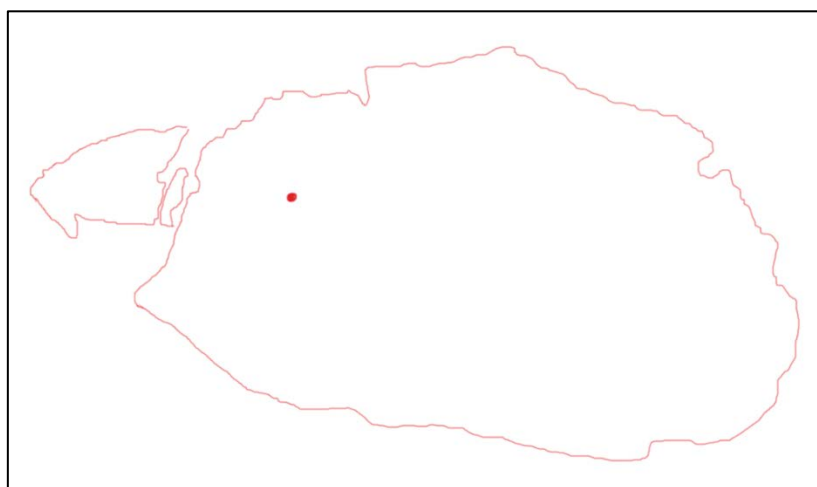


shadows and highlights on the stone, emphasizing the crevices and revealing the slightest of chips and marks in the surface of the stone. Unfortunately there are no other signs of rock art on the area of the stone that is above ground. It is possible that there is further rock art that has now been obscured with the build up of the field surface over the millenia but excavation will be required to prove this.



*Figure 89: Lambertian-radiance scaling of cup-marked stone (Stone 1); Bryn Celli Ddu (Llanddaniel Fab).*

An image of the 3D model was uploaded into Photoshop software and the cup mark was highlighted as a red dot and the outline of the stone was also highlighted (see Figure 90). The length of the stone aligns with a southwest northeast alignment and the cup mark can be seen towards the south-west of the outcrop.



*Figure 90: Outline drawing of cup marked stone (Stone 1) showing cup-mark on surface; Bryn Celli Ddu (Llanddaniel Fab).*



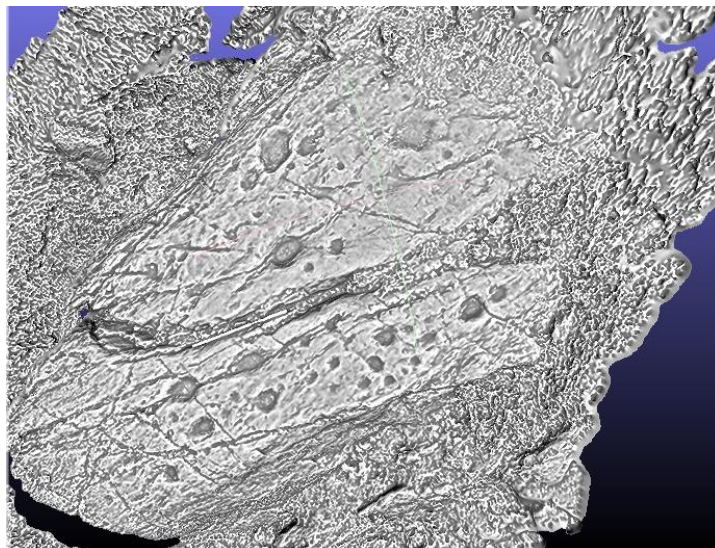
## Stone 2

A recently discovered larger outcrop to the west of the landscape that was surveyed has a higher quantity of cup marks on the surface and this outcrop was also 3D modelled using the same process as was used on the outcrop in field 3.



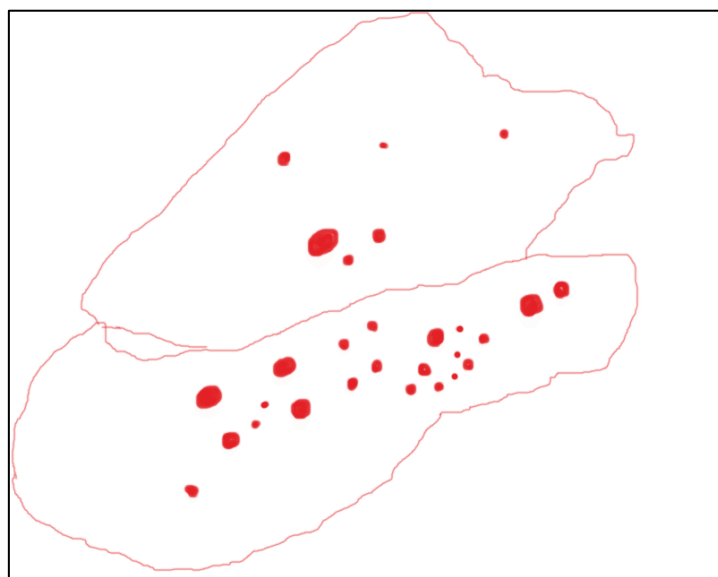
*Figure 91: Photogrammetric model of cup marked stone (Stone 2); Bryn Celli Ddu (Llanddaniel Fab).*

The mesh of the 3D model was imported into MeshLab (see Figure 92) and radiance scaling was used to reveal a clearer image of the extent of the prehistoric petroglyphs on the stone – both those that are visible and invisible to the human eye.



*Figure 92: Lambertian-radiance scaling of cup-marked stone (Stone 2); Bryn Celli Ddu (Llanddaniel Fab).*

A total of 27 possible cup marks were recorded on this outcrop but there is some uncertainty as to whether a number of them are prehistoric rock art, as the top surface of the outcrop appears to have once been the bedding plane of the stone as it was affected by glacial actions in the geological formation of North Wales. These bedding planes often get pebbles stuck in them as they are the separation between one stratigraphic layer and another and with the stone being malleable along with the intense pressure exerted on the stones by the glacier, the pebbles are forced between the layers. When these stone fall out a impression is left within the outcrop known as a pebble cast and it is these pebble casts that are often mistaken for prehistoric cup marks (Crowell, 1957).



*Figure 93: Outline drawing of cup marked stone (Stone 2); Bryn Celli Ddu (Llanddaniel Fab).*

An image of the radiance scaled mesh was imported into Photoshop and the cups and possible cup marks were highlighted in red along with the overall outline of the outcrop (see Figure 93).

## Ty Newydd, Llanfaelog



*Figure 94: Image of Ty Newydd burial chamber.*

The data from the surveys carried out at Bryn Celli Ddu revealed that the majority of anomalies usually indicative of Neolithic and Bronze Age activity are concentrated on upland areas, surrounding the reconstructed tomb at Bryn Celli Ddu and the standing monolith known as Tyddyn Bach. What stood out as remarkable was the density of circular and sub-circular anomalies surrounding the known monuments and it was this that inspired a series of magnetometry surveys across the landscape surrounding the tomb at Ty Newydd and the standing stones at Llanfechell.

The ruins of the tomb at Ty Newydd are located atop a large strip of Coedana granite that makes up most of the upland area of this region and is represented in bright pink on the geological map. This large strip of Coedana granite has channels of Tidal Flat Deposits of clay and silt in the lowland areas represented in yellow with Ordovician rocks interbedded with sandstone conglomerate to the northwest represented in green.



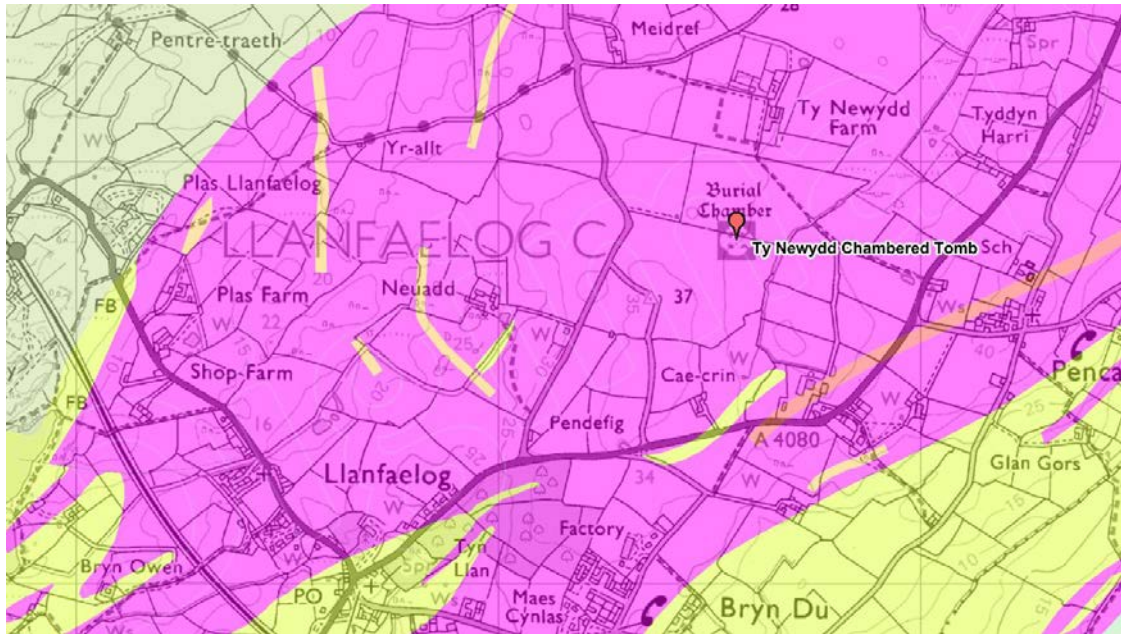


Figure 95: Geological map of Ty Newydd study area.

## Geophysical Survey

The survey at Ty Newydd was carried out in the summer of 2018 after the discovery of several circular cropmarks in a black and white aerial photograph (see Figure 96). The circular cropmarks can be seen in the field to the east of the tomb which can be seen in the corner of the neighbouring field.

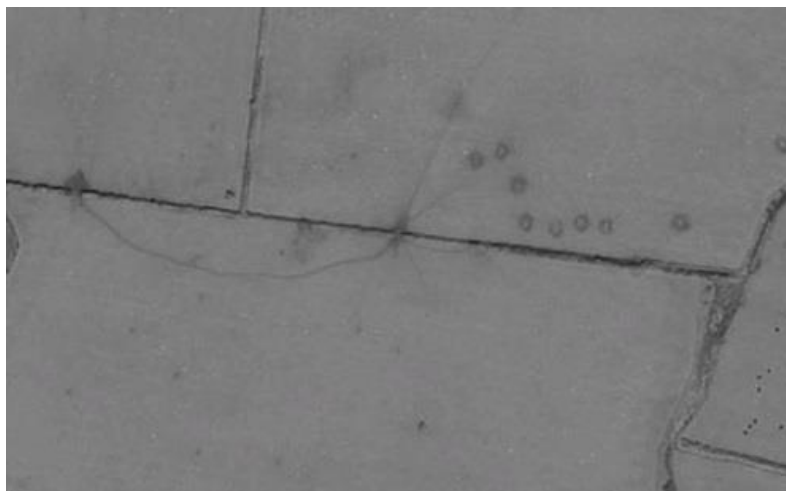
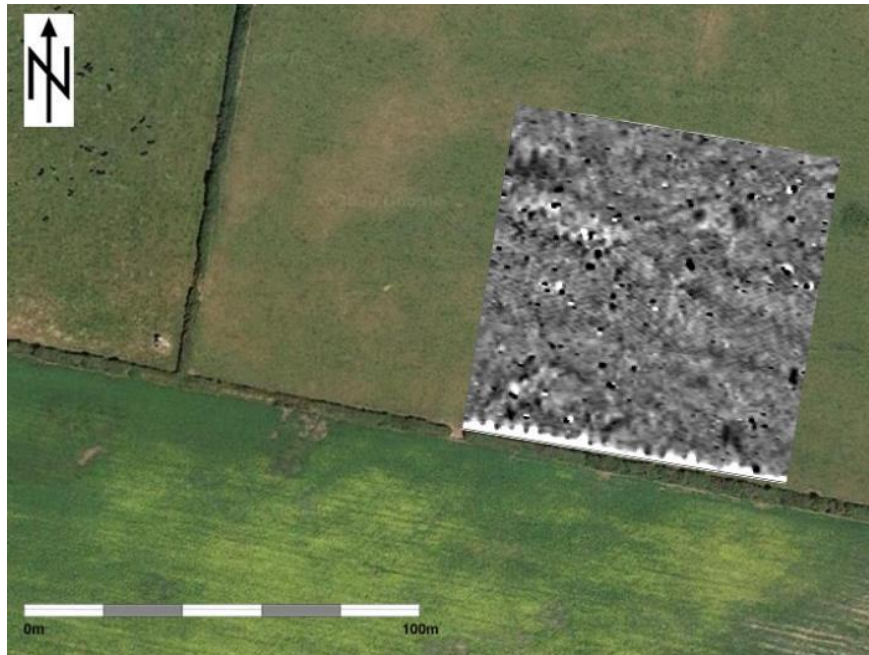


Figure 96: Aerial photograph of survey area. circular features visible on right side of image; Ty Newydd (Llanfaelog).

The survey grids were focused over the cluster of cropmarks and revealed a large circular anomaly, measuring at 32.7 metres, with a number of circular, sub-circular and linear anomalies across this small section of the field (see Figure 97). These smaller anomalies are varied in size, with the smallest measuring 2.4 metres in diameter and the largest measuring 7 metres in diameter. The relationship between some of these smaller anomalies to the larger one remains unclear, however at least three of the largest subcircular anomalies are situated at its northern side.



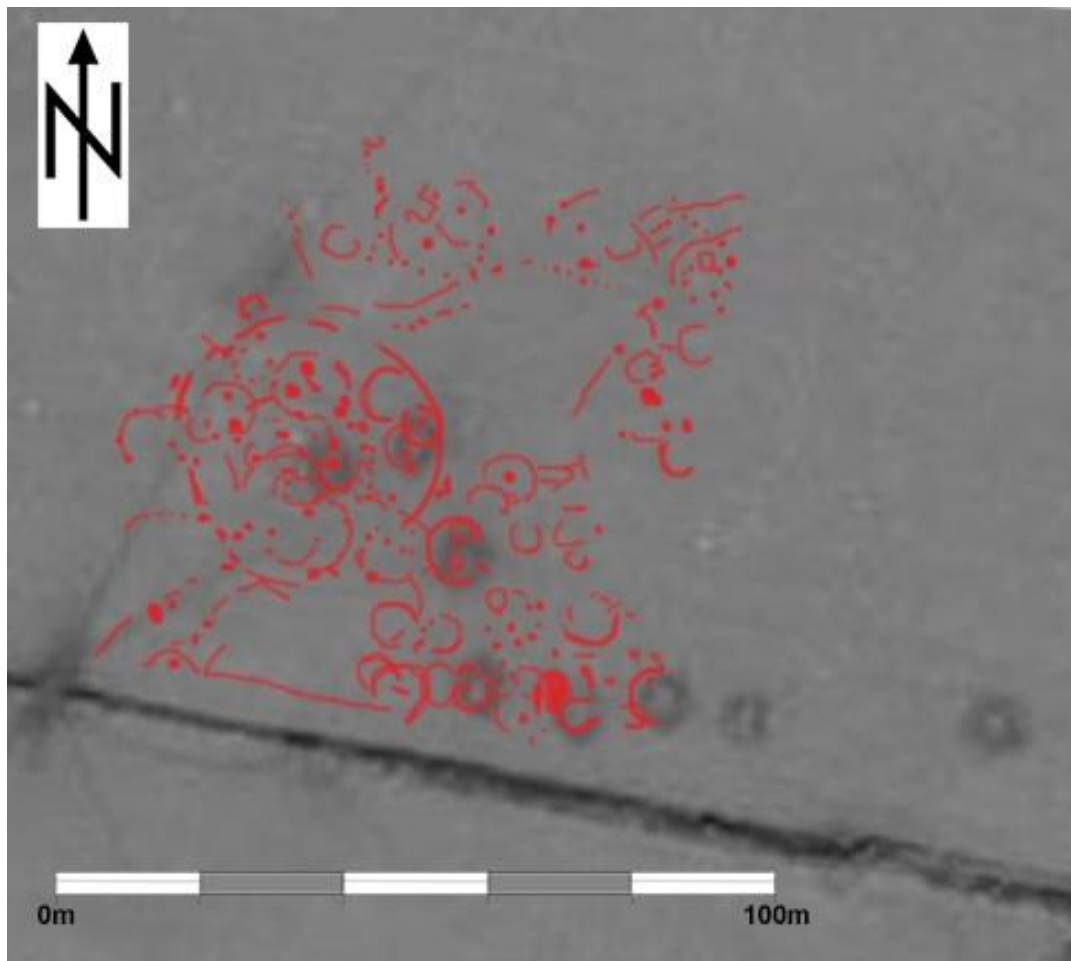
*Figure 97: Geophysical Survey results; Ty Newydd (Llanfaelog).*

Close analysis and highlighting of the anomalies (see Figures 98 and 99) show the smaller sub-circular anomalies cluster on the upland area of the ridge which is also home to the tomb in the field to the west, the circular cropmarks can also be seen in the field to the south and it is likely that these circles are associated with the tomb at Ty Newydd. It remains unclear at this stage whether these anomalies are domestic, ritual or possibly a mixture of both.





Figure 98: Interpretation of anomalies identified on geophysical survey; Ty Newydd (Llanfaelog).



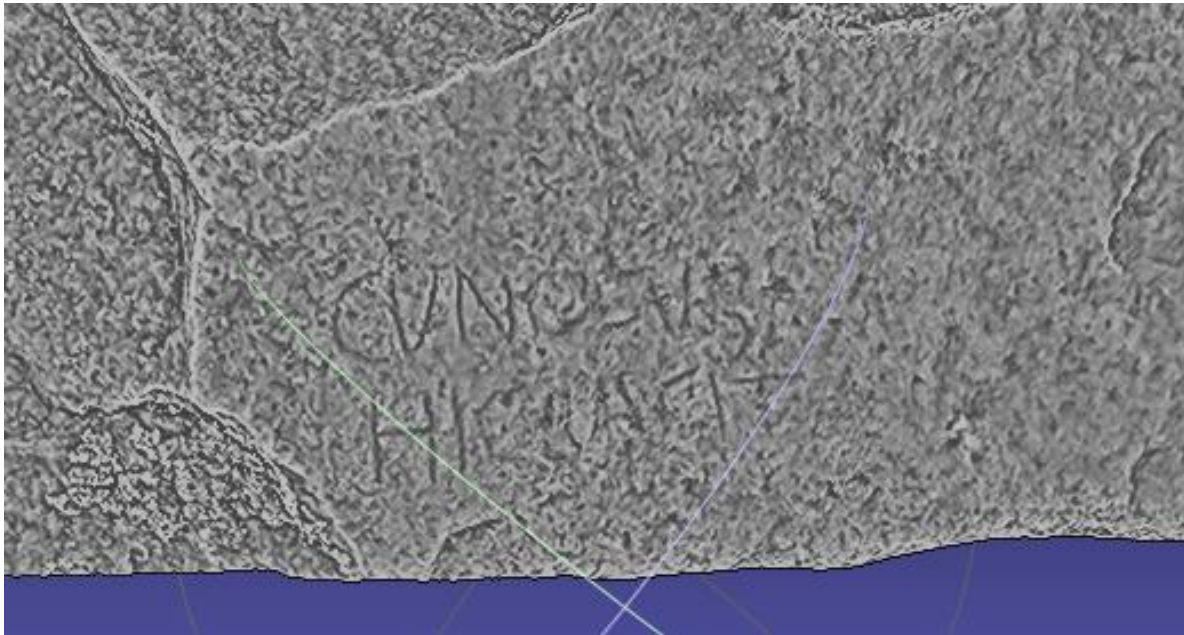
*Figure 99: Geophysical survey anomalies superimposed onto aerial image of site; Ty Newydd (Llanfaelog).*

### 3D Photogrammetry: The Stone of Cunogussus

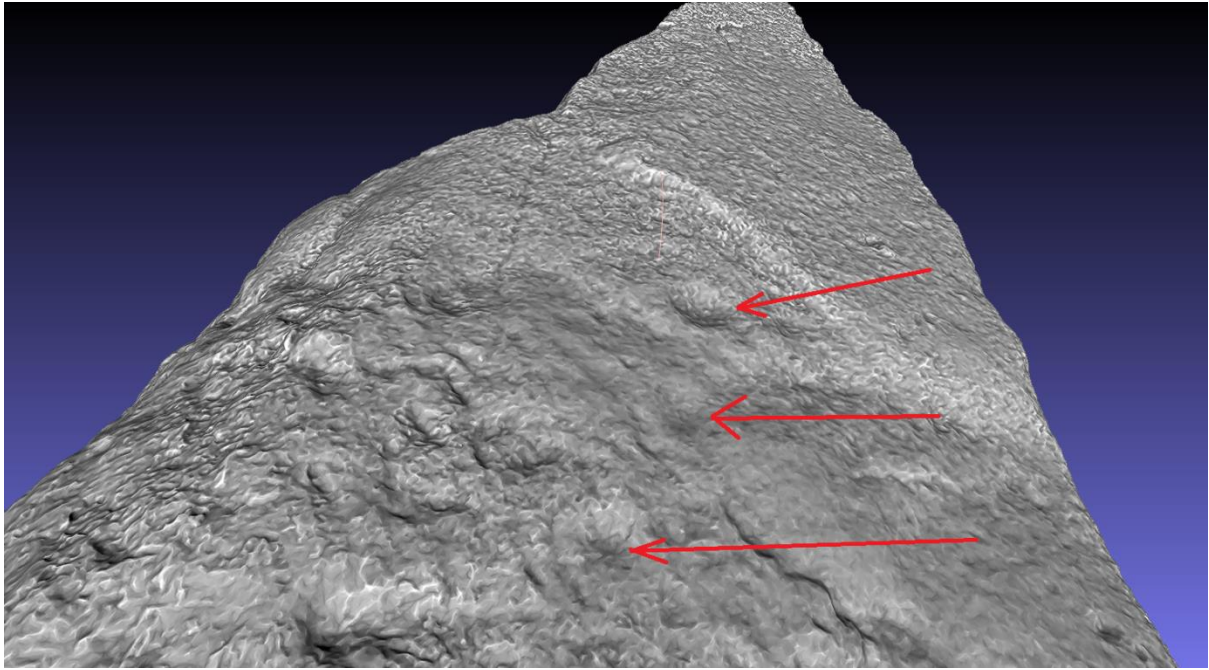
Less than 1.5 km to the northeast of Ty Newydd tomb is a standing stone known as Bodfeddan or the Stone of Cunogussus on account of a surviving 6<sup>th</sup> century inscription which reads ‘Cunogusi Hic Iacit’ (The Stone of Cunogussus he lies here) on its northern face (see Figure 100). A 3D photogrammetric model was produced of both the possible cup mark at the base of the stone as well as the 6<sup>th</sup> century inscription. The inscription appeared clearly on the data, although very worn in places, and could still be read following the use of Lambertian-radiance scaling of the model in Agisoft.

Of interest on this monument is the possible cup mark visible at the base of the stone, first described by Frances Lynch in *Prehistoric Anglesey* (1991; p. 350) and later referenced in other studies (see Edwards 2013; pp. 159-62). It was suggested that this stone may therefore have been a reused late Neolithic or early Bronze Age standing stone. The photogrammetric model

of the stone confirmed that not only was this a cup marked stone, but there was possibly the presence of at least two others in a line running directly down the stone, leaving three cup marks in total (see Figure 101). The cup marks observed were only seen on the eastern side, facing away from the dry-stone wall. This further strengthens the notion that the stone was an existing monument reused in early medieval times, a practice that is not uncommon on the island (see Treiorwerth section, p. 170)



*Figure 100: Lambertian-radiance scaling of standing stone showing 6th century inscription on stone - Cunogusus Hic Iacit. (Bodfeddan)*



*Figure 101: Lambertian-radiance scaling of standing stone, showing three cup-marks identified; Cunogusses stone (Bodfeddan)*

## Llanfechell

Just north of the small village of Llanfechell in the north of the island are a number of standing stones which include Meini Hirion which is also known as the Llanfechell Triangle and the Llanfechell monolith. The LiDAR from these sites (see Figure 102) show that the standing stones and the tomb on Cromlech Farm to the west all reside on upland areas at the summits of the ridges and hills which cover Anglesey. As such, these monuments would have been visible to those travelling to and from the area – particularly on the roads running from the north and west of the village. These routes may therefore have an earlier origin.





*Figure 102: LiDAR image of Llanfechell survey area with monuments highlighted – Cromlech Farm megalithic tomb (blue, top left); Llanfechell Triangle (red, centre left); Penbodeistedd Standing Stone (green, right).*

The geological nature of the land at Llanfechell largely consists of Mica schist and Psammite which is known as the New Harbour Group and is represented in green and it is this geology that both monuments studied as part of this research project can be located. Igneous intrusions of Gabbro, Microgabbro and Diorite can be found to the south, west and northwest, which is represented in orange on the geological map (see fig 103).

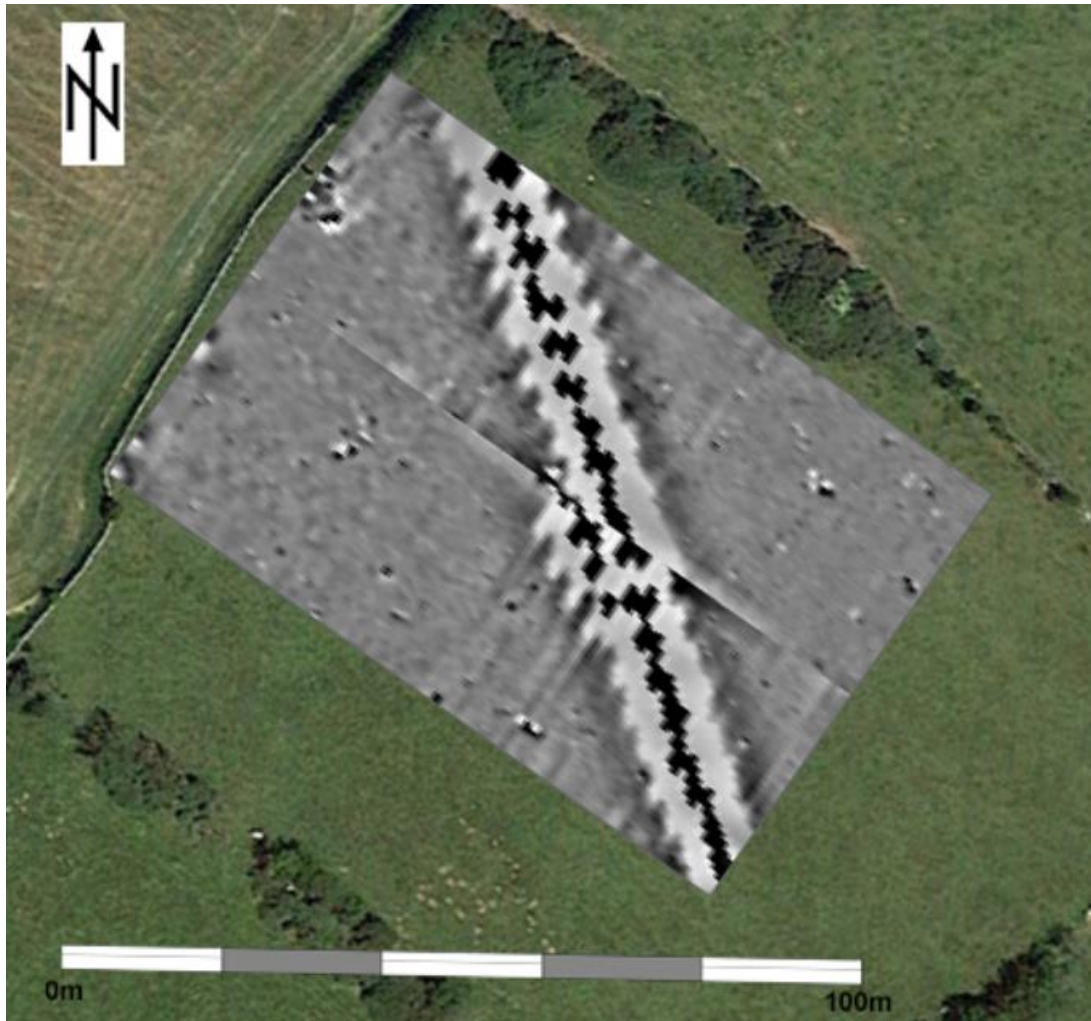




Figure 103: Geological map of Llanfechell study area.

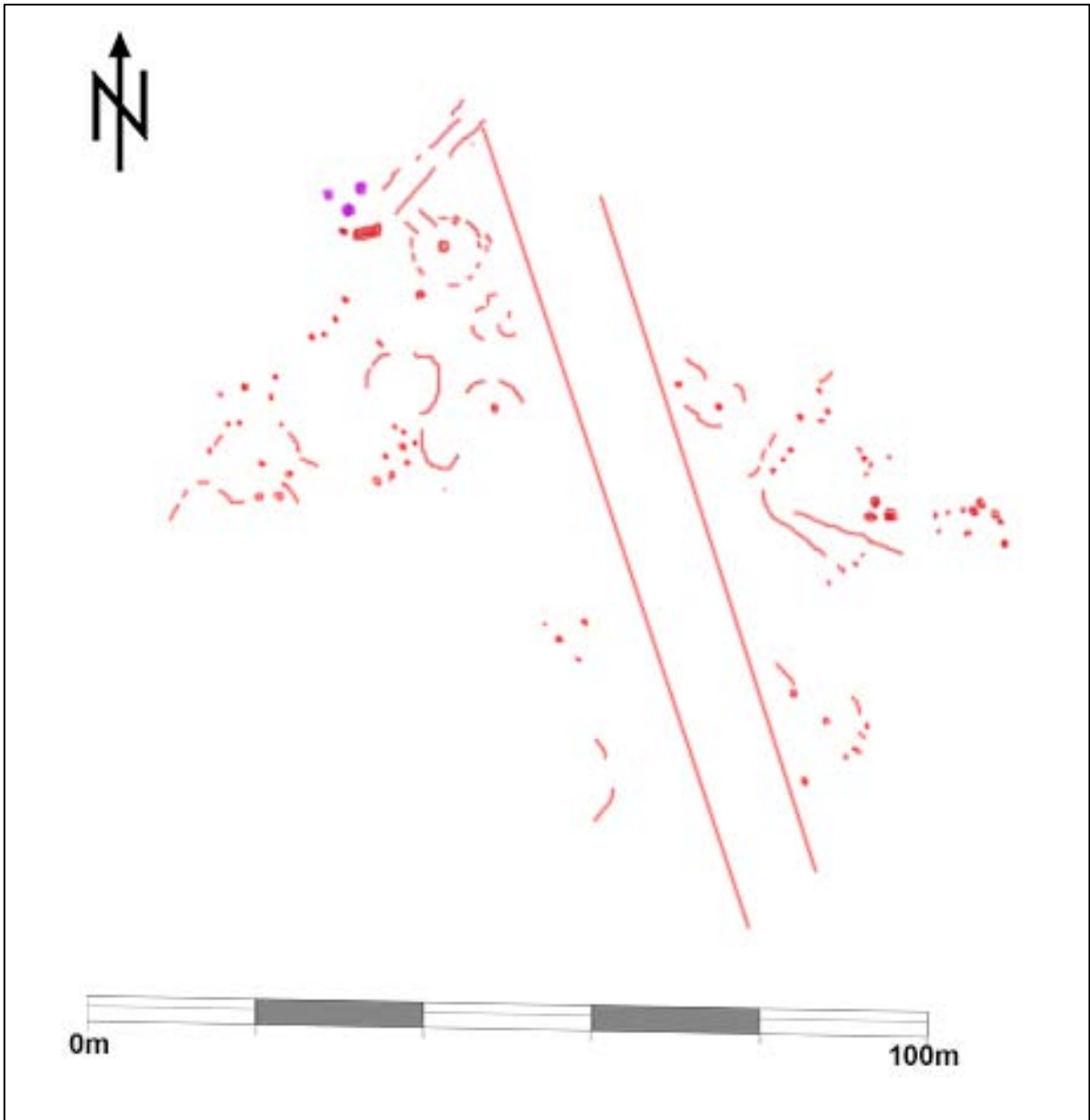
## Geophysical Survey at Meini Hirion (The Tall Stones) – The Llanfechell Triangle

Geophysical surveys were carried out at Meini Hirion and the Llanfechell standing stone (Penbodeistedd) in February 2020 during storm Dennis. Conditions were less than favourable for survey but despite the weather six grids of magnetometry survey was carried out in both fields. Both surveys covered areas close to the standing monuments in an attempt to locate other evidence of prehistoric ritual activity, much like what was found in the landscape surrounding Bryn Celli Ddu. The upland areas were focused upon, as much of the evidence for Bronze Age burial is found on the upland ridges. This approach was later rewarded with the observation of new anomalies possibly associated with prehistoric ritual and funerary monuments, as discussed below.



*Figure 104: Geophysical survey results superimposed onto satellite image; Meini Hirion (Llanfechell).*

The most noticeable anomaly is the large distorted linear anomaly that runs through the centre of the survey area (see Figure 104). This anomaly is an underground electrical cable that is connected to the Wylfa nuclear power station and was located prior to the survey being carried out. The size of the anomaly, measuring almost 15 metres in some places, may obscure other features nearby.



*Figure 105: Interpretation of geophysical anomalies identified during survey; Meini Hirion (Llanfechell).*

Several sub-circular anomalies are seen to the south-west of the megalithic triangle along with a strong anomaly directly to the northeast, a double curvilinear feature can be seen heading out of the stone triangle to the north-west into the gorse bushes, leading towards and under the dry-stone wall, measuring 15 metres in length (see Figure 105). In the LiDAR a large circle can be seen overlaying the underground electrical utility and this has been added to the analysis as many of the anomalies cannot be seen due to the electro-magnetic halo produced by the current.

A large anomaly can be seen directly to the southeast of the standing monument, and it is possible that this is a fourth stone that is now laid flat and buried beneath the field (see Figure

105, top). Only excavation will be able to determine the nature of this anomaly, but its proximity to the monument makes it likely that this is linked to the prehistoric use of the field.

Similar to the results from Bryn Celli Ddu a number of small anomalies seem to make sub circular anomalies, usually an indicator of earlier prehistoric monuments in the vicinity. Also, as expected, most of these anomalies identified are located to the north and west of the survey area, the upland area of the ridge that the stone triangle sits upon. To the south and east of the survey, where the land drops away to the bottom of the ridge, the bottom of the field becomes waterlogged and boggy.

It is clear from these results, therefore, that the Llanfechell Triangle does not stand alone in the landscape with several new anomalies found in the direct proximity to the monument and in the wider landscape. The potential for further archaeological work on this site may yield further clues as to the history of this site.

### Geophysical Survey at Penbodeistedd standing stone (Llanfechell Monolith)



*Figure 106: Image of author posing near Penbodeistedd standing stone, Llanfechell.*



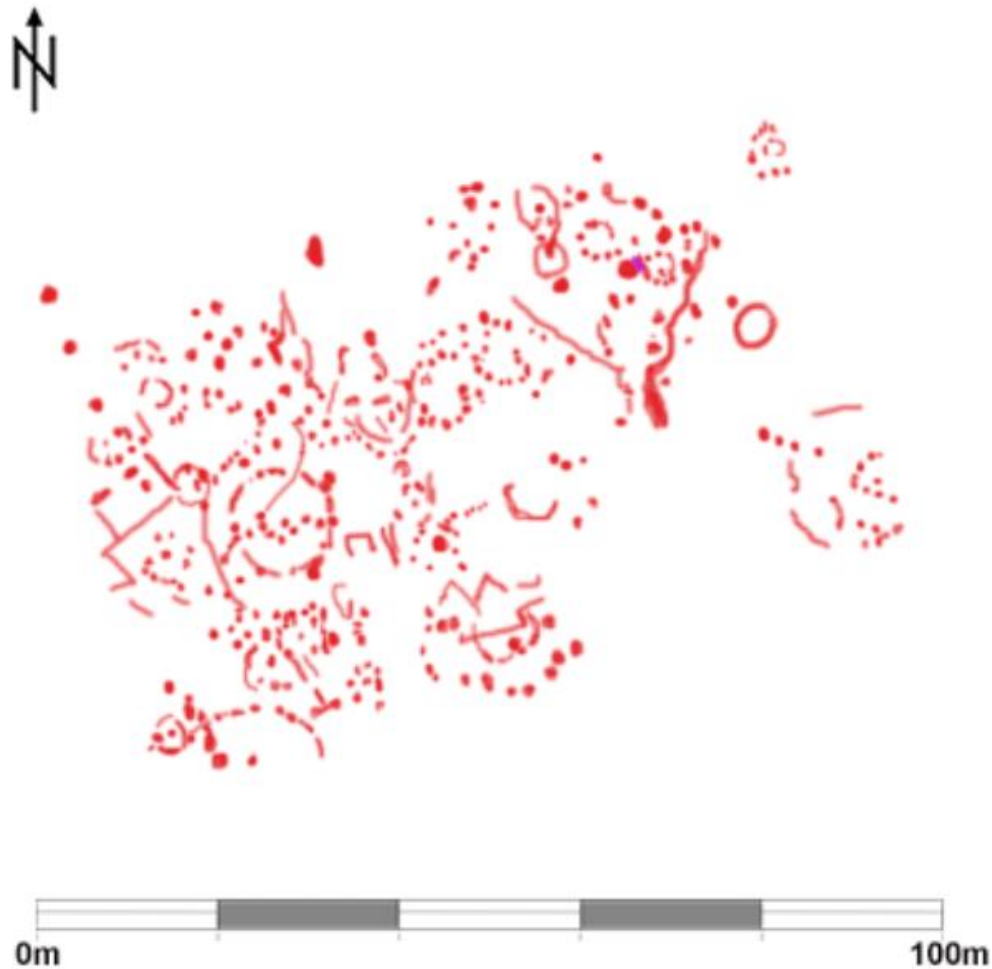
The survey at the Llanfechell monolith (see Figure 107) aimed to cover a larger area than a previous survey, undertaken when the standing fell after the field became waterlogged, leading to the base of the stone slipping and collapsing (Smith 2011). The aim behind extending the survey was to establish if the standing stone is alone in the field or surrounded by anomalies usually associated with other anomalies, similar to the discoveries at the Llanfechell triangle and Bryn Celli Ddu.



*Figure 107: Geophysical survey results superimposed on satellite image of the site, Penbodeistedd (Llanfechell).*

Six 30 x 30 metre grids were surveyed on the upland region of the field associated with the extant monolith. The survey was carried out on the worst day of storm Dennis which, combined with the waterlogged nature of the field and relentless rain and wind, hampered the efforts of the surveyors. Fortunately, the survey revealed several circular and sub circular anomalies, a feature of the landscape are present in all surveys carried out thus far over the three landscapes (see Figure 107). A linear heading from the southwest corner of the field to the standing stone could be the result of the earth being trodden by modern visitors to the site as the field is accessed via a stile at this corner of the field.





*Figure 108: Interpretation of anomalies following geophysical survey, Penbodeistedd (Llanfechell).*

On closer analysis of the data, it becomes clear that the majority of the anomalies that are likely to be the result of previous human interaction with the landscape, most of which may be of prehistoric date. These anomalies (see Figure 108) measure 87 metres northeast to southwest by 80.4 metres northwest to southeast and are seen as having culminated on the top of the ridge along with the monolith that sits on a small tongue of land attached to a larger flattened upland plateau. To the southeast a large curvilinear anomaly can be seen, measuring 10.6 metres in diameter, enclosed within a possible concentric linear feature which runs parallel. A series of smaller, possibly circular shaped anomalies can be seen. These measure 5.7 metres to 7.2 metres in diameter and appear to run in a southwestern to north-eastern direction towards the monolith. It is this flat upland area that has a large circular anomaly and several sub-circular shapes made up of smaller anomalies.

A large deep ditch runs east west through the centre of the field and terminates to the south of the monument, a linear anomaly in the data that links the two could show an association with the two features of the landscape. To the west of the monolith a circular anomaly can be seen, measuring 3.9m in diameter, and it is clear from the results of the data that the upland area close to the Llanfechell monolith has a number of possibly ancient features and the monolith did not stand alone in this field.

### 3D Photogrammetry: Decorated packing stone – Penbodeistedd, Llanfechell



*Figure 109: 3D photogrammetric model of Penbodeistedd packing stone.*

In 2009 the large monolith known as the Penbodeistedd stone fell over to the east after heavy rains caused the ground at the base of the standing stone to become waterlogged. The stone measures 2.5 metres in height, is 2.1 metres wide with a thickness of 0.30 metres and is rectangular in shape. The fallen monolith was assessed by Cadw and Gwynedd Archaeological Trust which noted that the base of the stone which was now exposed was tapered to a triangular point with only 70 cm of the stone being beneath the ground. On falling the point at the base had kicked up some of the pit fill and had exposed a packing stone (Smith et al. 2013. Pp 14).

The area around the standing stone was excavated and it was revealed that the large packing stone had a cup and cup and ring mark roughly pecked into its surface. The stone was removed from site and is now stored in the Ynys Môn Oriel where it was 3D modelled by the author in 2019 (see fig 109).

In 2019 a visit was arranged to Oriel Môn to 3D model some of the artefacts kept within the museum collection, notably the rock art examples recorded to have come from the island in recent memory. At least two examples were modelled – the packing stone at Penbodeistedd stone, Llanfechell and a portable cup marked stone found near Clegyrdy Bach, Talwrn. The 3D modelling of both the stones again highlighted the strengths of the technique in highlighting rock art motifs, with the cup and cup and ring marked decorations appearing clearly on both stones. The portable cup marked stone, described as a rare object for Wales (Jones, pers. corr.), was later replicated using 3D printing technology (filament printer – see Appendix). The process was successful in replicating the stone; however, the quality of the model was slightly diminished by the quality of the print, which appeared to show linear striations across its length, mainly due to the quality of filament and type of printer used. A resin printer would no doubt render a higher quality print.

## Chapter 7: Results of Excavations at The Foel



*Figure 110: Drone image of excavation atop Foel, showing relationship between monument and wider landscape. With kind permission by Owen.*

### Introduction

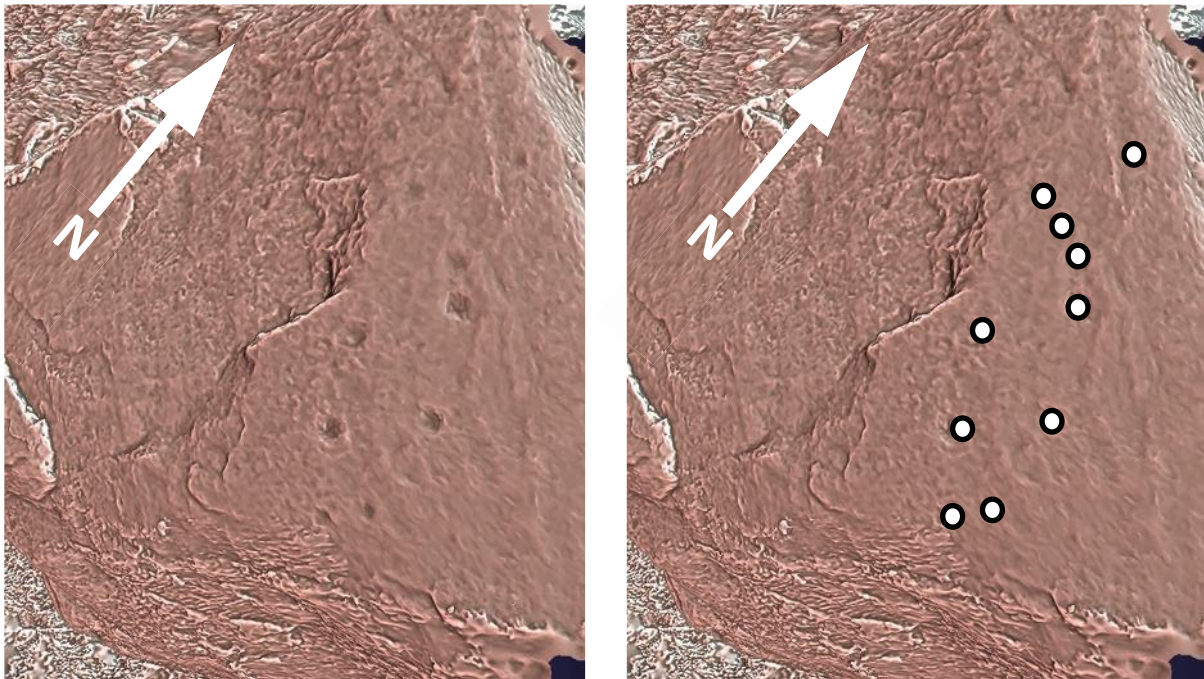
During the first COVID19 lockdown of 2020, Arwyn Owen was taking his daily government sanctioned exercise across a hilltop outside of the town of Llanerchymedd known as the Foel (the ‘bald’ or ‘barren’). The author had previously walked with Arwyn around several examples of cup marked stones at Bryn Celli Ddu after assistance with the geophysical surveys carried out as part of this project. At this time the author instructed him how to correctly identify Late Neolithic/Early Bronze Age cup mark petroglyphs within the landscape. Ash remarked that he had always found it curious that only one example of rock art was recorded in the area, and the unusual complexity of this panel should be indicative of a more intense ritual use of the landscape than previously recorded. As discussed in chapter 4, it was this initial interest that led to the photogrammetric recording and excavation detailed in this chapter.

### 3D Photogrammetry at the Foel

As Ash walked across the Foel he successfully identified two previously undiscovered rock art panels, fully photographed both and sent them to the author to create a 3D photogrammetric



model of the stones (see Appendix). It was clear that Ash had found a prehistoric site that has not been mentioned by antiquarians, archaeologist, or historians previously. Initial observations suggested that it was likely that one of the panels which was on a large free-standing boulder was once part of a larger monument and likely to be the capstone of one of the many variants of Neolithic tomb found on the island. It was also clear from early wartime aerial photographs taken in the 1940s that the large cup marked boulder had moved at least 2 metres to the east since 1945. Given these unique circumstances this site provided there was the rare opportunity to dig down into a possible megalithic tomb which had remained hidden until now.



*Figure 111: : Photogrammetric image of cup marks atop Stone 2 (left), with features highlighted (right).*

The upland outcrop known as the Foel located to the south east of the town of Llanerchymedd is largely made of Ordovician rocks interbedded with Sandstone and Conglomerate on the northern half of the upland and is represented in dark green and Mica and undifferentiated Schist known as the Central Anglesey Shear Zone type. This is the same geology as can be seen in the geological map of Bryn Celli Ddu represented in light green. A patch of alluvium made up of clay, silt, sand and gravel can be seen at the base of the uplands to the south and is represented in pale yellow and the majority of the surrounding area on which is the modern town is located is made up of Ordovician rocks interbedded with mudstone and sandstone



which is represented on the map in grey (see fig 112). To the south the Coedana complex can be seen which is represented in bright yellow and is made up of Hornfels geology (see Figure 112).

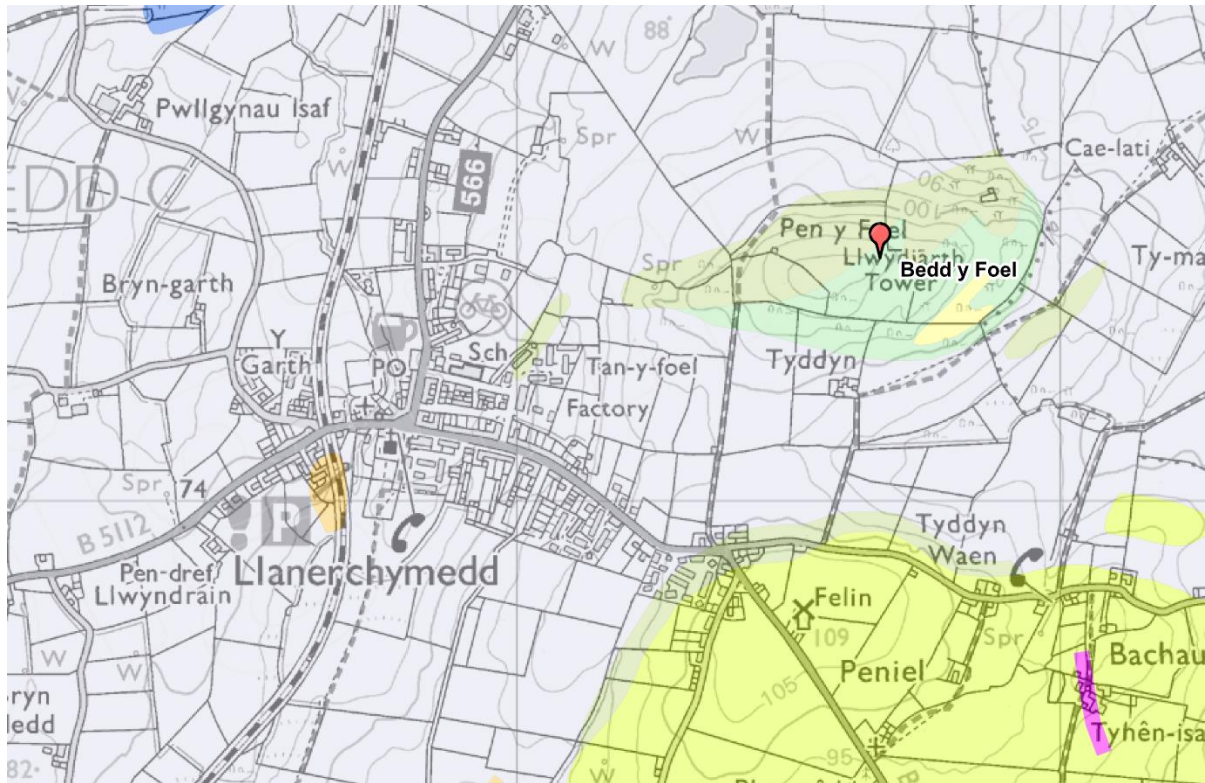


Figure 112: Geological map of the Foel study area.

## The Excavations

### Strip and Record – September 2020

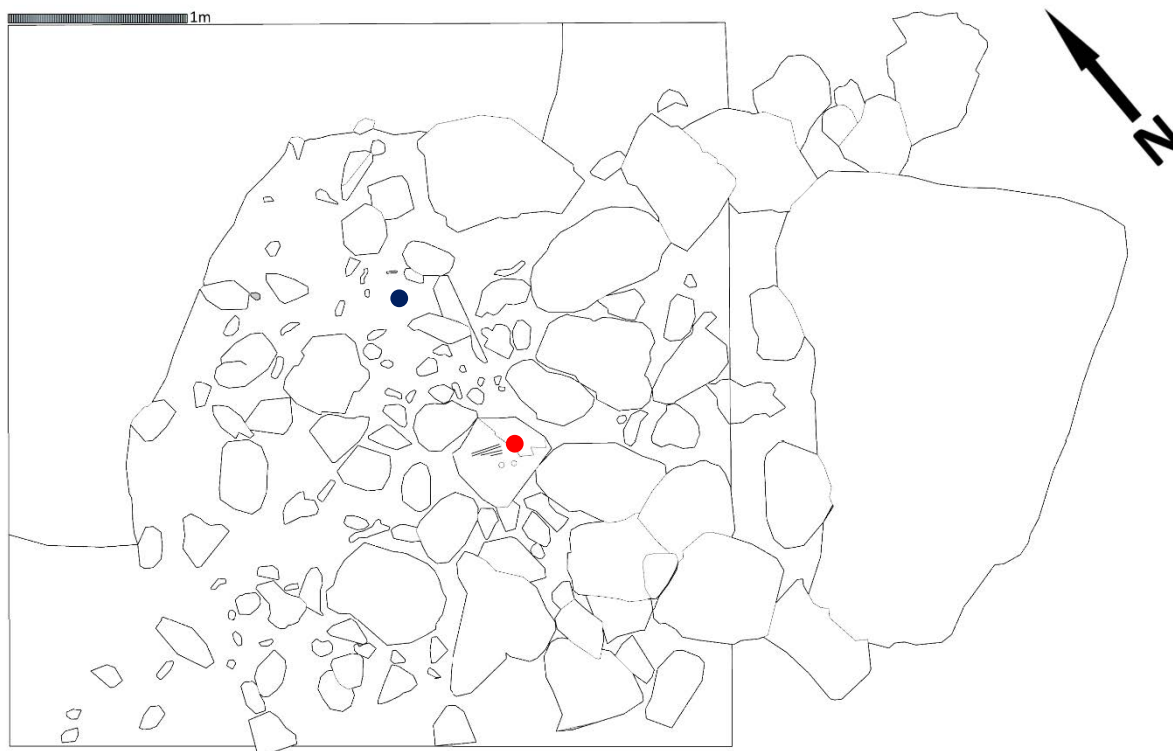
It was decided that an excavation should be carried out immediately to the west of the boulder, imaginatively titled “Stone 2” on account of it being the second rock art panel that Arwyn discovered (see Figure 114). Plans were made for the next safe opportunity when covid restrictions were lifted and a 1-week strip and record excavation was carried out to ascertain the extent of any archaeology beneath the turf layer as large seemingly dressed stones could be seen to the west of Stone 2, jutting out from the turf layer.

A four metre by four metre trench was excavated beginning of the week and immediately found another decorated stone lying close to the surface (see fig 113). The stone, consisting of a smaller piece of fire damaged stone, measured 205mm across; 240mm tall and 130mm thick has two natural bands of geology (identified as Gabbro), measuring in at 35mm and 30mm respectively, which had been further defined by humans with small lateral pick marks (see

Figure 113). By the end of the week another larger stone (see Appendix 16), measured 388mm by 454mm, and was found decorated with two ephemeral cup marks measuring 28mm across. The stone was also covered with a strange smooth patina as well as twin grooves ground into its surface running in a parallel fashion. This discovery of further rock art made it clear that a full-scale excavation must be carried out to ascertain the true prehistoric nature of the site and attempt to identify structural or artefactual evidence that could prove this clearly irreparably damaged site to be a prehistoric monument. A hollow was found in-between some of the larger stones and an endoscope was inserted into the cavity to see if a chamber could be seen. No chamber was visible, but the endoscope was inserted to a depth of approximately 1.5 metres (for example image see Appendix). The location and layout of the surface stones were fully recorded with traditional archaeological drawing techniques and aerial photographic survey (see Figure 114).



*Figure 113: Pecked modified stone, recovered during September 2021 excavations*



*Figure 114: Measured plan showing final level of strip and record excavation - September 2020. Original position of pecked stone (blue dot) and cup marked stone (red dot, with cups below) highlighted.*

Initial observations noted that the bulk of the largest stones lay to the western side of the trench, nearest Stone 2. At the time it wasn't clear whether this was a destruction layer for the tomb (given the disarticulated pieces of rock art found near the surface) or whether this is the remains of clearance cairn material. A visit by Jane Kenney of Gwynedd Archaeological Trust was also arranged at this time, who confirmed that the rock art recorded on the site was indeed genuine.

By Wednesday the trench was again resealed, with black sheeting used to cover the exposed stones underneath. This would allow for easier access of the stones when work was set to resume on site in January 2021. Unfortunately, the nature of the COVID19 outbreak delayed the work significantly, leading to an initial period of uncertainty as to when work could resume on site. Communication between the author and Ash was consistent in order to report the latest on the COVID19 situation in Wales, as the lockdown rules differed between there and England.



## Bedd Y Foel Excavation – 13<sup>th</sup> April 2021 > 14<sup>th</sup> May 2021



*Figure 115: Photo showing excavation work at Bedd y Foel site, taken 21/4/21 (with kind permission by Owen)*

Following the announcement of easement of lockdown measures in both Wales and England in early April 2021, the opportunity arose to revisit this site for further excavation into the monument itself, as well as address some of the key features observed during the strip and record the previous year. The author conducted a full-scale excavation of the site at this time, with the assistance of Arwyn Owen as a co site leader. Furthermore, the easement of restrictions allowed for volunteers to be sought both locally and from further afield. This work was filmed as part of a community engagement video showcasing the site and the heritage of the wider area by Telimôn for public broadcast on behalf of S4C (Telimôn, per comms.) but has yet to be released.

### Excavation

Following the results of the previous strip and record excavation it was decided to reopen the initial 4 metre by 4 metre trench in its entirety. Excavation work was carried out over five weeks, beginning on the 13<sup>th</sup> of April and ending on the 13<sup>th</sup> of May 2021, with the trench backfilled afterwards to protect any archaeological features and ensure that the site is safe to access as well as revert the land back to pasture. The site was coded BYF2021 for recording purposes (see Context sheets in appendix).

As excavation progressed it was hoped that the nature and character of the assumed monument would prove to be better understood. However, the scale of damage and destruction at this site meant that several questions remained unanswered. Furthermore, it is likely that parts of the monument may rest under Stone 2 which, given its weight and dimensions, proved far too difficult and dangerous to excavate with the tools and manpower available.

A small team of volunteers, consisting of historian Cameron Black, Bangor University alumni Arwyn Owen and student Sarah Saunderson, and members of the public such as Sophie Berry, Craig Harris and Gwyn Williams assisted with the excavation process. Given the nature of access to the site, the dimensions of the trench and the recent Covid pandemic, it was determined that a smaller team was necessary to complete the task.

All excavation on site was carried out using hand tools such as spades, shovels, mattocks and hand trowels, with ropes, straps and a large metal pry bar being utilised for the removal of the large stones that comprised the destruction layer. Access difficulties prevented the use of machinery on the site. Additionally, heavy machinery may have further compromised the structural integrity of the substantially damaged monument. Given the lack of a safe and secure storage location, equipment was brought to and from the site daily, with only some equipment left behind such as rubble bags and fencing erected at the end of each day's work.

## Results

The excavation revealed a total of nine contexts on the site. The first of these (Context 1) consisted of an ovoid area of dark brown soil, interspersed with a mix of stones of various sizes, alongside fragments of charcoal. It is one of the largest features recorded on the site measuring 3.22m North to South, 2.8m North East to South East and 2.5m South West to South East.

Approximately 0.1m deep another context, Context 3, is revealed. This layer, consisting of a dark purple clay, forms part of a large sunken feature, interpreted as a pit feature cut within the rock. While initial interpretation of cavities within the stones were suggestive of an undisturbed chamber, excavation identified a number of collapsed burrows and nesting material, presumably gathered by rodents living on the site in recent times.

Immediately adjacent to this context, on the western side of the trench, is Context 2, consisting of a compacted surface, made of a tightly packed orange clay and stone surface. Measuring



1.7m diagonally from the North-Western corner of the trench down to the centre (south), and 3.4m across east to west, it is possible that this feature is the remains of a cattle track observed in aerial photography of this site.

The stones within Context 1 consist predominantly of fragments of hornblende picrite and gritstone native to the site, measured between 3 to 4 cm minimum, with the largest of these stones measuring 59.4cm wide and 83.4cm long. This layer of stone failed to identify any further definitive evidence of dressed/shaped stone, given the damaged nature of the stones in this context. This layer had likely formed following the destruction of the tomb at some point post 1945, with some of the larger stones, resting along the western side of Stone 2, presumably placed there following land clearance. At a depth of approximately 0.3m the size of the stones greatly diminishes, with no large stones reported beyond Context 6.

The formation of Contexts 1, 3 and 6 is attributed to the destructive movement of Stone 2 from its original position further west. This would explain the jumbled nature of the stones present in the excavated area. Many of these stones were quite large and heavy (exceeding 1 ton) which required being carefully removed via pry-bars, wooden blocks and straps. Given the fragmentary nature of the extant remains, removal of these stones had to be done carefully as to prevent damage to any unrecorded archaeology underneath. Furthermore, the jumbled nature of the stones within Context layers 1 and 3 meant that features would be over-recorded, as to ensure that no archaeological data is lost once the stones are removed from their original positions (a full dig diary for this excavation can be found in the appendix).

#### Structural remains

Upon full excavation, the bedrock, recorded as Context 9, shows signs of having been modified at some point in the past. A small, triangular shaped chamber was identified cut out of the bedrock, the southern side appearing as a gradual slope with areas of jagged rock to the southeast. On the northern side A long hinge fracture line measuring 1.86m could be seen running across the stone in a north to south direction. The northern side contrasted greatly, with a large, raised rock face set at a steep angle. On the southern side of the rock face a small depression in the bedrock was observed, measuring 0.48m (east to west) by 0.36m (north to south). The depression was observed to align precisely with the base of a possible orthostat (see next section) and may have been modified to ensure the stability of the monument. This 'chamber' appears to have been deliberately created, as a part of the bedrock to the north-east

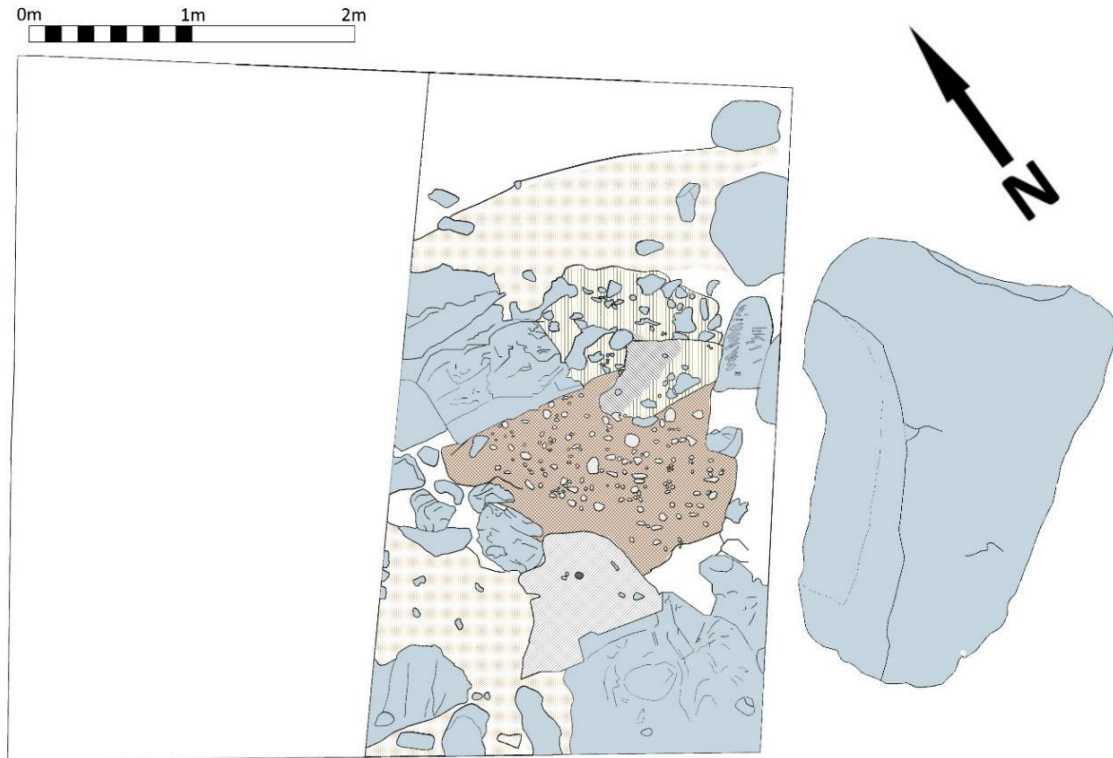
of the trench appears to have been removed – one possible theory suggests that this may have served as an entrance of some sort.

Despite the fragmentary nature of the site following its destruction, at least one piece of structural evidence appears to have survived. Within the southwestern side of the trench was identified a large fragment of hornblende picrite measuring 37cm in height, with a length of 60cm and a width of 46cm when fully exposed. Intriguingly the stone, when lifted, appears to show evidence of having a rounded and dressed base, with a pronounced lip on one edge. The stone was placed within Context 4, a small curvilinear pit cut into Context 2, measuring 85 cm North-South, 55 Cm East West and approximately 40 to 45cm deep. Around the upper base of the stone were a series of small, flat stones, at least five in total. The stones appear to have been deliberately placed beneath the lower part of the stone, as if to pack it, with one stone firmly pinned against the large stone by another. The deliberate arrangement of these stones suggests that this was a structural element, presumably associated with Stone 2 - its top having been sheared off following the destruction of the monument post-1945.



*Figure 116: Possible upright support, sheared off at base with packing stones partially disturbed.*

The fragmentary nature of the hornblende picrite on site made it impossible to reconstruct this feature – although it is likely that parts of it constituted the rubble fill of Contexts 1 and 3. It remains unclear as whether the large, cup-marked stone identified during the Strip and Record excavation the year prior may have been its upper half, or whether this was part of another



*Figure 117: Plan drawing of completed excavation showing the floor surface in brown.*

upright stone that was dislodged from its original location.

Other structural elements include a compacted floor surface, identified as Context 8. This layer, located directly underneath the decomposing organic layer of Context 7, consisted of a grey clay and small, compacted stone matrix. This feature measured 1.29 metres northeast to southwest and 2 metres northwest to southeast. It was of a distinct triangular profile, broadening towards the southeast where Stone 2 currently rests. The surface was observed as being quite firm and level when cleaned, and sticky when wet. Its composition seemed to suggest that this was an artificial feature, possibly a floor surface associated with the megalithic tomb. The majority of artefacts from the site were found placed atop this surface, which may strengthen this argument further. Only part of this floor surface was sectioned, with the



remainder left in situ for further archaeological investigation in the future. It is also possible that more of Context 8 lies further east, partially covered by Stone 2. Samples of this floor surface were taken in order to conduct environmental sampling necessary for further dating of the site.

#### Artefactual remains



*Figure 118: Fragment of long bone identified during excavation, western side of trench, of modern date.*

A total of five lithic artefacts were recovered during excavation of Context 7 and 8. Furthermore, ephemeral patches of a white, chalky material were also identified, suggestive of possible human remains. Given the acidic qualities of Anglesey's soil, no large fragments of bone were recovered and are assumed to have been lost. A small fragment of long bone, identified during the clearing of Context 3, is assumed to have been an animal, possibly the remains of livestock which often graze atop the Foel, and is of more recent date.

Excavation of Context 6 produced copious amounts of modern plastic, dating from the 1970s to 1980s. While most of these fragments were unidentifiable, at least some of them were which aided in the dating of this layer. It is unclear as to how this plastic material ended up inside the upper layers of the assumed chamber – it can only be argued that this material was being deliberately placed into the chamber while the monument was still intact or being brought in by vermin for bedding and/or food. At least some of the nests were discovered to contain fragments of plastic, assumedly sourced from the nearby dump on the Foel summit.



Figure 119: 1970's AD artifacts



## Polished quartzite rich sandstone object



*Figure 120: Fragments of object as discovered in trench, atop Context 8*

Atop Context 8, within the eastern side of the trench, were the remains of a fragmentary polished stone object. Its profile was cylindrical (oval) which, when assembled, tapered at one end. Both fragments were found separated about half a metre from each other, although it is unclear whether this was done prior to deposition or whether it was the result of the creation of the destruction layer above.

Regarding dimensions, the longest fragment measured just over 13 centimetres in length with a diameter of 4.2 centimetres at its thickest end and 2.4 centimetres at its thinnest point, weighing 227.44g. The second, shorter piece of polished stone measured 7.6 cm in length, weighing 199.74g, with diameters of 4.2 cm at its thickest end and 3.6 cm at the thinnest. The larger side of the taper fit perfectly onto the other stone item discovered earlier and it was clear that this was another piece of the same artefact.

The stone was not native to the summit of the Foel, nor did it appear. The polished stone artefact comprised of a quartz rich sandstone with large quartz crystal structures often found in geology found in the Pennines.

The material would have proven to be both too sandy and brittle to be used as any type of functional tool - such as a polished stone axe, adze or ard. Instead, this type of stone is recorded as being predominantly used in both sharpening and honing whetstones in later Bronze Age or Iron Age contexts. It is possible that this artefact is a Bronze Age addition to this Neolithic monument as Bronze Age deposits being found in Ty Newydd have given the clearly Neolithic tomb, with its lack of earlier artefactual evidence, a terminus post quem of Bronze Age date (Philips 1936, pp. 97). It is also possible that this is a polishing stone for stone axes, but this is unlikely as the hard material often used on Anglesey for polished stone axes such as the Graig Llwyd stone would destroy this artefact unless it is used for the gentle final finish of the axe. It is also possible that this item is a symbolic representation of an axe, ard or adze and was created for the sole purpose of being interred into the monument as a grave good.

The fact two parts of the same item were found over half a metre apart on the floor surface (see Figure 120) suggests that the item had been broken prior to interment and the ritual breaking of objects is an action found throughout many periods on the British Isles with some thinking that a broken item is put into a tomb to accompany the broken human into the next life. Although this artefact's identity and function has currently proven difficult to establish it is likely that this polished stone item is indeed prehistoric and dates to anywhere from the Late Neolithic if it is a symbolic representation of a tool or sceptre, to the Iron Age if it is a whetstone.



*Figure 121-Polished sandstone artifact.*

## Discussion

The artefactual, structural and rock art evidence recorded at this site, combined with its prominent location, confirmed that the features excavated atop the Foel were indeed part of a destroyed megalithic tomb, one of the many variants of Neolithic megalithic monument found across the Isle of Anglesey. Sadly, the fragmentary nature of the monument makes classification impossible, and as such only a broad definition can be given at present.

This assessment is only further strengthened by the discovery of lithic artefacts atop of what appears to be a chamber floor surface, comparable to other monuments recorded on Anglesey. Although limited, these are comparable to other disturbed sites recorded elsewhere on Anglesey, such as Ty Newydd.

The findings of the excavation itself formed the basis of limited community engagement surrounding the archaeology of the site, its location and its wider importance. During filming

for the Telimôn programme the local primary school, Ysgol Gymuned Llanerchymedd, came to visit the excavation, as it was visible from the school itself, located on the western slopes of the Foel. It is hoped that the results of these findings may be used in local community engagement led by Arwyn Owen and the author at some point in the near future – including a local talk, alongside a small heritage display in the village railway station (Owen, per. comms).

## Chapter 8: Bryn Celli Ddu: Discussion

### Introduction

This chapter discusses issues raised by the results from Bryn Celli Ddu. Critically. The quality of these results were subsequently confirmed by the excavation of a large multi-period Early Bronze Age monument, another potential cairn, and a Grooved Ware pit group; these will be discussed first. The chapter will then move on to consider the discovery of children's ear bones at Bryn Celli Ddu and other megalithic monuments in the region; proceeding then to place the monument in its wider context, before finishing with a note on the Iron Age results present in the geophysics.

### Geophysical surveys carried out at Bryn Celli Ddu

The results from the magnetometry and resistivity surveys across the landscape surrounding the passage tomb at Bryn Celli Ddu revealed a number of exciting and previously unknown aspects of the prehistoric use of this site. The results will be discussed in this section in an attempt to decipher the anomalies in the geophysical data and fully explain how the data has been interpreted.

The first thing that is apparent from the data is that the landscape at Bryn Celli Ddu has seen large scale, multi-period occupation throughout prehistory. Beginning in the Mesolithic with the pine posts at the entrance to Bryn Celli Ddu, discovered by Hemp (1931), this was followed by Neolithic and Bronze Age re-use of Bryn Celli Ddu as a burial site. Extensive, presumably Iron Age, settlement found on the geophysical survey data that surrounds the burial site to the north, west and south, complete the picture. This re-use or potential continued use has been observed at a number of other Neolithic and Iron Age sites across the British Isles and these sites will be used as comparisons for us to better understand the findings at Bryn Celli Ddu.

The first survey was the strip of resistivity and magnetometry that was carried out across the ridge to the south of the reconstructed monument. Excavations that occurred subsequent to this survey 'ground-truthed' the results of the geophysics, and proved the utility of the techniques on the geology of Bryn Celli Ddu. This ridge that was the focus of the first campaign of geophysics runs parallel to the Afon Braint, and a further tomb known as Bryn Celli Ddu Bach was already known to have once been extant upon this ridge from antiquarian accounts. The results of the surveys revealed at least a further two, possibly three, burial mounds becoming increasingly small and less complex as we move south along the ridge. Bryn Celli Ddu Bach is a double ring-ditch burial of likely Early Bronze Age date that had no passage, and was likely built up in phases over time, culminating in the collared urn burial found just outside the outermost ring. The smaller burials revealed in the survey data appear to consist of a single ring of stones which is possibly a kerb to contain the mound material and a single anomaly in the centre of the circle, which is likely a cist burial. Excavation would be required to prove these theories but the clarity of the anomaly highlighted leaves little need for speculation as to the form of the monument.



## Bryn Celli Ddu Bach



*Figure 122: Excavations taking place at Bryn Celli Ddu Bach 2018..*

The ring burial some 40 metres to the south of the standing passage tomb at Bryn Celli Ddu, known as Bryn Celli Ddu Bach ('Little Mound in the Dark Grove'), was excavated at the same time as the geophysical surveys were carried out in the surrounding landscape as part of this research project (See Figure 122). The results give us a deep insight into the longevity of use of the site, both ritually and geographically. The burial landscape and monuments were continuously developed, and modified, along the raised ridge that runs parallel to the Afon Braint to the east, and the cup marked outcrop to the west.

The excavation was started in 2017 by Manchester Metropolitan University, University of Central Lancashire and CADW (Edwards and Griffiths, unpublished). A 10 metre by 2-metre-long trench was placed over the ring-shaped anomaly that was imaged in the resistivity data and the dig uncovered a curving line of the ring cairn, identified by several large stones. Also identified were the remnants of the cairn material used on the monument, in the form of

impacted gravel and river cobbles, along with a modern plastic waterpipe which cut through the eastern side of the monument.

A second trench was also excavated at the far south of the ridge as it tapered further down the valley where the resistivity results from this project had identified a sub circular anomaly. The resulting excavation revealed 5 pits cut into the sand gravel ridge. The first pit examined, Pit 104, was sub circular in shape with a diameter of 1.1 by 0.9 metres and went to the depth of half a metre. The pit contained five deliberate layers of stratigraphy with a lining of sandy clay, a deep fill of charcoal, a clay layer and a large slab of blue schist capping the deep charcoal base layer from the upper fill layers. Artefacts recovered from 104 included 19 sherds of Grooved Ware pottery dating this pit to the Neolithic period and several small flint blades (*ibid*).

The second pit, Pit 107, consisted of an oval feature measuring 0.9 by 0.6 metres in diameter, at a depth of 0.4 metres. Within the fill of the pit was identified two stratigraphic layers, again separated by a large blue schist stone. Within these layers was discovered a number of prehistoric pottery fragments, consisting of 21 Grooved Ware pottery sherds from a minimum of two pots (Edwards and Griffiths, unpublished report). Pit 109 was also an oval measuring in at 0.6 by 0.5 metres with a depth of 0.24 metres and again had two distinct layers separated by a large flat stone but only one single flint blade was recovered (*ibid*). Pit 112 measured 0.65 x 0.55 metres and only went to a depth of 0.2 of a metre with only one fill and no artefacts were found (Edwards and Griffiths, unpublished report).

A third pit, Pit 114, measured 0.8 by 0.9 metres and was sub circular in shape and bowl like in profile, descending to a depth of 0.4 metres. It contained four distinct fills with the upper fill of silty clay producing 35 sherds of Grooved Ware, all probably from the same vessel, the next sandy context containing no artefacts. Deeper down, a layer of clay material was unearthed which contained the central piece of a broken polished stone, identified as a fragment of Graig Lwyd axe. All 36 pottery sherds (likely from 6 pots) recovered from this pit group are comparable with finds made at Early Neolithic settlement and henge landscape known as Parc Bryn Cegin near Bangor on the Welsh mainland (*ibid*).

A team, again consisting of students and lecturers from the University of Central Lancashire and Manchester Metropolitan University, returned to the site in 2018 and 2019 to continue the excavation work conducted at Bryn Celli Ddu Bach previously. A 24 by 22 metre trench was

opened over the cairn in four quadrants with a central baulk. During the work, evidence for previous excavation work by Newall (excavated in the 19<sup>th</sup> century) was found. Beneath this was discovered the full extent of the ring cairn, comprising of a large outer kerb of stones with a secondary, smaller ring of stones nearer the centre. Finds from this layer included a clay tobacco pipe of modern date with numerous flint flakes below this, of prehistoric date (Edwards and Griffiths, unpublished report). It was found that the outer ring of the kerb was sat atop a soil layer that had formed over the inner kerb, a layer which had spread outwards over time, and the space between the two rings had not been filled. This layer was found to contain charcoal fragments and a number of flint flakes. This evidence shows that the inner ring predates the outer with the monument forming from the inside out. A pit containing an urned burial was found inside of the cairn material within the inner ring with stones having been removed to allow for its interment (see Figure 123).

The cairn was in relatively good condition aside from some slight disturbance by the water pipe cutting across its surface. The more extensive damage was notably caused by Newall's trenching of the site. However, it was southwestern quadrant of the burial that saw the best preservation overall, with this part of the site produced a significant amount of bone fragments, pottery sherds, flint flakes and a collared urn burial (Edwards and Griffiths, unpublished report). In the centre of the two concentric stone ring cairns was found a stone lined cist, different to the one recorded by Newall as it was found further west close to the centre of the circle. Remarkably, the cist still had an undisturbed capstone atop it, and had not been disturbed by Newall's work. It is presumed that Newall's cist was above all the aforementioned material and had been completely removed during his earlier excavation of the site. This stone cist had been sunk into a large, hand dug pit beforehand. Upon removal of the large capstone the cist was found to be completely empty without any traces of burnt bone or human remains. It is assumed that this primary cist burial once contained an un-cremated child and without the carbonisation of the bone from the burning process the skeleton was destroyed by the acidic content of the residual soil (*ibid*).

To conclude the excavated ring ditch burial at Bryn Celli Ddu Bach was not only an impressive site but also that the finds recovered within shed much light on the use of the ridge at Bryn Celli Ddu and our knowledge of Early Bronze Age burials on Anglesey as a whole. The uncovered outer kerb also appeared to have stones chosen for their distinct colourings which were likely placed in a pattern of different colours to heighten the aesthetic of the tomb. The

overall size and shape and typology of the tomb at Bryn Celli Ddu Bach is most comparable with the multiple ring burial at Bedd Branwen (Lynch 1971), a tomb often written about due to its connections with a famous, possibly at least late prehistoric in date, Welsh legend (Mabinogion, 1976). Similarities betwixt the findings within the burial contexts at Bedd Branwen and Bryn Celli Ddu Bach are striking and a full report on the data recovered from the Bedd Branwen excavation is included in the next section of this thesis. The empty cist that was unearthed from a primary context in the centre of the tomb possibly alludes to the use of child burials in primary contexts which may well be part of a ritual that is linked to the child's ear bone in the pit at Bryn Celli Ddu and this unusual Early Bronze Age ritual will be further explored in the following section.



*Figure 123: Collared urn in situ at Bryn Celli Ddu Bach.*

## Relics of a Darkening Past

*'It must be wondered whether the child remains at the Druids circle are similarly the evidence of sacrifice like the slain child at Woodhenge in Wiltshire, relics of a darkening past that the visitor to a stone circle should be aware of, informing him that he may be standing not in a scientific observatory or contemplative chapel but in a macabre enclosure of death where people, fearful in a precarious world, offered fire and human beings in return for their own safe-keeping. Today's sunshine may delude the modern mind.'*

*-Aubrey Burl (2000)*

This statement by Burl regarding the internment of the remains of children in central locations within the Druids Circle proposes that the proliferation of both whole and partial child burials within the centre of monuments is sacrificial in origin. As detailed in the literature review, a single juvenile human ear bone was discovered in the very centre of the monument. This deposition was deliberate, as a pit had been dug especially for this bone. Suggestions that the survival of the ear-bones is due to differential decomposition with the rest of the body completely rotting away is unlikely as teeth would also have been preserved to the same extent as the ear ossicles (see Figure 124).



*Figure 124: Ear bones recovered from Bedd Branwen excavations by Lynch (1971) now held at Storiol, Bangor.*

It is now known that this macabre discovery at the centre of the Druid's Circle is not the first case of ear bones being found in the centre of monuments, or full and partial child remains as primary deposits, placed usually in the centre prior to the monument's construction. This section will discuss the potential for sacrifice and evidence for the ritual interment of the dead



at these sites, as well as further attempt to understand the possible motivations or reasonings behind said burial rites.

Over 300 passage tombs are known across the British Isles. Excavations have provided a wealth of data as to the internment of the dead and certain rituals, such as symbolic art and ritual grave goods such as flint and pottery. Furthermore, evidence of ritual performed within the chamber is seen with the strange ‘soup’ that had been cooked within the main chamber at Barclodiad y Gawres (Lynch 1991, pp. 73). One element that seems to be a constant in many passage tombs across the Atlantic fringe is the excarnation and processing of the body. Excarnation is the process of leaving the body out to decompose, with evidence for this rite being seen in missing fingers and toes when it comes to the estimation of the minimum number of individuals, and this is presumed to be the extremities being scavenged by small predators such as rodents and carrion birds. Evidence for excarnation at Neolithic sites can be found across the British Isles at sites such as West Kennet long barrow where evidence for both excarnation and inhumation was found, Hazleton North where evidence of weathering on the bones was identified to be indicative of the excarnation rite and at Giants Hill 2 where the bones had been rearranged following deposition (Beckett & Robb, 2006). This being said it is clear that the body has either been partially covered or elevated as it has not been entirely devoured by larger predators such as wolves and bears. This rite is seen across cultures, especially those with little access to wood and where permafrost or mountains do not allow for burial, such as cultures in the Himalayas, where the practice is still conducted to this day (Shank 2019). The difference in this case is that the body is usually processed by being carved up prior to the excarnation, before being completely devoured by the vultures that have become accustomed to this “feeding” regime. In the case of the passage tombs of northern and western Europe it would appear that the excarnation process allows for partial decomposition, then the body is further processed, with evidence of de-fleshing from cut marks on bones at the points where ligaments connected the skeletal elements of the body. A number of small stone cists next to the comparable passage tombs at Carrowkeel in Ireland are thought to be temporary “coffins” for the decomposition of the body itself (Kador et. al 2018).

Following the excarnation and de-fleshing of the corpse the bones are then transferred to the tomb and begin to be mixed in with the communal dead within. This is highly evident in the earlier forms of chambered tomb across the British Isles such as West Kennet long barrow, with the bones taking a journey towards the final chamber, a chamber which often only contains

skulls and long bones, the most recognisable of the skeletal element that can identify the remains to be human in origin (Pearson 1999, pp. 16). It has been hypothesized that this movement is a journey from death to becoming part of the communal ancestral dead (Pearson 1999). The dead person must go on a final journey before becoming one of the ancestors and this is one of the reasons that the passage tombs have been described as a ‘house for the dead’ and the continued journey into the realm of the ancestors does not necessarily occur at the point of death (*ibid*).

These processes allude to a complex belief system regarding ancestor worship and the weathering on some bones suggest that the bones are sometimes removed from the tomb and brought outside for some ritualised purpose and then placed back in the tomb. Possible evidence for this can be seen in the architectural feature, known as the *Troues Des Souls* or ‘Hole for Souls’, that can be seen at Bryn Yr Hen Bobl, a feature generally found on *allée courvete* tombs of the Parisian and Black Sea regions (Hoskin et. al. 2002) but can even be found as far afield as Russia (Trifonov et. al. 2019). This feature being discussed is usually consistent of a flat slab with several perforations through it. This stone is later erected to block the area between the passage and the chamber, prohibiting full bodied access to the tomb. Instead, the perforations would have acted as a ‘letterbox’ to feed the remains through and presumably retrieve them for ritualistic purposes (Hoskin et. al. 2002).

The passage tomb at Bryn Celli Ddu is of the simple form as described in the literature review and as was discovered by Hemp during his excavation the inside of both the chamber and passage were strewn with the crumbling bones of the dead, the extent of which is not known as Hemp did not excavate the site fully down to the natural subsoil. It is possible that the bodies were placed in the tomb, decomposed and were distributed over the years by animals. This was found at Pant Y Saer, but evidence for excarnation can be found in passage tombs and long barrows throughout the British Isles. Most interestingly is the single ear bone in the pit at the centre of the tomb - this was clearly placed into the centre of the henge and stone circle prior to the construction of the passage and chamber (see chapter 2). Following this, the area would have been likely covered by cairn material once the tomb was constructed. Today the area has been opened to allow light into the chamber, to prevent visitors injuring themselves in a pitch-black passage tomb.

The most curious aspect of this very specific ritual is that it does not appear in isolation in the archaeological record of the Neolithic tombs of North Wales and both children's ear bones and complete and partial child burials have been discovered at the centre of a number of monuments including the Druids Circle, Penmaenmawr, Conwy (Griffiths 1960, pp. 335-6), a Bronze Age barrow at Brenig, Conwy (Lynch et. al. 1973) and Bedd Branwen, Llantrisant, Anglesey (Lynch 1971). The following sections will outline the data retrieved from excavation at these sites along with the circumstances in which the ear bones were uncovered.

### Bedd Branwen, Llantrisant

*“Oh son of God,” she said “woe that I was ever born. Two good islands have been laid waste because of me!” She gives a mighty sigh, and with that her heart breaks. And they make a four-sided grave for her and bury her there on the banks of the Alaw.*

*- The legend of the death of Branwen from the Second Branch of the Mabinogi (Davies, 2007. Pp 22)*

And so, the story ends the tragic life and legend of Queen Branwen, dying from a broken heart at the brutal loss of her entire family and later buried by the Alaw. The tomb of Branwen, Bedd Branwen, can indeed be found by the River Alaw on a slightly raised upland plateau at the bottom of a wide-open valley in the parish of Llanbabo (see Figure 125). Clearly the association with the legend foretold in the Mabinogi hints at the age and ritual importance of this site. The name of this site can also be dated back to at least several 17<sup>th</sup> century accounts within the locality of Llantrisant and it remains likely that these are the earliest recorded documentation of Bedd Branwen being known as a burial ground in historic memory (Lynch, 1971. Pp 12).



*Figure 125: Aerial view of Bedd Branwen (centre-left) in relation to landscape. River Alaw is seen flowing to the south of the site. With kind permission of Owen.*

The site was recorded by Sir Richard Colt Hoare in a letter to Cambro-Briton, following his visit in 1813 after the re-discovery of the site by the farmer from Glanalaw while he searched for building material (Lynch 1971, pp. 14). On clearing back the turf of the mound he discovered the ‘carnedd’, and on removing the cairn material he unearthed a cist made up of large stone slabs which, on the removal of the capstone, he found an inverted urn containing burnt human remains. Word travelled fast about this discovery from the parson of the parish to another local clergyman, both antiquarians, and the association with the location of this site and the legend of Branwen was not lost upon them. Fortunately, Colt Hoare was on the island at this time and described the tumulus as a venerable deposit of considerable circuit (Lynch, 1971), no doubt referencing the large outer ring. In plan this ring is very similar to the double-ringed cairn at Bryn Celli Ddu Bach. The Early Bronze Age collared urn that the farmer had found within the cist was almost entirely complete, with only superficial chipping, stood to over 35 cm in height, and was decorated with a dotted pattern. Colt Hoare also mentions that the urn was presented to him with the cremated remains within it, clearly reinterred by the farmer or clergymen (Lynch, 1971. Pp 14). For a selection of urns excavated see Figure 126.

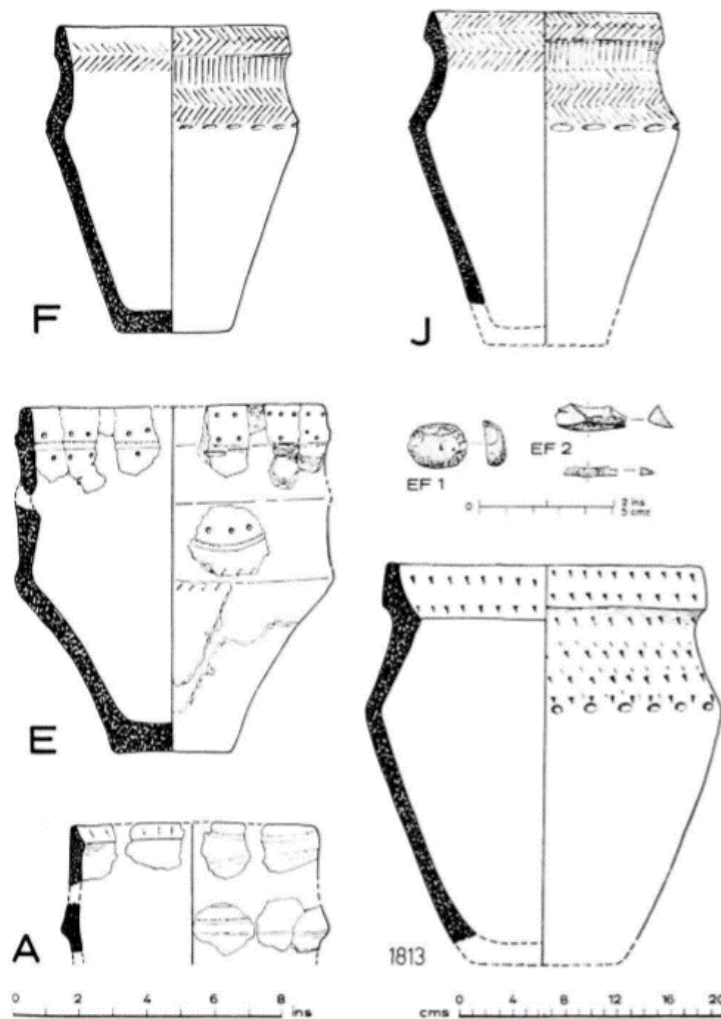


Figure 126: Selection of urns and vessels recovered from Bedd Branwen excavation. Pot J (top left) was found to contain the cremated ear bones (Lynch 1971, 33).

The urn found its way into the hands of Richard Llwyd of Chester who presented the artefact to the British Museum in 1834. Stanley and Way (Lynch, 1971. Pp 14) republished Colt Hoare's letter in 1868 and produced an accurate drawing of the urn (Colt Hoare had only provided a rough sketch). While examining the urn prior to drawing, the pair found a fragment of skull and several sherds of beaker pottery wrapped in a piece of paper, in amongst the burnt human remains within the pot. 'Portions of Branwen's urn sent to the British Museum. *Cam. Briton*' was written upon the paper, presumably by Llwyd (although Lynch claims it was written by Colt Hoare, which is unlikely as he did not send the urn to the British Museum) and had previously gone unrecorded (Lynch, 1971. Pp 14).

On reconstruction, the beaker was found to be of the Late Southern beaker type with rare saltire pattern, made with a fine comb being stamped into the unfired surface of the pot (Lynch, 1971. Pp 14). This pattern, although uncommon, has been recorded before within a cist excavated at



Rhosbeirio on Anglesey (Lynch 1991, pp.125-6). It was this piece of Beaker pottery that inspired the large-scale excavation of the site at Bedd Branwen by the University College of North Wales in the summer of 1967 which aimed to establish the relationship between these pieces of pottery and their context within the tomb, with the aim of understanding the different phases of the tomb's construction (Lynch 1971, pp. 15).

Prior to excavation the tomb could only be described as a low grass mound with an unusual feature - a large split boulder that stands in the centre. A few of the kerbstones could be seen in the side of the tomb, emerging from the grass layer, and a hollow in the centre was thought to be the results of antiquarian intervention. Upon excavation however, this was found to be an architectural feature of this stone lined ring cairn. The first feature to be excavated was a hollow area to the east of the monument that was found to contain three stones in a row, and deposits of charcoal perceived to be the remains of an upright post, likely burnt in situ, alongside two flint flakes and five pieces of possible beaker pottery, not of the same type found a century earlier. Two further postholes were found outside of this hollow and the stratigraphic sequence showed that the cairn itself had been built above the hollow, demonstrating it to be the earliest phase of the site, and possibly the primary burial ahead of the construction of the large stone ring monument (*ibid*, pp. 16-17).

The next feature to be excavated was the curious central monolith, which consisted of a large conglomerate boulder of glacial origin, 1.20 metres high and 1.30 metres across. This was found to sit within a circular steep sided pit. At the southwest corner of the trench a deposit of cremated bone, consisting of skull and long bone fragments, was found. Within the fill of the stone-hole was found three flint flakes and one piece of either Food Vessel or Collared Urn. The stratigraphic context suggested that this stone was erected at the same time as the eastern hollow was opened and might have even come from that location. This is interesting, as the standing stone at the centre of Bryn Celli Ddu is thought to have been from earlier phases of the monument, with the tomb built around this stone. It is possible that this is the case with the split monolith at Bedd Branwen (*ibid*, pp.17).

Bedd Branwen was visited as part of this doctoral project and a 3D photogrammetric model was created of the central split monolith. The 3D model (see Figure 127) suggests the presence of a possible cup in the top surface of the stone that had not previously been recorded. However, this could be misleading, as the stone is formed of conglomerate; typically a stone type with

many pebbles held within a gritty matrix. It is possible therefore that this depression is a pebble cast that has been worn and smoothed by wind and rain over the millennia in its exposed position stood atop the tomb. Spoken word legend claims the split was caused by a lightning strike (Owen, pers. corr.) but similar folktales have been seen at other sites with split stones with little evidence for this phenomenon and is just as likely that the stone was split in attempt to recycle it for building material.



*Figure 127: 3D photogrammetric model of the standing stone at Bedd Branwen.*

To the west of the central stone was a small circular shaft which truncated the stone hole. Stratigraphically, this would suggest that the shaft was cut the surface that existed before the barrow but terminates at the stone hole, proving that the stone was a standing stone erected some time before the construction of the barrow itself. Lynch (1971, pp. 18) likens the stone now to the standing stones across the island with shorter examples of standing stones being found to the south west of Bryn Celli Ddu and two of similar size at the summit of Mynydd Mwyn Mawr, an area upland to the north of the Foel, Llanerchymedd which, within its viewshed, it was noted that these stones were observed as potentially aligning to a natural spring further along the ridge (Dickson and Tram 2014, pp. 101).

On excavation beneath the cairn ring the first of the urn burials were found. This is when the finds from the excavation began to hint at the complex ritual taking place there comparable with the unusual evidence and features recorded at both Bryn Celli Ddu and, more recently,

Bryn Celli Ddu Bach. The first of these pots to be discovered were labelled L, M and C – all of which were excavated from pits which would have been beneath the ring cairn had it not been for the 19<sup>th</sup> century destruction of this part of the site. Pots J and H were found in separate cists with pot J having its on capstone. Pot L and Pot M were found within a vertical sided pits and formed a pair and were buried in pits 23 cm apart and were the only two urn burials that were placed the right side up with all other urns being inverted (*ibid*, pp. 22).

Pot L was half full of burnt bones and a small accessory cup which is not an uncommon find in collared urns with a similar urn burial being excavated from Whitehall barrow in Darwen, Lancashire (Dixon 2003). The other half of pot L was purposefully filled with earth and part of a bronze awl. This type of urn burial is not uncommon, and it is believed that the burnt human remains represent a single adult. This contrasts with the contents of Pot M which did not contain a burial but had two petrous temporal ear bones from a new-born infant that had been placed in the bottom of this pot before burial. This evidence for two distinct rituals at two separate sites on Anglesey are clearly indicative of the deliberate use of curated juvenile ear bones placed in specific contexts within tombs dated to the Neolithic and, in the case of Bedd Branwen, the Bronze Age (*ibid*, pp. 24).

The same phenomenon was also found in Pot J which was an inverted urn burial containing earth, charcoal and a pair of children's ear bones (see Figure 126). This pot was inverted and also placed within its own pit, covered with a dark earth fill with the bottom of the pot slightly extruded above the surface at the time of burial. The base of this pot was later found to have been crushed at some point. The same again was found in Pot E with the pot mainly containing dark earth with a single infant's ear bone in the bottom of the pot. Pot K was found inverted and surrounded by a setting of stones in the area of later disturbance, so it was difficult for the context with the ring cairn to be established. The contents of Pot K were similar to both pots M & J in the respect that it was not a burial urn like the others which contained mainly bones and this pot contained brown earth with a single scrap of bone dropped into the bottom which was not an ear bone but was of similar size (*ibid*, pp. 26).

Other notable finds came from Pot C, which contained the cremated remains of one adult and a single jet bead, as well as Pot H which was almost completely full of cremated bone of a single adult. Pathological analysis of the bones suggested that the adult had lived with osteoarthritis during their later life. The remains of Pot H were accompanied by an unburnt necklace

of jet and amber beads which had been placed atop the cremation remains. In amongst the bones was also found a bone bead and a bone knife pommel with no sign of burning on either so had been placed in along with the human remains after the cremation process. Lynch (*ibid*, pp. 27) that the western quadrant of the tomb remains unexcavated and from the evidence found across the site it is likely that further urn burials survive beneath the ring cairn.

### Treiorwerth, Bodedern

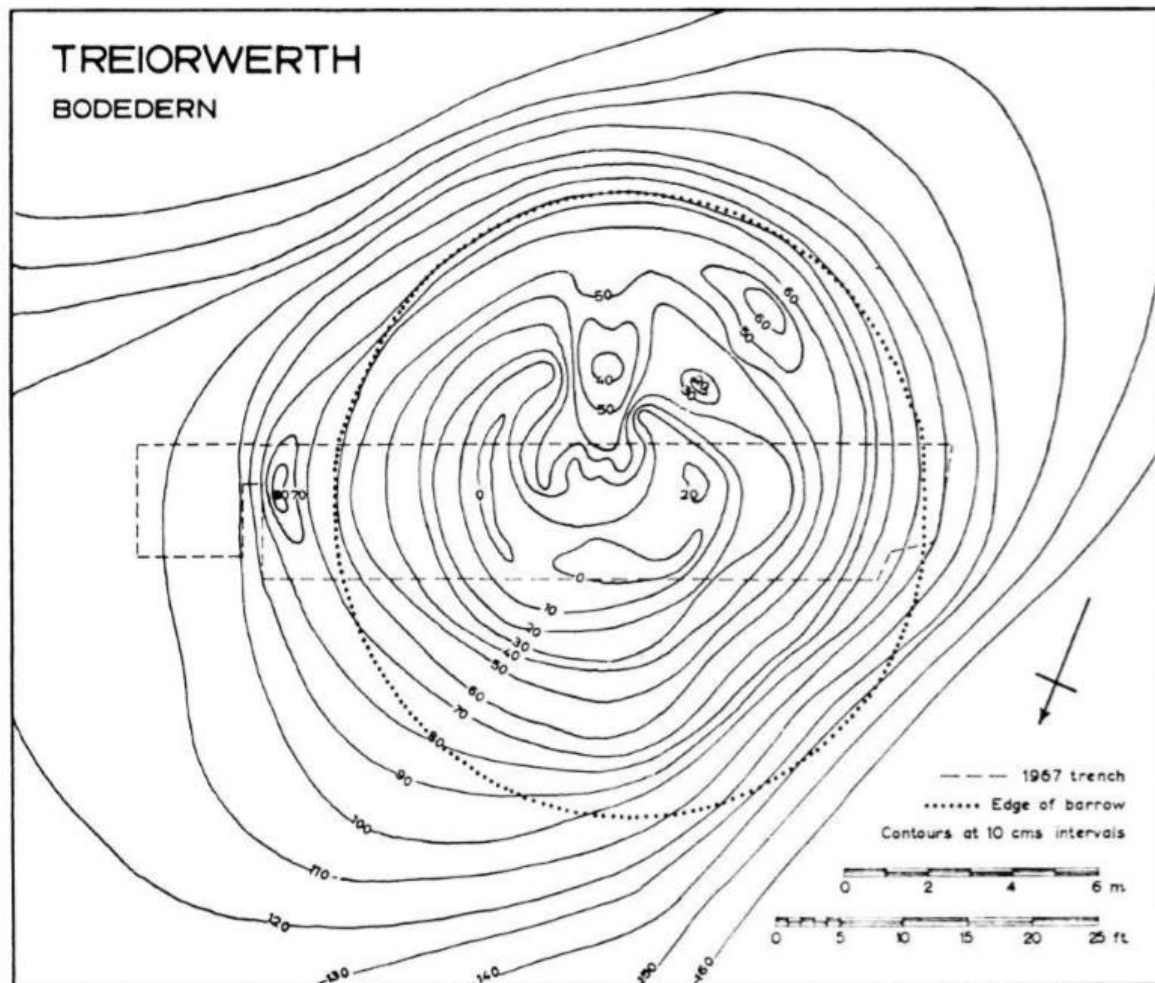


Fig. 13. Treiorwerth: contour plan of site before excavation.

Figure 128: Contour image of Treiorwerth kerbed tomb (Lynch 1971, 39).

As part of the same project carried out by University College of North Wales another burial known as Treiorwerth was also excavated in the summer of 1968. Historical sources record that the site was recorded in 1870, following excavations that were recorded by the Cambrian Archaeological Association. The burial had been previously disturbed with none of the finds being in situ. Cremation burials and dark earth was found across the site and at least 4 urns as well as a sherd of Roman mortaria. Unfortunately, these finds have since been lost as Mrs King

of Presaddfed threw them out of the window, thinking they were rubbish, sometime after 1875 (Lynch 1971, pp. 37).

The site (see Figure 128) sits atop a ridge of Ordovician bedrock which overlooks Llyn Llywenan, a natural lake approximately 2.1km east of the village of Bodedern, Anglesey. The monument itself is a small mound measuring 13.5 metres in diameter and just over 1 metre in height, it is noted that no other burials are known in the immediate surrounding landscape, but a barbed and tanged flint arrowhead and Bronze Age battle-axe were recorded as being discovered on lands to the south of Treiorwerth house. Further to the north is the prehistoric standing stone at Tregwehelydd (Llanfigael – 3km Northwest) and Bedd Branwen even further north (see previous; 4.5km North-North-East). The barrow was found to be constructed of a cairn of small glacial boulders which was capped by a layer of yellow/orange clay 50 cm deep with a line of flat stones surviving to the west and an uneven, rough line of larger stones which was interpreted as the remnants of the kerb (*ibid*, pp. 42).

The discovery of primary burials included a complete burnt young adult found to the north north-east of the centre of the barrow, in such a compact hole and it is suggested that the remains had been deposited in some sort of bag which had since decomposed fully. One of the vessels, Pot 6 (see Figure 129), was an enlarged food vessel found inverted and sat upon the bedrock in a small deep hole, this was beneath a sealed layer of charcoal and despite being crushed and badly damaged was identified stratigraphically as a primary deposit. The contents consisted of mainly charcoal with small fragments of skull, teeth crowns along with a pair of ear bones which identified the child to be about 6 years old at the point of death. Lynch (1971, pp 44) mentions the undeniable link between the pottery types and children ear bone deposits found at Bedd Branwen. A further five urn burials were discovered all of which were completely full of cremated human remains with little other notable artefacts. Several cremated burials without urns were also discovered - one of the individuals excavated, a young adult, showed signs of tuberculosis within the spine (*ibid*, pp. 46), a condition which may have contributed to their shortened lifespan. Three stone lined cists had been inserted into the top of the mound which had caused much damage to the earlier primary deposits, with all cists being made of long slabs of stone. Cist 1 showing no signs of human remains, Cist 2 again had no human remains but contained a flint pebble and Cist 3 was so small it is suggested that it was made for an infant but again no human remains were uncovered. These cists were all roughly aligned in an east west direction, and, in the absence of grave goods, it was suggested that these



cists could be Early Christian in origin - comparable to several Early Christian cist graves excavated at a small cemetery site at Arfryn nearby Bodedern (*ibid*, pp. 48) a site which was fully excavated some several decades later (Hedges 2016).

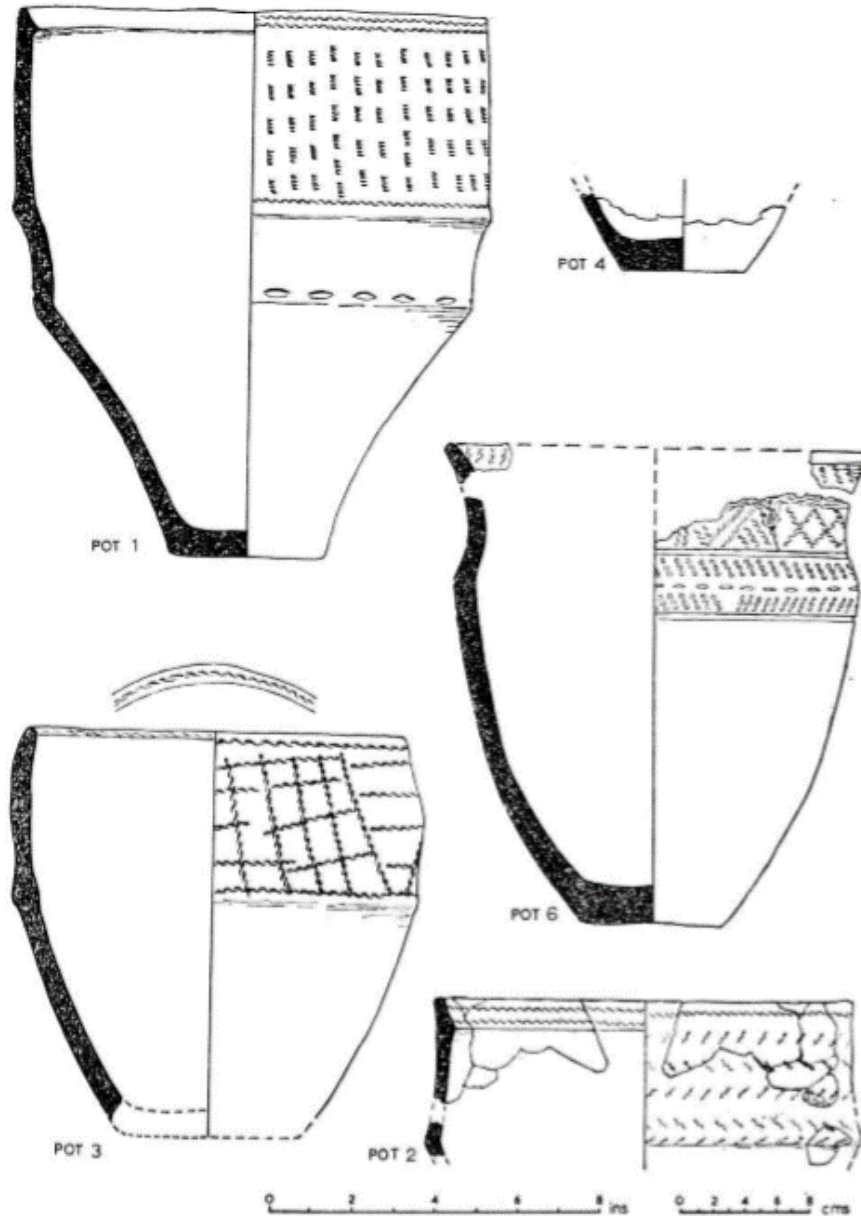


Figure 129: Selection of Bronze Age pottery recorded at Treiorwerth site. Pot 6 (centre right) was found to contain human ear bones of a young child, no more than 6 years old (Lynch 1971, 51).

The re-use of Bronze Age tombs and ritual monuments in the Early Medieval period can be seen in all corners of the British Isles. The archaeological and historical evidence on Anglesey supports this tradition, with several ecclesiastical placenames referring to an earlier, prehistoric ritual monument now since lost (i.e., Llechgynfarwy – Smith, 2003. pp 33) or constructed near

an existing monument within the landscape (Llanddyfnan standing stone - located a short distance to the southwest of the parish church – Smith, 2003. pp 33). At Afryn, Bodedern the early Christian cemetery aforementioned was constructed atop a Bronze Age settlement, showing that both domestic and ritual sites were used in later periods (Hedges 2016).

It has become clear from the discoveries from these excavations that the primary deposition of children's ear bones in either pit in the case of Bryn Celli Ddu, within pottery urns and accessory vessels such as can be seen in three separate cases at Bedd Branwen, as well as one case at Treiorwerth, that it is clear that this is a specific ritual tradition that appears to be taking place at this time. The dates between the construction of Bryn Celli Ddu and Bedd Branwen and Treiorwerth over at least 400 years spanning the Late Neolithic and Early Bronze Age periods, indicative of a tight chronology between this group of monuments (*ibid*, pp. 57). This tradition is not just found on the island and excavations carried out by Lynch over 2 Bronze Age cemeteries in the Brenig valley, 5 miles north of Cerriydrudion in North Central Wales found further evidence of this ritual (see next section).

### Brenig, Denbighshire

The excavations at Brenig were carried out in the 1960's ahead of the construction of a reservoir at the site. A variety of different types of Bronze Age burial was found in the area including traditional barrow type burial, the ring cairns that we have become familiar with at Bryn Celli Ddu Bach, Bedd Branwen and Treiorwerth. It was observed that one of these ring cairns may have been a ceremonial focus of this prehistoric cemetery, with a new type of monument, dubbed a marker cairn, found to be the earliest monument constructed at the site. This unique type of barrow which was also given the unique name site 47 on account on the wealth of monuments across the site. Site 47 itself lay at the edge of the funerary and ritual complex and was on top of a high promontory with a shallow ditch having been dug across the hill and the material piled into a small mound. The edge of the mound was surrounded by a raised kerb which had been consolidated the cairn material as it settled. When the mound was excavated, it was found to have been used on two separate occasions during its life. The lack of human remains recovered during the excavation lead the excavation team to conclude that the marker cairn was never used as a burial monument. It was noted that the position of the marker cairn on the high spur of land commanded views right down the Clwyd valley and had beautiful vistas on all sides that included a view of the cemetery itself. Radiocarbon dates were taken

from charcoal deposits from the ground surface that gave a date of 2100 BC (Lynch et. al. 1973).

Four monuments were excavated that are described as classic barrows with all the mounds being defined by post-holes which would have held upright stakes which held a turf mound. Furthermore, three of the four were identified as possibly the remains of a wooden mortuary house that had burnt down before the mound was constructed. The fourth, Burial 42, was found to have a ditch around the base of the mound. The phases of construction began with the marking of the perimeter of the enclosure with the stake circle followed by the construction of the mortuary house in the centre which was then burnt in situ. This was proceeded by the digging of the ditch and then the barrow mound was raised over the burnt remains of the mortuary house out to the ditch. Charcoal from one of the posts used in the construction of the mortuary house was radiocarbon dated to  $1660 \pm 70$  BC (*ibid*). At a later point the barrow and silted up ditch was capped with a clay layer which appears to be a feature of these barrows at Brenig. Burial 40 was of a similar type with the burnt mortuary house at its centre - a square structure which measured 1.3 metres by 1.1 metre when fully excavated. Radiocarbon dates recovered from the charcoal from this structure were found to have been dated to 1470 and 1380 BC, showing a continuing tradition of wooden structures being erected and then possibly deliberately burnt in the centre of these burial monuments over a couple of centuries. On excavation below this monument a pit containing charcoal was found beneath, the radiocarbon dates proved this pit to be Mesolithic with a date of  $5700 \pm 80$  BC (*ibid*). This is broadly comparable with Bryn Celli Ddu's landscape, as the earliest phase of occupation of this site is at least Mesolithic in date.

The most prominent barrow in the landscape of the Brenig is also the only burial to have a historic name, known as Boncyn Arian (which roughly translates to either money mound, silver mound or brass mound). Following the work on site, the barrow was later designated Barrow 45 as part of the excavations. It is this burial that is the most relevant to this research with a number of comparable features to sites mentioned as part of this study, in particular Bryn Celli Ddu, Bryn Celli Ddu Bach and Bedd Branwen - including the deposition of infants' ear bones and is the most complex burial structure of all the burials excavated on the Brenig. The site consisted of a ditch followed by a concentric ring of timbers with circular stone wall 18 upright boulders or slate slabs with smaller stones filling in the gaps within this and it is suggested that the 18 upright stones might have started life as a stone circle before the site became a burial

mound which is reminiscent of the stone circle buried beneath the cairn of the passage tomb at Bryn Celli Ddu. To the northwest of the circle two large boulders were set 1.50 metres from each other, a feature described by those recording the site as a presumed entrance with the gap between the stones having later been clumsily filled with large, horizontal stones. Within the stone wall enclosure, a series of three concentric posthole rings were recorded. Although the centre of the tomb had been robbed out in antiquity, it was clear that there was once a timber mortuary house that had been burned as was found at the majority of barrows excavated at this site. Burnt timbers were radiocarbon dated from what was left of the house which provided a date of  $1620 \pm 100$  BC (*ibid*).

Four cremation burials were found closely associated with the wall feature which was likely sticking out from above the mound when these burials, 2 in pits and 2 in urns were incorporated into the monument. The first urn to be found was an inverted collared urn containing the bones of a young adult and the second smaller urn contained two molars and the ear bones of an infant and it was this burial that was the first time this ritual was recorded outside of Anglesey. Radiocarbon dates from these burials gave a date of 1670 BC and were likely added to the burial roughly 50 years after its original construction (*ibid*).

The excavation team then turned their attentions to the ring cairn and what had been perceived as the ritual centre of the cemetery. The cairn comprised of two concentric stone rings with an earth core and covering of small stones with a circle of large timbers within which is tentatively speculated to be possible “totem” poles. This ring was dated to 1680 BC and the ritual foci for the site was deduced to be the interior face of the ring ditch wall, with a few ritual pits dug into the earth up against the stones. A cremation inhumation as found just north of centre of the ring ditch. A thin layer of charcoal was found to cover the entirety of the site, and this is suggested to be the remains of sacrifice victims scattered after the pyre, but this is pure speculation.

## Children of the Grave

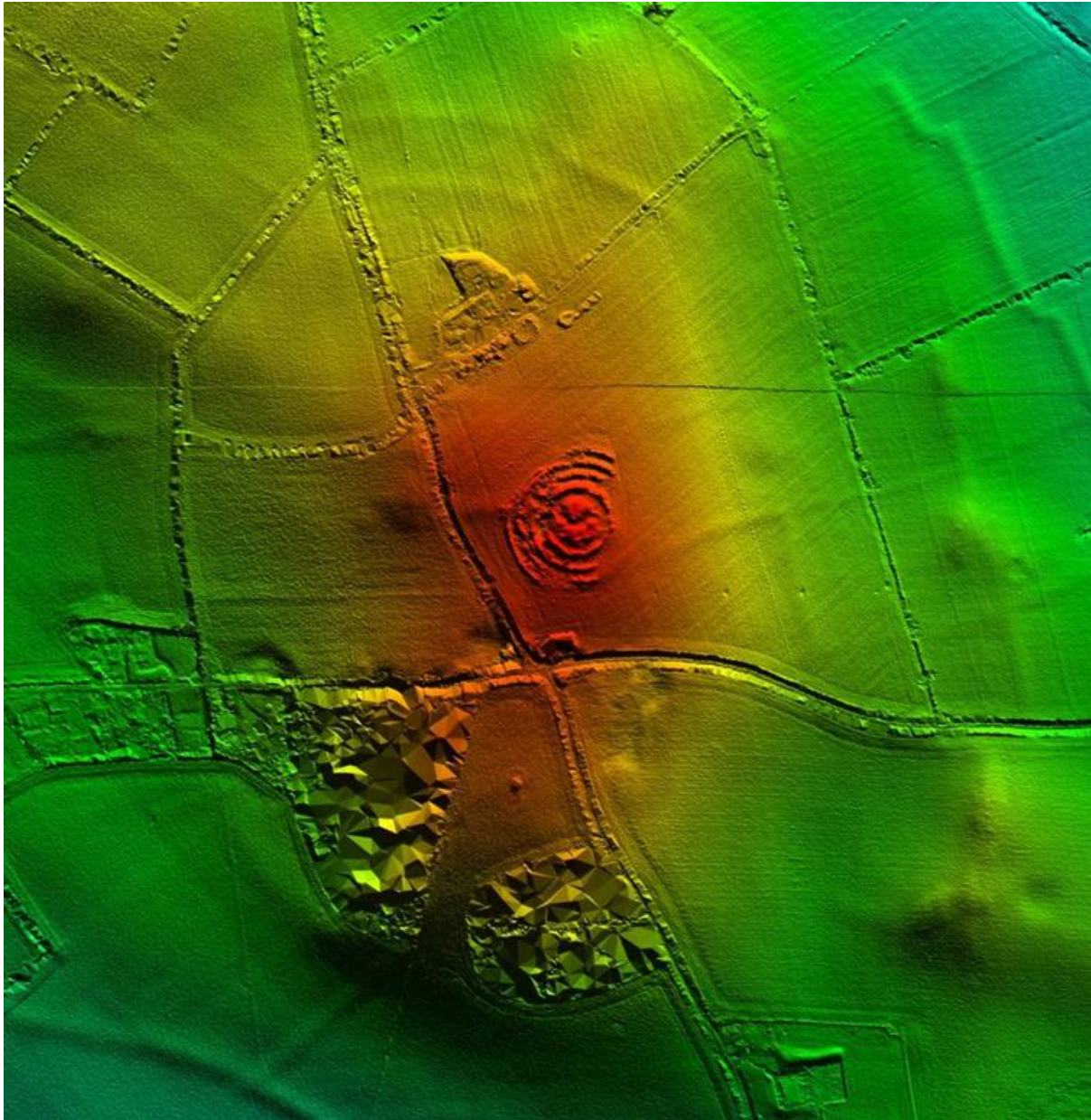


*Figure 130: Excavation of infant burial at Tlachtga, Co. Meath (Ireland – Mullally 2016).*

The primary burial of children in Early Bronze Age monuments and the selective deposition of curated remains, such as ear bones in primary contexts, clearly provide evidence for a specific ritual. However the motivation for this practice, and the circumstances under which these artefacts and features arrive at these prehistoric sites is less clear. Archaeologists are usually reticent when it comes to the mention of sacrifice, as the term was somewhat overused by antiquarians, in the political context of the British Empire, to emphasize the brutal existence of the primitive tribes before the arrival of the ‘civilised’ Romans. Despite this, it is easy to see how the circumstances to which these children were buried could be seen as possibly sacrificial in origin. Other sites outside of North Wales include those such as The Hill of Ward also known as Tlachtga (Earthspear) and the Hill of Tara in County Meath, Ireland. Both sites had young children at the base of deep ditches and in the case of Tlachtga covered in large, flat stones (Mullally 2016). Both of these sites are multi period in date, with Tlachtga being a large 150 metre diameter multivallate ring ditch and the Hill of Tara having several ancient monuments nearby, including a passage tomb known as the ‘Mound of the Hostages’, a double henge with timber circles, a standing stone as well as several other ritual sites. Tlachtga has been recorded



as being used as a ritual site from the Bronze Age into the Early Christian period (Mullaly 2016), whereas Tara is recorded as beginning from the Neolithic at least (Moriarty 2007 1-14). Both sites are aligned to the autumnal equinox with this data having recently given Tlachtga the grandiose title of the birthplace of Halloween.



*Figure 131: LiDAR image of Tlachtga, Co. Meath (Mullally 2016).*

It is not just within the Irish Sea zone that child burials were seemingly afforded more complex ritual practices in the Early Bronze Age, such as at Barns Farm in Fife, Scotland, where three small pits were discovered containing the enamel crowns from several children. The excavators concluded that these pits contained the decapitated heads of children and suggested that they

were spoils of war. However, it is also just as likely that this was the curation of particular body parts in Ireland (Watkins, 1985. Pp 80-82) as we see on Anglesey.

Excavations at an Early Bronze Age barrow at Amesbury in Wessex found the remains of two infants that had been buried in the crouched position on top of oxen skulls. The author suggests that the butchered nature of the oxen and the deliberate placement of the children on top of these makes it appropriate to question whether the deaths of the children were natural but this is speculative as the oxen could be evidence for funerary feasting (McLaren, 2012. Pp 182).

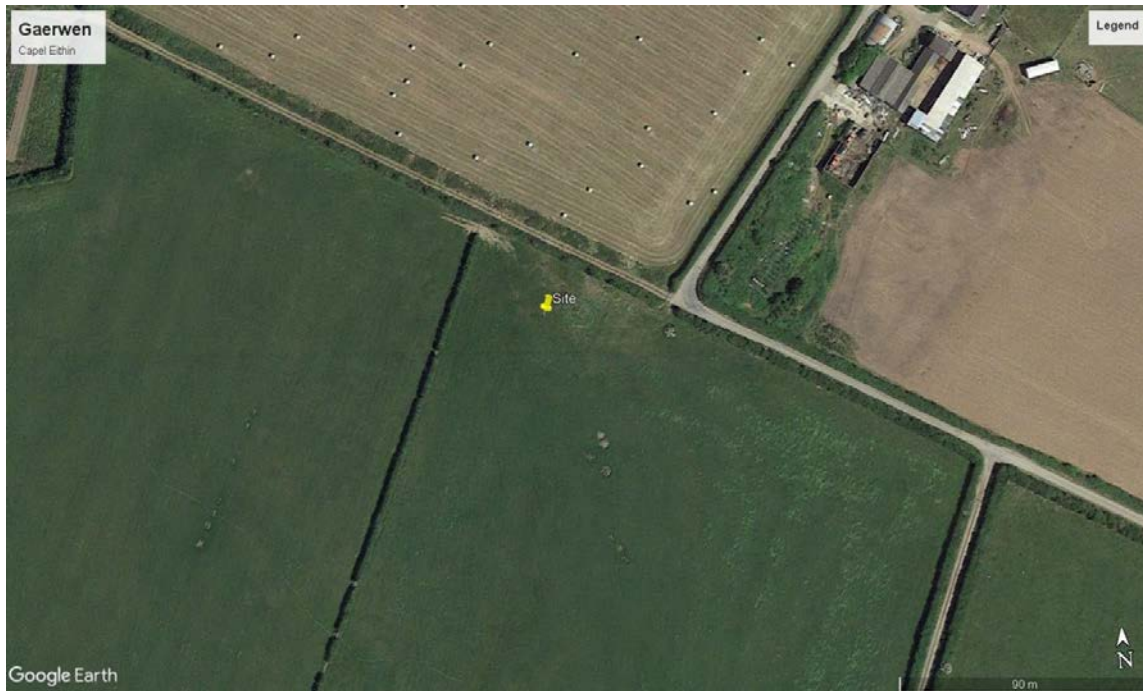
A small number of cases outside of North Wales show evidence for the retention of certain body parts similar to the cases of the infant's ear bones. It may be suggested that these remains may have been curated over a period of time, kept within the society as relics with a possibility that the interment of these reliquaries along with a body may transform the buried individual into one of the ancestors. A case like this was found at Rockbourne Down in Hampshire (Piggott & Piggott 1947, pp. 157-158) where a broken pot was excavated that contained the single bone of an infant and the vertebrae of a Pike next to a crouched burial - interpreted by the excavators as a possible shaman's grave (McLaren 2012, pp. 199).

Another double burial of two babies aged 2-5 months were found dismembered and disarticulated in pits alongside a collared urn at Winterbourne Steepleton in Dorset (Atkinson & Brailsford 1951, pp. 1-24). Many of these unusual, and in this case macabre, burial circumstances are associated with collared urns, as at Bedd Branwen and Treoirwerth. Between 2,200 BC and 1,200 BC this particular pottery type was in use alongside the continued tradition of using complete or partial child remains in burials, as well as the more standard cremation and inhumation burials (Lynch, 1971). The curious conditions of the burials of these infants and children may have a more innocent origin, with the child dying of natural causes and the remains being venerated above all others without the need for killing. A child burial at Doune, Perthshire was found with a votive battle axe-head made of quartz rich sandstone, a grave good indicating high status (McLaren 2012, pp. 71). It could be that this high status afforded to children has been mistaken for dark sacrifice. Burrow (2011, pp 129) discounts theories of sacrifice, and believes that the funeral of a child was offered special significance. The child being interred at the centre of these burials sites indicated importance, and gives examples of an urned child burial at the centre of St Donats tomb in Glamorgan. This theory is just as likely as 'sacrifice'. What is clear is that the use of the body of young children, or curated pieces of

child skeleton, were offered as part of ancient rites and traditions that are evident throughout the north and west of the British Isles. Future excavations over burial sites dating to the Late Neolithic and Early Bronze Age in these regions should emphasize the significance of any child burials found within, and further cases must exist in the archives of previous excavations.

## Sites Comparable with Bryn Celli Ddu

### Capel Eithin



*Figure 132: Satellite image of Capel Eithin, with approximate location of site marked with yellow pin (centre).*

The upland ridge on which this burial was sited was definitely a focus for the burial of the dead and the fact that the ridge follows the direction of the solstice aligned passage of the passage tomb is not lost on the researchers. It would appear that, although the specific treatment of the dead changed from the Neolithic to the Early Bronze Age, certain aspects such as the alignment with celestial events and the use of upland areas continued. The use of upland areas for Early Bronze Age burials can also be seen at the burial ground known as Capel Eithin near Gaerwen which is sited on a low promontory (see Figure 132), below the crest of a ridge, with views across the mainland mountains of Gwynedd (which the Bryn Celli Ddu tombs run parallel to) up to the mountains on the Llyn Peninsula. This site is built upon an outcrop of green schist and is surrounded by the floodplains of Malltraeth Marsh (White & Smith 1999, pp. 21-41).

The site was excavated over several seasons, with the first excavation in 1978 and later excavations carried out between 1980-1 (*ibid*). These excavations revealed a multi-period site dating between the late Neolithic to the Early Medieval period of which we will only be focusing on the Early Bronze Age history of the site. Excavations uncovered 4 rock cut pits which contained Grooved ware pottery and a flint knife dated to the Neolithic and Early Bronze Age and a number of urn cremations which is comparable to the collared urn discovered at the edge of Bryn Celli Ddu Bach (White, 1980. Pp 15-28). Radiocarbon dates for the Neolithic phase were obtained from the remains of wooden stakes found within the postholes closely associated with the pit groups with the Bronze Age cemetery clearly representing a second phase of use upon the ridge. Furthermore, evidence of a triple ditched feature enclosing the upland area of the site, likely of Iron Age or Post Medieval date, and a rectangular walled structure of possible Roman or Romano-British origin (thought to be a temple or signal station) was found showing possible continued use of the site into the historic period (White, 1980. Pp 24).

The pottery finds from the pits on the site included sherds of Grooved ware, Peterborough ware, Early Bronze Age beaker and Collared Urn alongside flint tools with at least one of the pits having been used for cooking based on its contents. This represents an unusual domestic use of what appears to be a burial ground. Whilst this might be linked to rituals around the cooking of a variety of species within the cruciform passage tomb at Barclodiad y Gawres, this is speculative and other evidence found suggests that the site may have been settled in the earlier Neolithic prior to its use for burial. A cairn with a defined kerb was also uncovered on the site which is comparable to the finds on the ridge at Bryn Celli Ddu made with the magnetometer, particularly the anomaly that is now partially covered by the cow water trough and clearly shows individual stones making up a defined kerb (White & Smith, 1999. Pp 38-42).

The 15 urn burials discovered at Capel Eithin were closely associated with 16 charcoal filled pits. These pits represent a distinct group which was heavily disturbed by a post medieval field boundary that was cut through, damaging a number of the urns. One of the urn burials was placed in a cist with no evidence of a mound, the remainder being inverted and placed in pits, two of which were capped with stone slabs. The placing of the urns upside down within the pits is not at all uncommon of urn burials of this type.



It has been suggested that the inversion of urns represents an inverted world of the dead. These can be linked to the rare footprint carvings which can be seen at the Calderstones in Liverpool, where it is thought that these footprint petroglyphs represent the feet of the ancestors walking on the underside of our feet in an inverted realm of death. However, such thoughts on the specifics of any ritual from this period can only be regarded as speculation (White & Smith, 1999, pp 53-58).

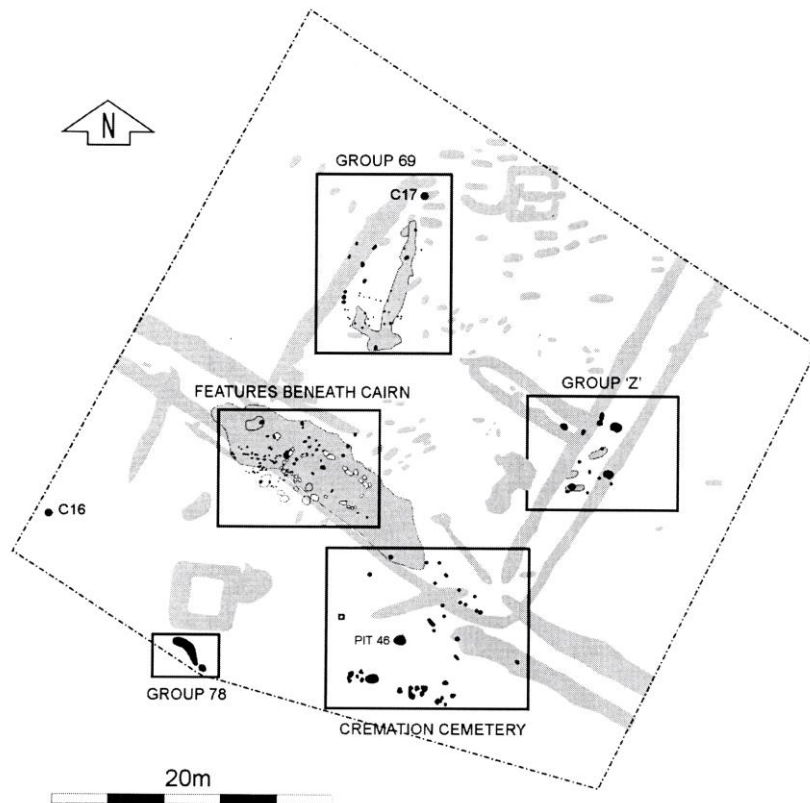


Figure 133: Measured plan of Capel Eithin, Gaerwen, showing Bronze Age features (White and Smith 1999, pp. 30).

The evidence found at Capel Eithin shows a continuity of burial activity from the earlier parts of the Neolithic period into the Early Bronze Age. The site then develops into what is likely a defended settlement in the Iron Age, followed by its abandonment and the later erection of either a temple site or signal station of the Roman period (White and Smith 1999). The longevity of use of these sites can be seen across the islands off the western coast of mainland Britain, and the masses of ancient remains found on the island begs the question as to whether they were more heavily settled than the mainland, or whether the archaeological remains have been better preserved on the islands.



## Iron Age Settlement at Bryn Celli Ddu

One of the most surprising finds from the magnetometry surveys carried out over the landscape surrounding Bryn Celli Ddu is the extent of the Iron Age settlement that can be seen in the anomalies. Several sub circular anomalies observed in the survey data are possibly indicative of roundhouse settlement around the sites. These manifest as a circular ditch anomaly which will be the drainage ditch that will collect rainwater that drips down from the conical thatched roof and redirect it away from the roundhouse to ensure that the interior space within the roundhouse stays dry. Single points of high and low readings within the imagery data can indicate the post holes that would have held the supporting timbers and the outer circle anomaly tends to have a break in it which would indicate the doorway in and out of the structure. One tell-tale sign of an anomaly being a roundhouse structure is the magnetic response in the centre of the circle. When clay is burned the microscopic iron particles within the clay all point magnetic north, a strange phenomenon which manifests as a strong magnetic response in the magnetometry data. This anomaly within the circle is evidence of the hearth fire in the centre of the structure and when all of these features are visible, we can be confident in our understanding that these circular anomalies are houses rather than the circular tombs seen closer the ridge on which Bryn Celli Ddu is situated.

Comparable evidence from large scale surveys of Iron Age settlements and Hill forts across the UK has identified many roundhouse structures that were subsequently excavated and positively identified, such as the large-scale surveys carried out across the impressive hillforts of Dorset such as Maiden Castle, Hod Hill, Badbury Rings and Hambleden Hill (Stewart and Russel 2017) and closer to home with excavations carried out at Parc Cybi on Holyhead (Kenney et al. 2020) and Wylfa close to Cemaes Bay on Anglesey (2018).

Alongside the circular and subcircular roundhouse anomalies can be seen a number of long linear anomalies that criss cross the landscape surrounding Bryn Celli Ddu to the south, west and north. These anomalies are indicative of co-axial Iron Age field boundaries and are a staple of the countryside of the British Isles with the boundaries being particularly visible surrounding Castell Bryn Gwyn and can be seen in satellite imagery surrounding sites such as Glan Gors at Llangwyllog (Owen 2020, per comms.). The LiDAR of Bryn Celli Ddu clearly shows the parallel linear lines of the Medieval ridge and furrow plough marks across the landscape, and it is clear that these ridge and furrow pass over the top of the linear anomalies that are the Iron Age field systems. This shows that the previous boundaries predate the Medieval ploughing

and along with the close association with the roundhouse anomalies, provides further evidence for the Late Prehistoric date of these linear anomalies.

Unfortunately, things are not so easy to date on the Isle of Anglesey as the roundhouse tradition had a much longer life on the island in comparison to other parts of the British Isles with the earliest roundhouses appearing in the Late Bronze Age at Arfryn at Bodedern (Hedges 2016) all the way into the Romano British period at Lligwy near Moelfre (Baynes 1908), Mynydd Bodafon (Waddington 2013, pp. 142-3; see Appendix Caer Leb near Llandaniel Fab (*ibid*, pp. 146-7) with the early Medieval period seen at Pant Y Saer near Benllech (Philips 1934), although this has since been disputed (Waddington 2013). The longevity of the use of roundhouse structures on Anglesey does make it difficult to try to date these anomalies from magnetometry data alone. As always, the excavation of dateable finds from each individual structure would be required to establish a chronology of the roundhouse settlement at Bryn Celli Ddu. Fortunately, at least six roundhouse structures have been identified with trial trenching being carried out over one of the structures at the site of the Primary school, known as Cae Bont Ysgol, across the road from the fields that house the Bryn Celli Ddu (see Cae Bont yr Ysgol section). The stone built outer wall was uncovered along with the hearth fire and pottery sherds (VCP) dated to the Late Iron Age were found. Unfortunately, the roundhouse structure was only uncovered and not fully excavated at that time - as such the chronology of the structures itself is unknown. Regardless these excavations do reveal that the landscape was settled and in use up to the end of the prehistoric period (Edmonds & Thomas, 1990. Pp 26-27).

The two notable roundhouse anomalies are highlighted in the results with the clear classic form of a small roundhouse found in close association with a co-axial field boundary in field 7 and the unusual double concentric structure that seem directly incorporated into a field boundary close the Afon Braint in field 3. A comparable structure can be seen on the mainland in the Snowdonia Mountain range at a site called Bryn Y Castell (Fort on the Hill). This site consists of a pear-shaped, stone-built enclosure measuring roughly 40 x 25 metres with a cobbled yard and a single roundhouse made up of two concentric rings similar as to what can be found in field 3 at Bryn Celli Ddu. Excavation revealed a large number of debris associated with smelting and forging of iron and dateable evidence suggests that the site was in use from the 1<sup>st</sup> century BC through to the 1<sup>st</sup> century AD (Cunliffe, 1974. Pp 300-301). A Late Iron Age date aligns with the Cae Bont Ysgol roundhouse, which from the LiDAR and magnetometry

data is directly linked to the roundhouses found in the magnetometry data by the linear field boundaries.

From this evidence we have established that the most educated guess as to the date of the settlement at Bryn Celli Ddu is somewhere in the Late Iron Age although this is speculative, and the evidence obtained through the geophysical survey data could be representative of a developed Iron Age settlement for which the dates from the other houses could be anywhere from the Late Bronze Age through to the Early Medieval. Excavation is required to establish a chronology for this settlement, and this will be undertaken in a future project. What can be said for the site is that it was first used in the Mesolithic period, likely for ritual purposes, and that the sacred element of the site saw development into the Early Neolithic with the Peterborough Ware pits and throughout the Late Neolithic and the Early Bronze Age period with a henge, stone circles, passage tombs, ring ditch burials, barrows and cup and ring rock art. The focus of the site then shifts from ritual use to settlement with the development of a possible Late Iron Age settlement. This longevity and change in use of this landscape is interesting: based on the literature review it is known that the tombs at Bryn Celli Ddu and Bryn Celli Ddu Bach were standing long into the modern periods and must have been clearly visible in the landscape when an Iron Age community was constructing the settlement.

# Chapter 9:

## Bedd y Foel: Discussion

### Introduction

The excavation at Bedd Y Foel discovered evidence for prehistoric activity and, despite the ruinous nature of the site, is a find of both local, national, and international importance. This site is important because completely undiscovered tombs of this type are rare, especially within a landscape such as the Foel on Anglesey, with the surrounding area having seen antiquarian investigations since the early 1700's. Indeed, the work by Hugh Hughes (see The Foel section in this study, pp. 82-93) was recorded in the Yellow Book of Dyfrydog (Hughes, 1766).

Despite the almost complete destruction of the tomb a number of key features were identifiable, such as the stump of the upright, still in its posthole with packing stones and the clearly defined man-made floor surface that was laid in the pit that had been dug into the bedrock ahead of the tomb's construction. Along with the living memory accounts given by the locals visiting the site, a phase of events was established for the tombs destruction in the 1970's and the architectural remnants of the tomb itself give us some clues as to what type of tomb this monument might have been. This section will analyse the evidence from the excavation that is detailed in the results section of this thesis and will look at comparable excavated sites from the island which share elements from the findings at Bedd Y Foel.

Of particular interest is the fact that all examples of 'rock art' panels that were recorded could only be found on a particular type of stone from the region (hornblende picrite). Despite the easily workable nature of the other examples of bedrock near the summit, it appears as though the stones chosen for decoration with cup marks were part of a selective process, possibly aided by the stones sparkling mineral properties. This is also reflected in the standing monuments within the landscape as the capstone at Maen Chwyf; the standing stones at Mynydd Mwyn Mawr and Coedana; and a further example at Llanbadrig Church (Windley et. al. 1998) are all made of this particular stone. Hornblende Picrite is geologically specific to only a few areas of Anglesey – that is Llanerchymedd and the immediate surrounding areas to the north, as well as a small outcrop near Llanbadrig.

## Megalithic Tombs Comparable to Bedd y Foel

### Pant y Saer, Tynyngogl



*Figure 134: Pant y Saer chambered tomb near Benllech, Anglesey. Viewed from the Northeast.*

The first comparable site to be analysed against Bedd Y Foel is the standing chambered tomb known as Pant Y Saer (see Figure 134) which sits one mile from the northern point of Red Wharf Bay outside of the village of Tynyngogl. Comparisons with this site began as the floor surface was lifted during the latter parts of the excavation atop Bedd y Foel. It was becoming clear that a pit had been deliberately created in the natural bedrock itself which accommodated the clay and stone floor surface, and a similar architectural feature was also recorded at Pant Y Saer (Scott, 1933, pp 185) towards the east.



The tomb consists of massive slabs of limestones sitting atop a limestone plateau and stands just over 90 metres above sea level. It has views of the Snowdonia Mountain range to the east and the Great Orme to the south. The tomb was excavated by Scott in the 1930's and his first assessment describes the remains of the tomb as having pieces of the badly weathered limestone crumbling from the capstone, with the remains of a dirt mound surrounding the tomb that came to 76 centimetres above the limestone plateau on which the tomb was raised (Scott 1933, pp. 185). The impressive 20-ton capstone block is supported by the north and south

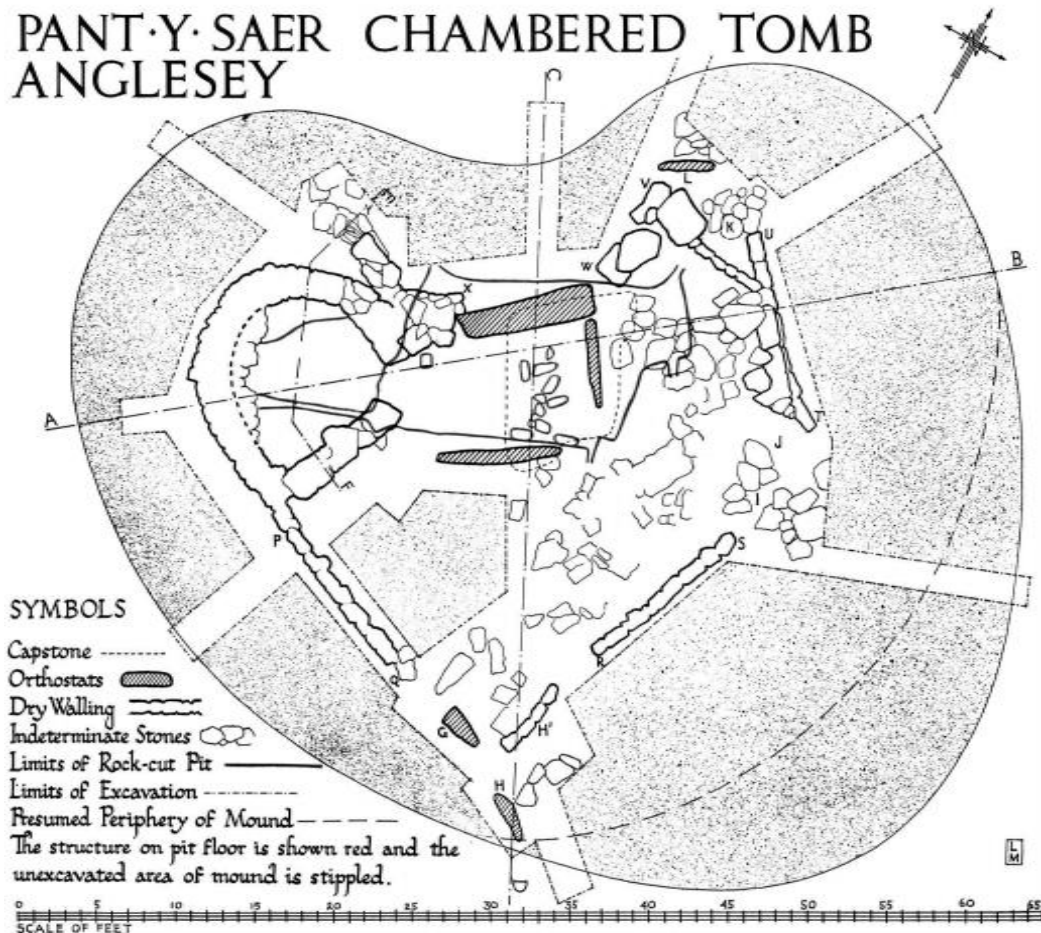


Figure 135: Plan of Pant y Saer Chambered Tomb, Anglesey (Baynes)

uprights but was tilting and resting on the ground to the east where it stands to this current day (*ibid*, pp. 185).

The overall shape of the mound is kidney shaped (see Figure 135), reminiscent of the mound at Bryn Yr Hen Bobl (Lynch 1991, pp. 83-5). The overall plan of the chamber is roughly square in shape and with another limestone slab on a tilted angle at the southern edge of the chamber. Scott notes that there was evidence of recent digging both outside of the tomb to take stones and within the chamber itself with small pits still visible, likely evidence of antiquarian treasure

hunters. The first official excavation was carried out in 1874 by Thomas Prichard; a familiar name as Prichard discovered the Escob stone and brought it to its current place on Llwydiarth Escob farm where he lived at the time. Prichard's excavation found a cist 1.34 metres in length by 0.36 metres on a north-west, south-east alignment within the chamber (Prichard 1875, pp. 345-6; see Figure 136). The floor of the cist was made of pebbles which had been collected from the seashore nearby and the cist itself was covered with a 1.7 metre in length capstone which had been crushed and broken in antiquity (*ibid*, pp. 345-6). When this was removed the cist was found to be full of bones which had been partially crushed by the collapse of the capstone and this explained why parts of human leg bone was later excavated from just outside the cist itself, having been ejected from the stone box during this destruction event. Prichard claimed that despite the destruction two skulls laid undisturbed and the two bodies were likely in a seated or foetal position lying sideways within the stone tomb (*ibid*, p. 346). Scott disputes the interpretation of the body position on account of the destruction of the tomb but also the evidence of rat and mouse remains within the cist - suggesting that the movement of these rodents would have disturbed the human bones around with potentially nothing within the cist being in its original prehistoric context (Scott 1933, pp. 189).

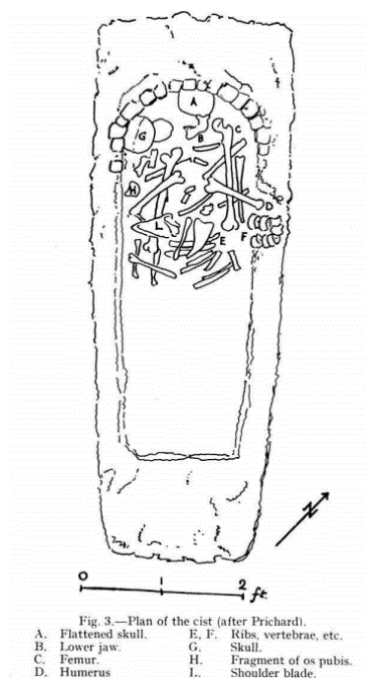


Figure 136: Image of human remains as recorded in cist within Pant y Saer chamber and recorded by W. Williams (1875).

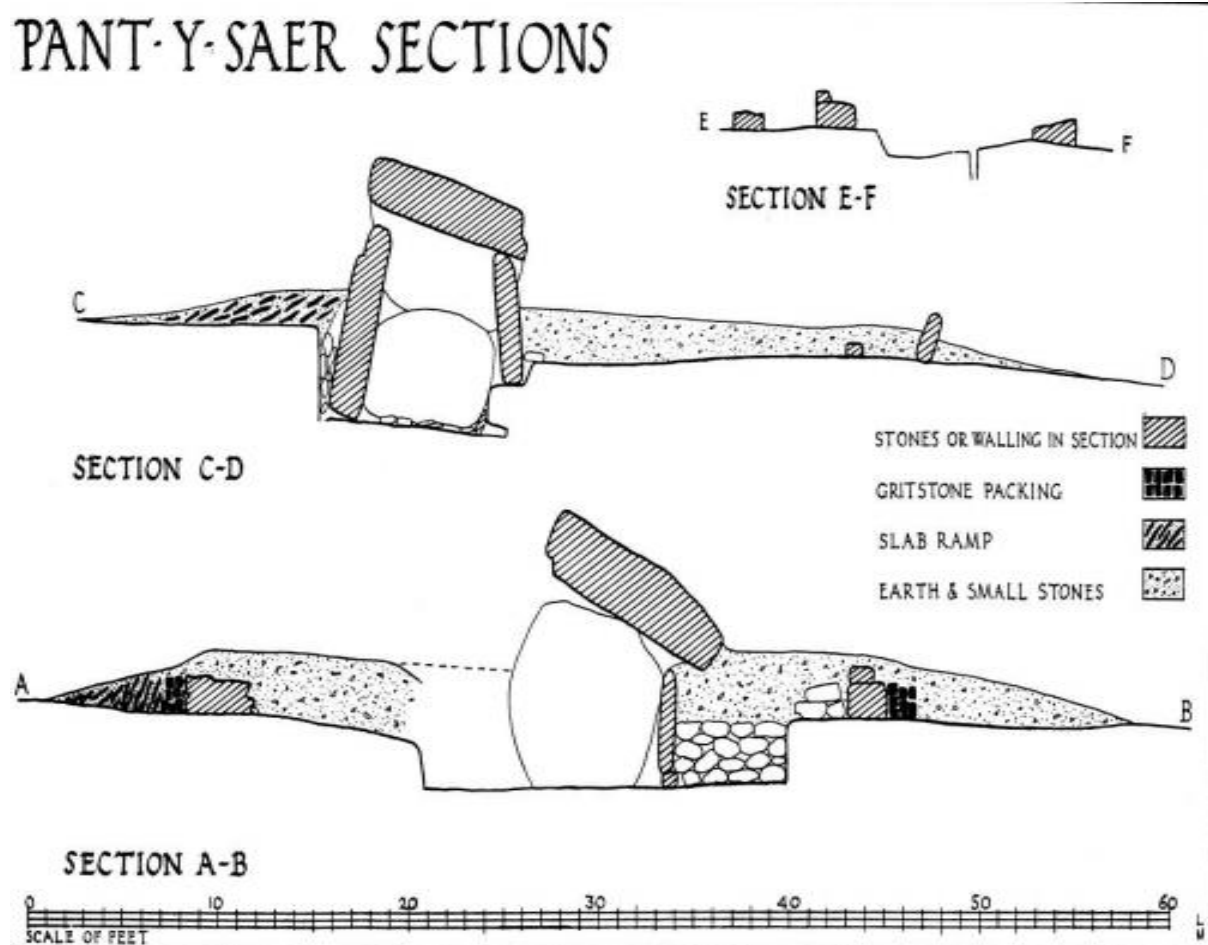
Other finds found around the cist within the main chamber at Pant Y Saer include the remains of at least 36 humans along with the remains of oxen, pig and hare (*ibid*, p. 207). One piece of

pottery was found in the earth above the cover slab of the cist and was described as handmade dark material with white grog inclusions. Other finds were charred wood, many shells and some slight evidence of calcined bone which is probably the remnants of a cremation burial. These are comparable with the slight, fragmentary remains recovered from the floor surface of the tomb at Bedd Y Foel. It was also noted that on three occasions small collections of bones were covered with thin flat stones (*ibid*, pp. 190).

Scott proceeded with his excavation alongside his wife in October 1930 and April 1932 and describes the tomb chamber as a roughly rectangular pit 4.87 metres in length, 3.04 metres in width and 91 centimetres deep with shallow extension to the west (*ibid*, pp. 191-6). This is larger than what was uncovered at the Foel, but this does not consider any additional chamber space which presumably now currently lies buried underneath the capstone. The irregular natural fissure in the limestone bedrock had been filled loosely with large blocks of stone and paved over to create a flat floor surface. Scott also describes a possible vestigial passage to the west but was now completely destroyed (*ibid*, pp. 195-6). The chamber itself opened to the south-west but Scott claims the original axis of the tomb being east west on account of the movement of the orthostats over the millennium (*ibid*). This shift from the tomb's original position shows that it is likely that most tombs had moved from their prehistoric contexts over the thousands of years of standing out in the opening with the structure and foundations at the mercy of the elements. Although the movement of the structure at Pant Y Saer is not comparable to the utter devastation of the tomb at Bedd Y Foel but, as we know from the local accounts, it is likely that the tomb was flattened with the help of modern mechanical engineering in the form of the Drott powered by a joy riding child.

Scott mentions that the recording of the stratification of the artefactual evidence from his excavation was hampered by the fact that the human remains discovered during the earlier excavation by Prichard had been thrown back carelessly into the chamber (*ibid*, pp. 205). Scott records that the prehistoric finds were mostly uncovered from the upper layers of stratigraphy which he calls the layer of funerary deposits, and this contained great quantities of human bones, some fragments of pottery, one bone implement, a sandstone disc and one chert tool which is described as a lozenge shaped arrowhead likely of Neolithic date (*ibid*, pp. 205; 207-8). Below this was a layer of earth with no stones followed by a layer of earth mixed with stones which is comparable with the floor surface at Bedd Y Foel and contained no artefacts. This surface was later followed by a thin red layer of clay and then the stone floor surface (see

Figure 137). Scott also mentions a rock ledge to the south side on which a fragment of beaker pottery was found, and this is reminiscent of the ledge on which the large pebble and chert tool was found to the south of the floor surface at Bedd Y Foel. This, however, has also been interpreted as an intermittent bedrock surface beneath which had broken away in steps as the pit was created. At Pant Y Saer the irregularities in the floor surface had been filled with stones so it is likely that this was a deliberate shelf to the south of the tomb. A possible forecourt area was also excavated with a lone quartzite pebble, one of its faces marked with twin symmetrical incised lines with evidence for a groove to grind between them, no further interpretation was given for these artefacts (*ibid*, pp. 217).



*Figure 137: Cross sections of Pant y Saer tomb (Scott 1933, Plate 2).*

The human remains were analysed following the excavation and a minimum number of individuals was established with a total of no less than fifty-four individuals which included thirty-six adults, three adolescents, six children and nine full term foetuses, with the unusually high amount of neo nates noted by Scott in his analysis (*ibid*, pp 207). It is likely that these

full-term foetuses died in childbirth, possibly with the mother and were interred in the same tomb as the adults but Scott also mentions a case from Scotland where the tomb of an adult had been opened to bury any recently deceased new-born infants. It is also possible that these babies were part of a similar ritual seen across North Wales with full and partial child burials being included with additional ritualised elements, such as can be seen at Bryn Celli Ddu and Bedd Branwen (see Relics of a Darkening Past section).

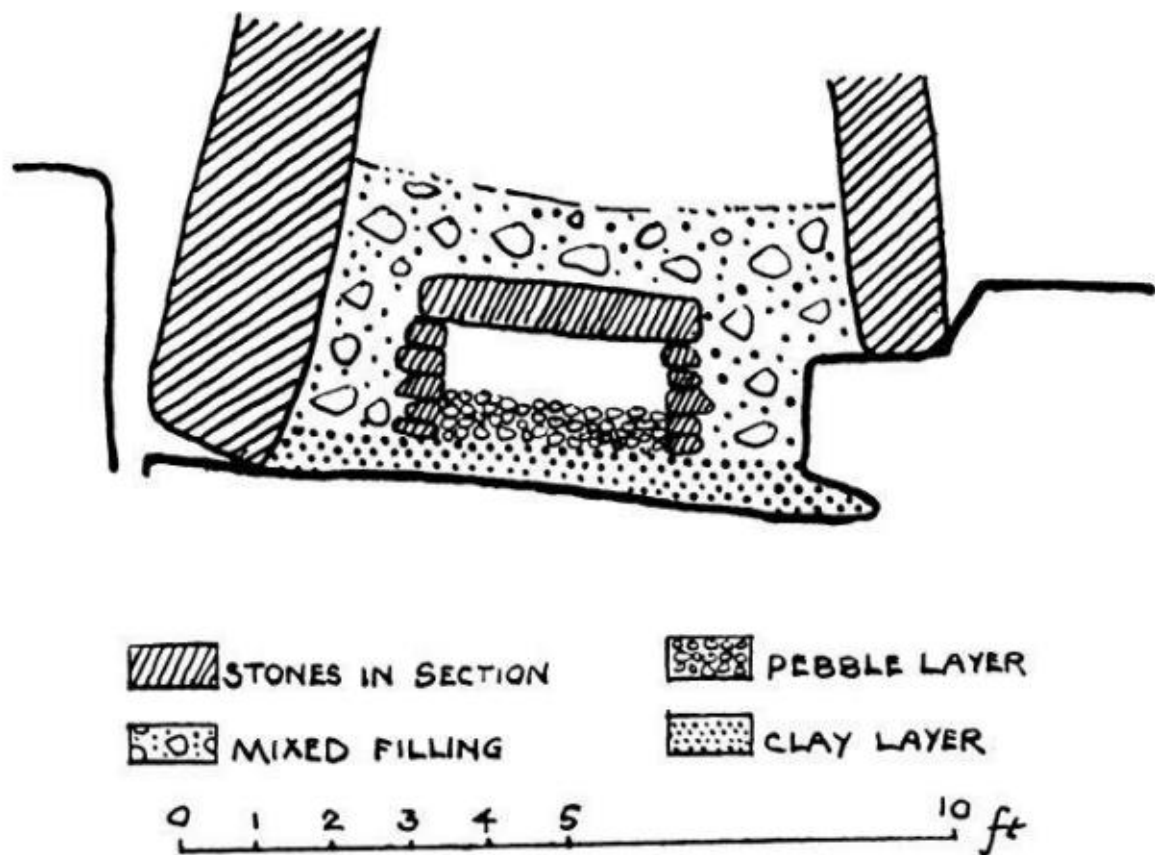


Figure 138: Conceptualised cross-section of cist grave in central chamber (Scott 1933; p. 190).

As mentioned earlier the most comparable aspects of the tomb at Pant Y Saer is the floor surface that lay beneath the cist, described by Scott as being an indefinite setting of stones set in a thin layer of clay which covered solid rock (*ibid*, pp. 194). This seems to be the exact technique of tomb floor construction found at Bedd Y Foel and the photograph although black and white and grainy shows a remarkably similar makeup with the smaller stones set into a clay matrix.





*Figure 139: Photo of interior of chamber as seen from entrance, with excavated floor surface visible. Note the comparative similarities between this floor at the one recorded at Bedd y Foel (Scott 1933; p. 193).*

The suggestion of a forecourt area likens this to the portal dolmen type of tomb construction that was preceded by the passage tomb form. It is possible that Bedd Y Foel had a forecourt area which faced the rising sun of the midsummer solstice as it crept above the oceanic horizon over Dulas Bay. Unfortunately, excavation was not carried out in the northern and north-eastern quadrants outside of the area of stone at Bedd Y Foel as the excavation was carried out to ascertain if ruins of a chamber could be discovered and as such did not move out into these areas. Excavation outside of the chamber area to the north and northeast would be required to attempt to discover a forecourt or destroyed passage, with the latter being less likely. Trenches laid outside of the chamber would also be needed to establish whether any remnants of a mound can be found although the current location is on a slight rise on the outcrop itself.

The metallised surface recorded on the western side of the trench on site could be a compacted foundation where once a mound did stand. Scott also mentions that the stony surface was relatively sterile which mirrors the findings from the floor layer at Bedd Y Foel as all five of the prehistoric artefacts we found on top of the floor surface, with only chalky white patches

being possibly the badly preserved remnants of cremation burials. These possible cremation deposits inserted into the floor surface, mirrors the findings by Hemp at Bryn Celli Ddu (see Bryn Celli Ddu: Hemp section) with small pockets being made in the purple clay layer to deposit small piles of cremated human remains.

### Lligwy, near Moelfre



*Figure 140: Lligwy megalithic tomb, nr. Moelfre, Anglesey.*

Lligwy (see Figure 140) is a megalithic tomb that close to a 12<sup>th</sup> century Medieval chapel and Romano-British settlement at Din Lligwy, close to the town of Moelfre, to the east of the island. This Late Neolithic tomb is an unusual example as it has a squat low profile with 8 stumpy uprights, 3 of which support the massive 25-ton capstone. The site is first referenced by Pennant in 1781 (Vol. 4, pp. 263), who described it as a Great Cromlech. The site is mentioned again by Skinner on his 10 Days Tour of Anglesey in 1802, which he later sketches (Skinner 1802, pp. 78; see Figure 141). It is later described as a ‘stupendous monument’ by Miss A Llwyd and mentions that the site was called ‘Coetan Arthur’ by the locals (Llwyd 1832), no doubt referencing the legendary dark age warlord with a number of similar monuments given this name across Wales. The first antiquarian investigation into the site was carried out by Rev. Wynn Williams who carried out a survey and drew up a plan of the monument in 1865. The

capstone measures in at 5.5 metres in length and 4.8 metres in width with a height of just over 1 metre at its thickest. All of the stones that used in the construction of the tomb are composed of carboniferous limestone which is geologically native to the area. The entrance of the tomb is on the east side of the monument with the chamber of the tomb dropping to level of just over half a metre above the capstone with the soil which was likely to have silted in being of a depth of 61 centimetres until the next layer of stratigraphy which is a clay floor surface. Some movement had occurred with the capstone no longer being supported by most of the unusually large number of uprights and the uprights that do support the monument had been driven further into the ground with the movement of the capstone (Baynes, 1920. Pp 217).

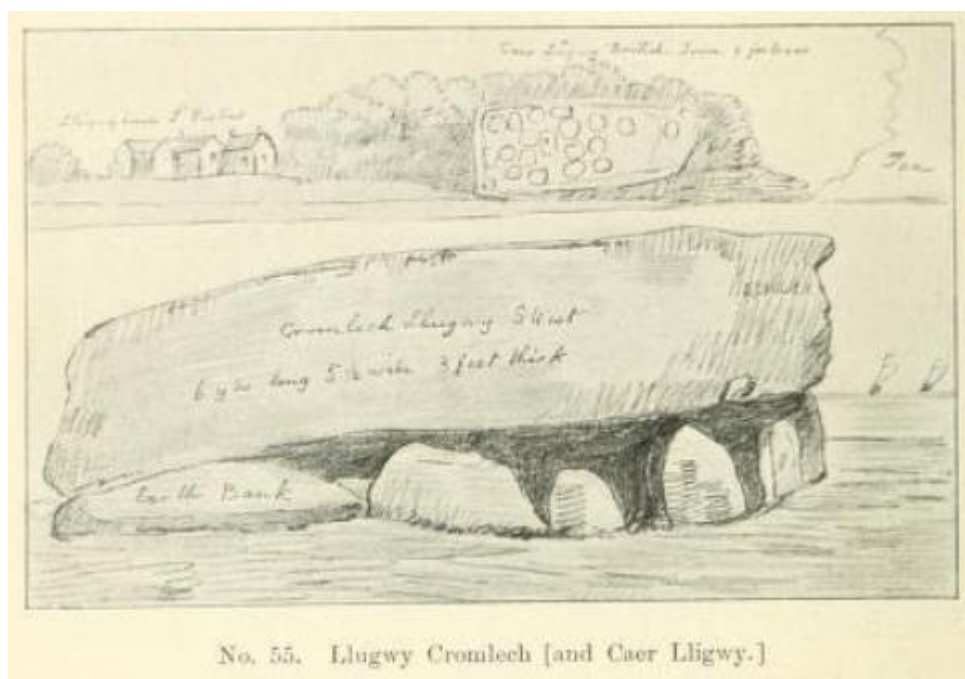


Figure 141: Depiction of megalithic tomb at Lligwy, near Moelfre (Skinner 1802, pp. 80).

The interior of the chamber of the tomb was excavated by Baynes between 1908 and 1909. Upon digging within the interior, he immediately came down on a clay layer on removal of the topsoil, this layer contained a quantity of limpet shells and was followed by a layer of dark earth, a feature discovered across most excavations of sites of this type in the area including Bedd Y Foel. This black soil went to a depth of just over 20 cm and contained human and animal remains alongside flint scrapers and pottery sherds. The next stratigraphic layer comprised of flat stones which was placed much like paving and the black earth continued beneath this where more human bones, flint tool and pottery was found. The layer beneath this was described as a wet sticky soil which contained mussel shells, presumably from the nearby



coast (see Figure 142 for cross section of layers). Beneath this was the natural, approximately 1.8 metres from the bottom of the capstone, cut into the bedrock much like at Pant Y Saer and Bedd Y Foel (Baynes, 1920, pp 223-224).

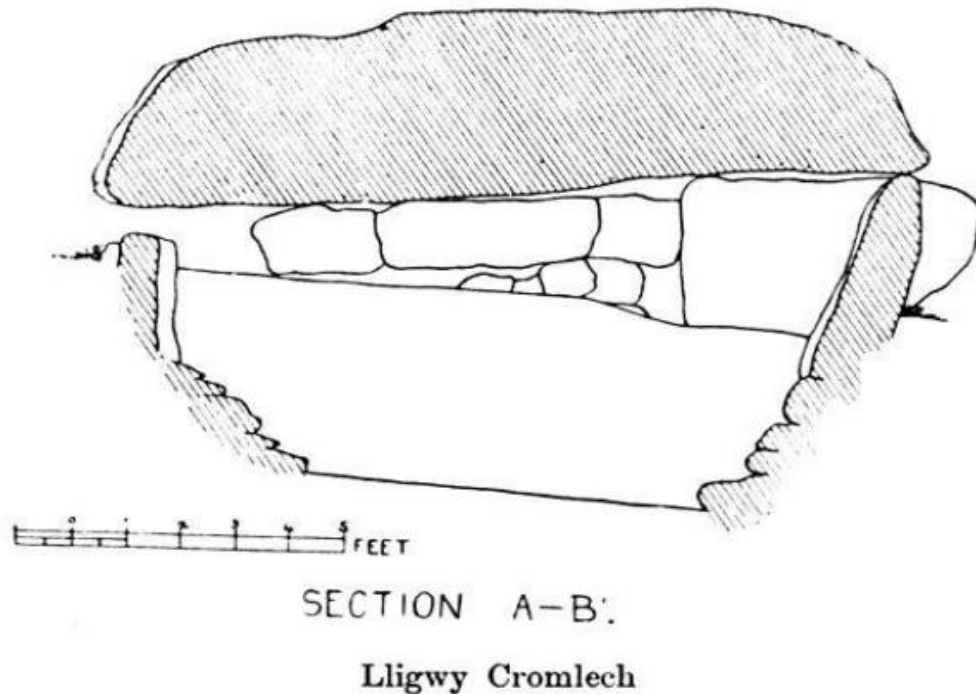
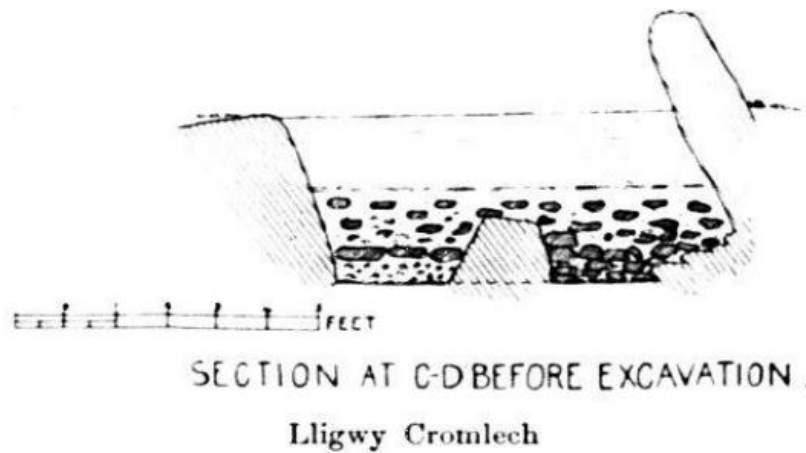
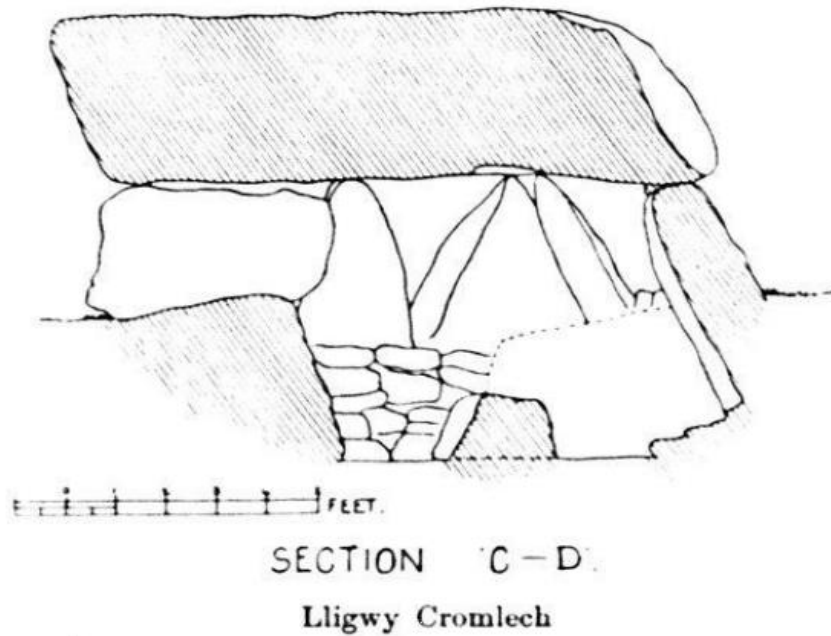


Figure 142: Cross section of interior of chamber at Lligwy megalithic tomb (Baynes 1920; p. 223).

Most interestingly Baynes (*ibid*, pp 225) suggests that two stones discovered to the north of the chamber following trial excavations outside of the monument could be the remains of a covered alley or *allée courvete* Black Sea region type tomb the likes of which can be seen at Bryn Yr Hen Bobl and would certainly account for the unusual shape and construction of these monuments. Baynes also concluded that entrance had been forced into the tomb at some point in the ancient times which had caused the capstone to shift to east, taking two of the uprights in that direction and knocking it off the top of the other uprights, in response to this some stones had been wedged on top of the western support stone to fill in the gap.

The pottery finds from the inside of the Lligwy burial are described as a coarse brownish material with incised zig zag lines, fragments of black and grey pottery and a rim with zig zag incised pattern, Baynes notes that the pottery is strongly associated with the human remains and is likely a later Bronze Age deposition within the site with the origin of the monument being of Neolithic date. The human remains included 12 human jaw bones with many fragments of skull and bones and it was estimated that these belonged to at least 30 individuals.

The animal remains contain a menagerie of species that include a small ox, a young pig, bones and horns of red and roe deer, a fox's femur, a bird ulna, and fragments of an otter's skull (*ibid*, Pp 224).



*Figure 143: Images of cross sections of excavated area at Lligwy (top) with excavated floor surface in tomb (Baynes 1920; p. 222).*

Again, much like Pant Y Saer the chamber was cut into the bedrock at Lligwy and this is the comparison that can be made with the findings from the excavation at Bedd Y Foel. Despite this it is unlikely that the tomb at Bedd Y Foel is an allée courvete type tomb from the black sea region as was suggested by Baynes on account of its small profile and shape which looks much more similar to Pant Y Saer in plan than it does Lligwy. Some of Baynes theories must also be taken with a pinch of salt as he uses disproven methods such as phrenology (he likens



the skulls found at Lligwy to the skulls of Eskimos) and questionable techniques such as using outlying stones and astro-archaeological techniques to attempt to date the tomb. This being said it is not unlikely that Lligwy is a comparable site to Bryn Yr Hen Bobl with its unusual construction and squat box-like appearance and further investigations at both sites will be required to fully understand the architectural decisions made during construction and comparisons with continental tombs from the Parisian and Black Sea regions.

### Trefignath, Holyhead



*Figure 144: Trefignath chambered tomb. Reproduced with kind permission by Owen.*

The reason for outlining the chambered tomb of Trefignath (see Figure 144) in the discussion section of this thesis is twofold. Firstly, through excavation the site was found to start its life as a simple passage tomb very similar to Bryn Celli Ddu, although its evolution through later phases took a different architectural form as we will find out in this chapter. Secondly the tomb at Trefignath is built into a stony outcrop much like the new discovery of Bedd Y Foel.

The burial chambers of Trefignath can be found on the island of Ynys Gybi, also known as Holyhead, and are situated on a small upland outcrop with the lowlands to the north, south and east being wet marsh land (Smith & Lynch, 1986. Pp 1).

This site has seen a long history of antiquarian and archaeological study with the burial chambers first described by John Aubrey in his *Monumenta Britannica* following his visit to the area in 1660, but it is also suggested that he had visited the site on a tour of the islands 5 years earlier. Aubrey's account of Trefignath also gives us the earliest account of any megalithic tomb on Anglesey starting the long tradition of the study of prehistory on the island.

*"In Anglesey, about a mile from Holyhead, on a hill near the way that leads to Beaumaris are placed a certain great rude stone much after ye fashion of this draught here."* (Aubrey 1980).

Alongside this introduction to the site Aubrey provides a sketch drawing and description of the three chambers and suggests that the site is an ancient burial ground alongside the earlier name for the site; *Cae-r-lleche* or 'fortress of stone' (*ibid*).

The site is again described over a century later by 1775 by Nicholas Owen who describes the site as 3 cromlechs joined together and states that the upper stones had fallen off of their supports (Owen 1775). It would appear that the monument was partially dismantled by the middle of the seventeenth century and the dismantling of the tomb was recorded by Stanley in two notes in *Archaeologia Cambrensis*, his account states that most of the tomb was destroyed with the removal of the majority of the cairn and most of the orthostats in 1790. The eastern and central chamber were left standing to provide shelter for 'mountain beasts'. The tomb would have been completely dismantled if it wasn't for the fortunate intervention by Lady Stanley (Smith & Lynch, 1986. Pp 5).

In the summer of 1971, it was noticed that the capstone of the central chamber had collapsed and had broken one of the upright supports. It was decided that the tomb should be partially reconstructed with the capstone of the eastern chamber being lifted and the uprights re-set to ensure that the final chamber did not collapse. Wooden supports were put in as a temporary precaution, but this temporary fix became more of a permanent situation and by 1976 the wooden supports had rotted. It was at this point that it was decided that a full excavation and reconstruction of the monument should be undertaken.

Excavations were carried out over 3 seasons from 1977-1979 with the reconstruction and consolidation of the monument being carried out in 1982. The excavation began with the eastern chamber in 1977 and this was continued in 1978 with the western chamber being

excavated in 1979 and finally the entirety of the cairn structure. The tomb was found to have been extensively robbed out in antiquity but sealed stratigraphic layers were uncovered which provided a chronology for the tomb's construction (*ibid*).

The first phase of pre tomb activity consisted of the digging out of the earth and the raising of timber posts, with pottery from at least eight vessels was discovered and these vessels were recorded as Irish Sea wares with radiocarbon dating of the remnants of charcoal recovered giving a date of  $5,050 \pm 70$  bp (somewhere around 3,000 BC). This activity is contemporary with the construction of the complex at Llandegai and pre tomb activity at Gwernvale. It is thought that this pre tomb activity at Trefignath is the result of two phases, the first being a temporary short-lived settlement on the ridge followed by the ridge becoming the focus of ritual activity somewhere around the middle of the fourth millennium BC with the preparations for the first in the series of burial chambers that were to follow.

The next phase of activity at Trefignath was the erection of the burial chambers which in itself was a 3-phase process (see Figure 145). The first chamber to be built was the western chamber (see Figure 145, highlighted on right hand side of image). The highest point of the ridge was selected, and the bedrock was deliberately levelled (Smith and Lynch 1987, pp. 14), much like what was found at Bedd Y Foel. After this a single burial chamber was raised over the site of the earlier temporary settlement and although typologically the same as Bryn Celli Ddu this monument is much smaller with little evidence of a passageway although a small semi-circular forecourt may have been present at the entrance to the chamber, it is mentioned that this simpler form of the already simple passage tomb type may better be categorized as a passage dolmen (*ibid*, Pp 16-18). Unfortunately, most of this area of the site has collapsed and has been extensively robbed out, so much of the thoughts on form and construction are tentative in light of such complex and damaged archaeological remains. Cummings and Richards (2021, pp 6-7) conducted a research project re-examining the megalithic tombs in southwest Wales and encountered similar problems with identifying the typology of these tombs as can be found on Anglesey. They suggest that the fluidity of the boundaries of classification creates this problem and that it is not uncommon to find simple passage tombs and portal dolmens named as dolmens (an outdated term). This can be found at Trefignath with the first phase being described as a simple passage tomb with no evidence for a passage, it is likely that the first chamber is better categorised as a portal tomb or portal dolmen. The chamber itself is thought to be roughly circular in form and comprised of stones that could be moved by a single person into place with

dry stone walling filling the gap. The shape is speculated upon, but the majority of simple passage tombs of this type have a roughly sub-circular or ovoid plan so this is likely the case. The passage leading in was lower than the chamber itself and was barely evident in the archaeology and was not of any length comparable to Bryn Celli Ddu, Barclodiad y Gawres or the Irish Carrowkeel type passage tombs (Kador et. al. 2018). Another simple form of passage tomb can be seen 500 metres to the south of the monument at Trefignath along with a several standing stones in an alignment to the northwest which as we have seen through this study is not an uncommon feature of these sacred ritual burial sites.

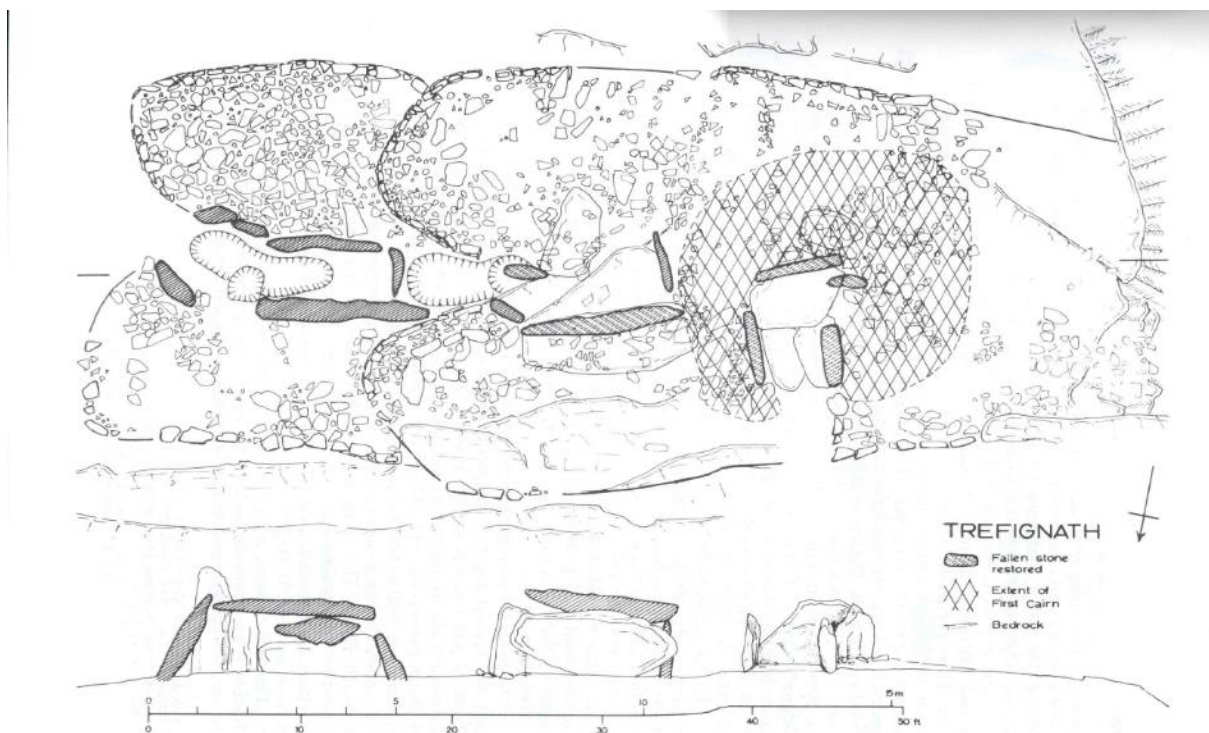


Figure 145: Measured plan of Trefignath chambered tomb, showing first stage as shaded area around first tomb erected on site (right hand side - Lynch 1991; 330).

The lack of any evidence of a passage at Bedd Y Foel may well indicate that the first phase of Trefignath is of the same typology, as they both share a number of similarities including the placement atop an outcrop, levelling of the bedrock and a small chamber. Could it be that the tomb at Bedd Y Foel is of the passage dolmen type? It is difficult to assess this as both tombs were ruinous with later interventions which complicate the archaeology. It is also likely that we may be tripping over the multitude, if various, typologies proposed for these megalithic monuments and each site, although sharing similarities such as architecture, building technique and finds within may have to be all assessed on their own individual merits as it is clear that

the building and development of each tomb have their own individual quirks and organic evolution that does not always fit into known typological frameworks.

Phase two of Trefignath was defined by the construction of the central chamber as the passage tomb was extended into a chambered tomb toward the east. The central chamber was built directly next to the simple passage chamber of phase one and although there is no dateable evidence from this phase to suggest the time between phase 1 and phase 2; pollen samples from sealed stratigraphic layers show that enough time had passed for a significant change in the overall surrounding environment with the phase 1 tomb having mainly tree pollen with pollen counts from the time of the construction of phase 2 show more arable grass pollens. During the time of the building of the central chamber, the cairn within the phase 1 tomb was completely replanned from a small round cairn into a larger wedge-shaped long cairn. The chamber of phase two was larger than that of phase one and had a portal to the east with the north and south of the cairn being built up with dry stone walling, this type of chamber is more commonly seen in the Cotswold-Severn type tombs, an example of which can be seen at Capel Garmon on the Welsh mainland. The final stage of construction was the covering of both phases 1 & 2 with cairn material. The broken remains of a carinated bowl of Irish Sea Ware were found in the chamber of Phase 2 along with sherds of the Later Neolithic Grooved Ware type from the middle of the 3<sup>rd</sup> millennium BC, with Smith & Lynch (*ibid*, pp. 21) mentioning the rarity of this pottery type mentioning Din Lligwy and Gaerwen as two sites on Anglesey where this pottery type was found and I as we know from the excavation of the ridge and the pit features that grooved ware was also found at Bryn Celli Ddu. No evidence for burial was found in either chamber but the extent to which Trefignath had been robbed out in antiquity suggests that there would be nothing left within the chambers that would be stratified.

The third and final phase of the construction at Trefignath was the construction of the eastern chamber which was built into the portal of the central chamber effectively sealing and decommissioning it as a place for further burials. Evidence from the pollen data again suggest a further decline of trees in the area and an increase in arable grass types suggesting another significant time jump between phases 2 and 3. The eastern chamber was the best preserved of the three, mainly down to its partial reconstruction before it collapsed like the previous two chambers. The eastern chamber consists of a complex portal entrance defined by two upright orthostats that stand to 2 metres each that frame the entrance to a rectangular chamber a feature that was similar to that of the central chamber in phase two. The portal area outside of the tomb

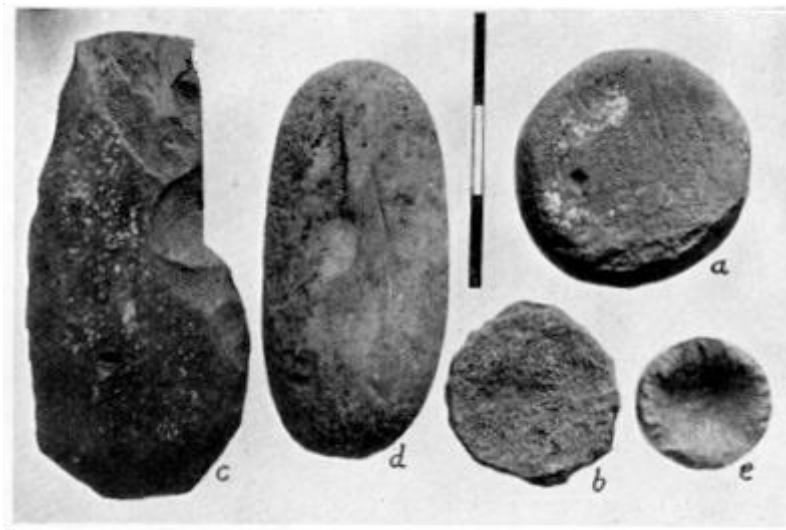


was found to house an arc of post holes which would have supported upright timbers, another feature comparable to finds at Bryn Celli Ddu and a broken pot thought to be a cremation urn, but no evidence of human remains was found. Finds from within the eastern chamber include a fine flint sickle and a considerable amount of Peterborough ware pottery dated to the first quarter of the 3<sup>rd</sup> millennium BC with comparable pottery types found at Bryn Yr Hen Bobl and from the early henge phase of Castell Bryn Gwyn (*ibid*, pp.29).

To summarise, the three-phase construction of Trefignath is unique on the Isle of Anglesey with the site likely to have been in use for a considerable amount of time, possibly 1,500 years and with evidence of fires directly outside of the tomb dated to the Iron Age it may have possibly used as a site of ritual beyond this period. Clear comparisons can be made with the liminal landscapes studied as part of this research project such as Bryn Celli Ddu and Bedd Y Foel with architectural elements being more comparable with Bedd Y Foel and chronological dating from the pottery more comparable with the early phases of the landscape at Bryn Celli Ddu. The problem with a site such as Trefignath is its ability across 3 phases to defy confident archaeological typologies, a problem found with the henge and passage tomb phases at Bryn Celli Ddu and shows that although the tradition of megalithic tomb building can be seen across Europe, many sites will not comfortably fit into any one category, with the tomb builders having a individuality in how these monuments were constructed and developed.

## Artefactual Comparisons with Bedd-y-Foel

### Pant y Saer, Tynygongl



*Figure 146: Selection of stone objects recovered from Scott's (1933) excavation at Pant y Saer. Of interest to this study is the worn pebble, d, in centre of image (Scott 1933, p. 218, fig. 20).*

As not only we can draw parallels from the structural elements at Pant y Saer we can also draw comparisons with some of the artefactual material recorded between both sites. Despite the lack of pottery, some of the stone objects bear similar characteristics to other objects recorded at Bedd y Foel, notably a rounded pebble (d. – see Figure 162). with evidence of rubbing wear on both of its faces. The pebble is described as Scott as having been used as a possible honing stone, arguably for sharpening a ‘metal point’ of some kind (Scott 1933, pp. 146).

## Trefignath, Holyhead

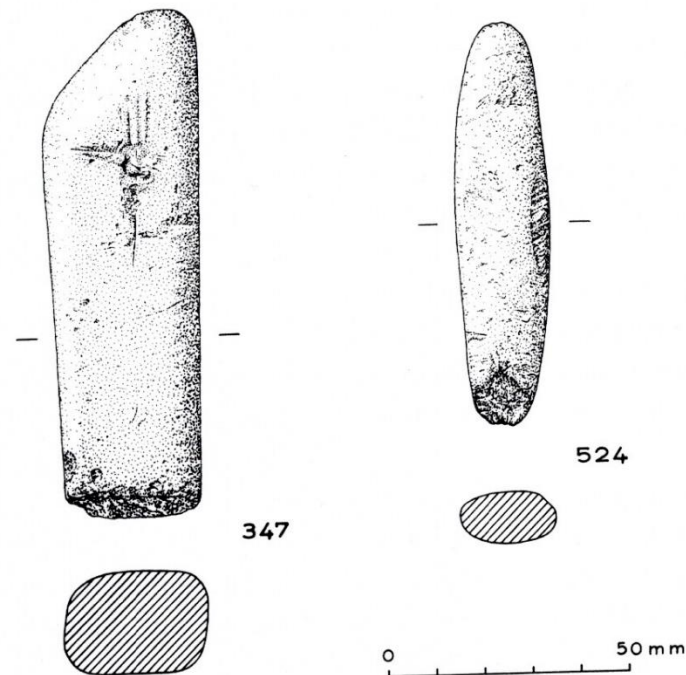


Figure 147: Selection of stone objects recorded at Trefignath, with chipped pebble no. 524, on right hand side of image (Smith and Lynch 1987, pp. 80; fig. 37).

Pant y Saer is not the only example of a utilised, polished stone within a megalithic tomb context. A comparison to the polished sandstone object at Bedd y Foel can be made with another stone object recorded from Trefignath. The object (no. 524 – see Figure 147) consisted of an elongated pebble with traces of abrasion on both ends, with a presumed flake strike on one end. Lynch argues that the stone, being light, would have been unsuitable as a hammerstone, arguing instead that it may have been used for exploitation of shellfish resources, specifically in the use of detaching limpets (Smith and Lynch 1987, pp. 80). This object is of a significantly earlier date than the example recorded at Pant y Saer, as it is suggested to be late Mesolithic based on comparisons elsewhere (Jacobi 1980). It is unlikely to be late Mesolithic in date from the finds at Bedd y Foel, however residual Mesolithic activity has been recorded in the immediate region, especially at Coedana (Owen 2018). The suggestion that the tool is a limpet smasher is interesting given its reference to the coast and its fragmentary material making it unlikely to be used for any heavy work. It must also be noted that the polished stone item from Bedd y Foel had one end which was chipped/broken in a similar manner to the example at Trefignath.

## Din Dryfol, Bethel

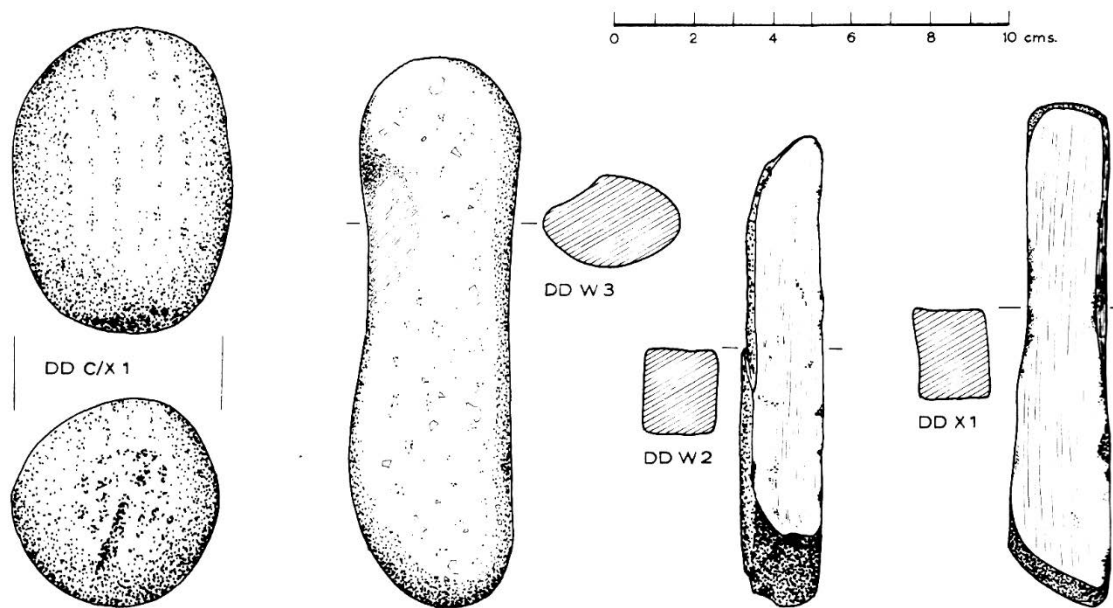


Figure 148: Selection of stone objects recovered from Din Dryfol excavation, of interest is DD C/X 1 (Smith and Lynch 1987, pp. 118; Fig. 52).

A third example of a polished stone within a megalithic tomb context can be found on Anglesey. At the ruinous tomb of Din Dryfol, another 'long grave' similar to Trefignath (Smith and Lynch 1987, pp. 118; 121). The stone object, a sandstone pebble (DD.C/X.1, see Figure 148) is described by both Smith and Lynch as a hammerstone associated with hut circle settlement nearby – this would imply a later prehistoric to early historic date (i.e. Iron Age to Romano British). The material is described as a well cemented sandstone with abrasion at either end, comparable to the cylindrical polished stone implement recovered from Bedd y Foel.

## Capel Eithin, Gaerwen (Anglesey)

Outside of a megalithic tomb context, an artefact recovered from the excavations at Capel Eithin (30/1/221, see Figure 149) consisted of a dolerite pebble which was modified by adding a facet, and later identified as a possible burnishing tool (White & Smith 1999, pp. 73-5). This object was discovered within a Bronze Age context and is broadly comparable to the polished pebble recorded on the site.

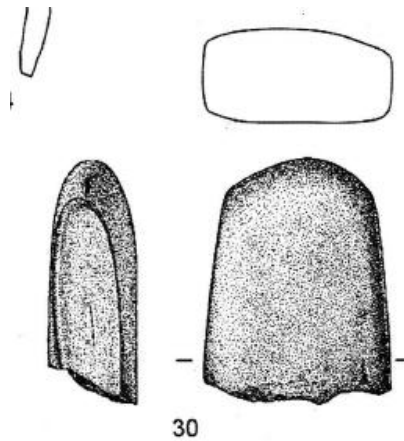


Figure 149: Depiction of polishing stone recovered from Bronze Age context at Capel Eithin (White and Smith 1999).

### Carmanaint and others, Llanfairfechan (Conwy)

At least several sites are comparable to the polishing/grooved stone recorded at Pen y Foel. These include a number of ‘arrow polishing’ stones found on the mainland, visible both in Conwy and Gwynedd Counties (for an example see Figure 150). In the Llanfairfechan area, these consist of sites near Ffridd Newydd (GAT385 (archwilio.org.uk), Llanerch Fedw (GAT1903 (archwilio.org.uk) and Carmanaint (GAT386 (archwilio.org.uk)). All examples show deep grooves cut into the natural bedrock, with Camanaint being decorated with at least 100 incisions on all visible surfaces (RCAHMW 1956, 127). In Gwynedd, these consists of examples to the south west of Llanfairfechan – including an example near the Afon Anafon (GAT366 (archwilio.org.uk); and near Foel Dduarth (GAT365 (archwilio.org.uk)). The date range varies, with those in Gwynedd recorded as being at least Medieval in date; whereas those in Conwy are recorded as Prehistoric. This suggests that there has been little work done in terms of studying these stones and as such is a project which warrants further study. Furthermore, this discrepancy makes an accurate date of the grooved stone at Pen y Foel impossible at present.

While these examples are found within the natural bedrock, the grooved stone example from Bedd y Foel is loose. Its rounded appearance again suggests it may have been dressed, whereas its weight suggests it has not travelled far from the vicinity of the Foel itself.





*Figure 150: Image of Arrow stone near Llanfairfechan. With kind permission by Craig Harris.*

### Cwm yr Eglwys (Pembrokeshire)

The HER database on Archwilio lists a particular object which may be comparable to one of the objects recorded on the Bedd y Foel site. A findspot near Cwm yr Eglwys (Pembrokeshire) lists the discovery of a ‘sandstone or chert axe head bearing similarities to the polished cylindrical piece recovered from the site. The object is described as having a pointed butt end with a wide, blunt like adze blade on the other side (DAT1589; archwilio.org.uk). The softness of the stone used would have made it an unusable tool, as it would have broken quite easily. This object must therefore be a symbolic representation and may be broadly comparable to the cylindrical stone object recovered from Bedd y Foel.

## Parc Dinmor, Penmon (Anglesey)



Figure 151: Image of Parc Dinmor landscape near Penmon. Ordnance Survey Aerial data. Areas of settlement/roundhouses highlighted with red arrows.

In the early 20<sup>th</sup> century, C. W Philips excavated a series of hut circles near Penmon, Anglesey. These hut circles were suggested to be of Iron Age date (Philips 1932; 247), and part of a wider network of field boundaries and scattered settlement in this area. Several artefacts were discovered during this work, with one of which of particular interest as it can be broadly compared to one of the artefacts recorded at the Bedd y Foel site. During the excavations a series of polishing stones, named ‘rubbers’ by the author, as well as hammerstones, were identified in one of the huts excavated. One of the pebbles depicted, pebble V (see Figure 152), bears similar shape and characteristics to the polished/worn pebble recorded at the Bedd y Foel site – the difference being that the wear on the Bedd y Foel pebble is on a narrow edge, whereas the wear on the Parc Dinmor example is on a flat face.

Furthermore, another stone object recorded during the excavations may have parallels to the cylindrical object recovered at Bedd y Foel. No image of the object can be seen in the report, but the author describes the discovery of a ‘...carefully worked cylinder flattened a little on one side with a rounded end.’ (*ibid*, pp. 256). Sadly, Philips does not go into detail about the mineralogy of the stone, and we can only theorise its appearance based on this limited

description. If we were to take this at face value however, then it may be likely that the cylindrical stone is of a later, Iron Age date.

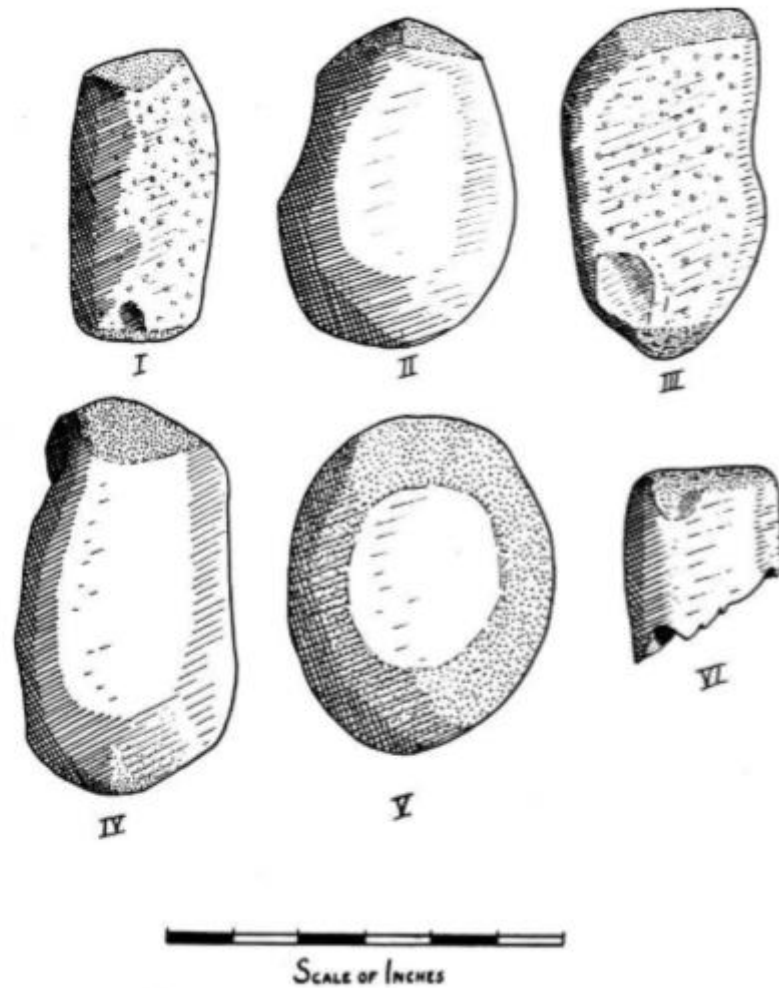


Fig. 3.—Stone Implements.

Figure 152: Selection of worked/polished pebbles found during excavation of a scattered roundhouse settlement at Parc Dinmor, Anglesey (Philips 1932).

## The Foel: A Lost Tomb

To conclude, we have established with a reasonable level of security that the observations and artefactual/structural evidence recorded is indeed indicative of a megalithic tomb, when compared to examples recorded nearby and across the island. The most obvious architectural feature of the tomb at Bedd Y Foel, is the rock cut chamber into which the clay floor surface was laid. This feature is shown to have comparative examples with at least three other tombs on the island and could well be found in more in future excavations as long as the archaeologists dig the chamber down to the natural. Pant Y Saer, Lligwy and Benllech have all been described as unusual examples of megalithic architecture, particularly Lligwy which is unique in its aesthetic and construction, an oft mentioned aspect of the site.

The use of dry-stone walling is rare but not unique to this region of the island, as recorded at Pant y Saer. Furthermore, all of the tombs appear to have been in use at the end of the Neolithic with continued use into the Bronze Age somewhere between 2,000 and 1,800 BC.

The study of these tombs has changed some of the interpretations of the archaeology uncovered at Bedd Y Foel, particularly the rock cut shelf in the bedrock on which the large pebble with the flattened end and one of the chert tools was found. It was originally thought that the shelving was just coincidental, presumably an aspect left over from the quarrying, smashing and removal of material to create the chamber pit. It is now thought that this may in fact have been an intentional feature as the same features can be seen at 2 of the 3 tombs studied as part of this chapter.

The chert tools discovered at Pant Y Saer are comparable to the chert tools found at Bedd Y Foel in material alone and this is likely to suggest an earlier date at the latter. Chert naturally occurs on the island, being formed within limestone, whereas flint is usually seen as either a foreign import or a beach find. These factors make flint a rare material to come across on the island and in the northwest of Britain as a whole.

Comparative examples for the pebble and polished stone cylinder have proven to complicate the date of some of the artefactual material recorded from the site, notably the pebble and stone cylindrical object. Although the latter has been identified within an early prehistoric context (i.e., late Neolithic to Early Bronze Age); comparative examples for the former (the pebble) have been noted in much later contexts, particularly the Iron Age, at places such as Parc Dinmor near Penmon (Philips 1932). Both objects were found within or just below an organic decayed

topsoil layer atop the floor surface of the chamber and may have been later interments. Perhaps the site was revisited in later periods as seen at many prehistoric monuments both on Anglesey and on the mainland. The grooved channels on the large boulder have proven difficult to parallel but it may be some kind of honing/sharpening stone of either prehistoric or medieval date. The latter may be significant in identifying whether the summit of the Foel may have been (re)fortified in the early medieval period, as implied by local legend.

The lack of human remains at Bedd Y Foel is similar to what was recorded at both Glyn (Lynch 1966, pp. 26) and Ty Newydd (Philips 1936, pp. 99), although by comparison a large amount of burial evidence was found at both Pant Y Saer and Lligwy. This could be due to preservation as a small amount of chalky white material being excavated from Bedd Y Foel or a difference in tradition regarding the cremation and inhumation of human remains at these sites. Both sites with high preservation are also situated on limestone bedrock, an alkaline stone which is known to neutralise the acidic properties of the acidic soils in Wales, leading to generally better preservation. By contrast the bedrocks atop the Foel are conglomerate or schist, neither of which would leak alkaline compounds into the soil, reducing its natural acidity.

### The Other Lost Tombs of Anglesey, A Case Study

The discovery of the tomb atop the Foel poses many questions as to how many of these sites may still lie undiscovered and with known locations of destroyed examples, what data can be eked out of the sorry remnants. As has been mentioned earlier, a number of tombs such as Cromlech Farm have been badly damaged or completely annihilated by the use of explosives, particularly dynamite when the landowner at the time has decided to reclaim that part of the land. Many tombs have also been systematically dismantled and recycled into dry stone walls and farm buildings by landowners over the millennia as was seen at Bryn Celli Ddu Bach and Bryn Celli Ddu prior to the tomb's reconstruction. Place names often hint at the possibility of lost examples of tombs and standing stones that once stood on the land which can be found in the names of some of the sites selected as part of this case study - with Tregarnedd translating roughly to the 'Town of the Cairn' and Carreg Yr Fran meaning the 'Place of the Stone'. It is highly possible that remnants of these monuments still exist beneath the soil, and this can be further studied using landscape archaeological techniques.

In March 2003 Gwynedd Archaeological Trust released a report on the ritual prehistoric monuments of North Wales and within this report was included the possible recorded sites of



tombs that are no longer extant in the landscape (Smith 2003). These were given the designation F in the condition section of the report (indicating these were either lost or destroyed), along with a grid reference for the possible location. Although there was insufficient time to gain permission and to closely investigate these sites, the recording of the location allows us to view the aerial shots of these sites and review the LiDAR to see if any evidence for the sacred landscape exists as undulations or cropmarks. The grid references were fed into grid ref finder and the northings and southings of the now destroyed monument which were subsequently placed into a comma delimited Excel spreadsheet. These were later applied to the QGIS LiDAR map under the British National grid reference. By following this process this would help place a visible point on top of the LiDAR map of the exact location of the proposed site of the lost tombs.

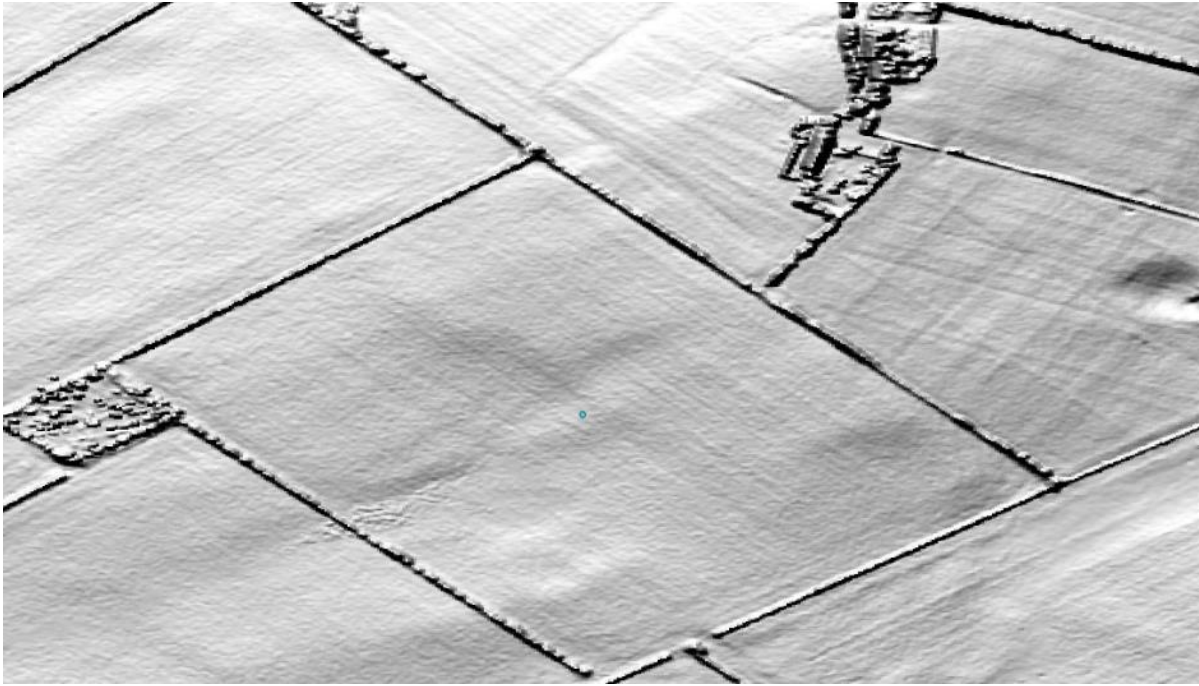
Five of the sites searched were used as part of this case study and the LiDAR was analysed against google earth pro images and historical satellite photos to attempt to better understand the landscape in which these tombs once stood. These methods are the first phases of any archaeological landscape study and will be followed up with site visits if any anomalies are found. It is these types of surveys that can lead to the discovery of complex sacred prehistoric landscapes such as can be seen at Bryn Celli Ddu, Ty Newydd and Llanfechell and can be the genesis of large scale geophysical survey and excavation.

### Caer Llechau (Dwyran)

The site at Caer Llechau can be found at the southern tip of the island, just southeast of Newborough and is supposedly the site where once a chambered tomb could be found. The site was recorded as containing a selection of bronze weapons and implements but has since been lost (Smith 2003; p. 95). The satellite imagery (see Figure 153) clearly shows a sub rectangular cropmark on the map point that was provided for the site in the GAT report and circular cropmark anomalies can be seen to the east as well as the west and the southwest in neighbouring fields. This looks reminiscent of the discovery of satellite burials found in the vicinity of Bryn Celli Ddu and Ty Newydd with the magnetometer as part of this research project. The name Caer Llechau could translate to 'Fort of the Long Stone'. However, another possibility to consider is if the Caer is a contraction of Cae'r – this would mean it is called Field of the Long / Flat Stones, which suggest the possible presence of standing stones or a stone circle in the area. However, no evidence of this can be seen from the satellite imagery or the LiDAR. As such geophysical survey will be required to locate these types of monuments.



*Figure 153: Aerial photos of Caer Llechau study area. Cropmarks highlighted with red arrows.*



*Figure 154: LiDAR image of Caer Llechau study area.*

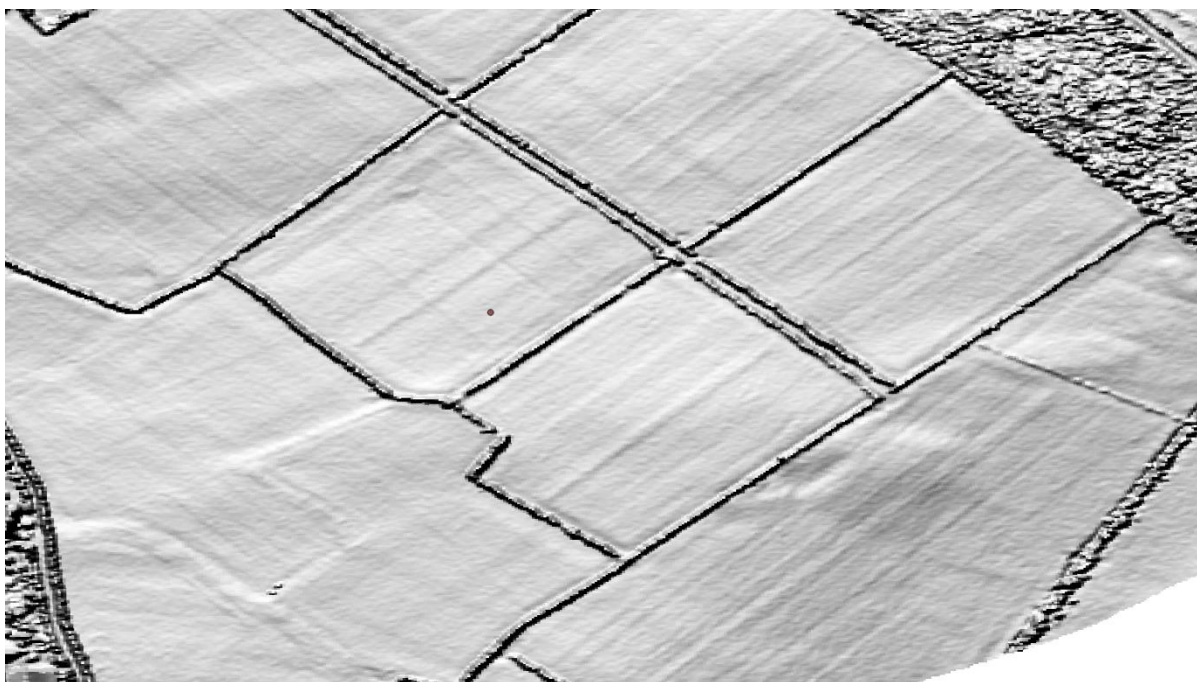
### Carreg Yr Fran (Brynsiencyn)

The field that was once home to the chambered tomb known as Carreg Yr Fran (Smith 2007; p. 16), was described by Baynes as possibly being a double dolmen (Baynes 1910; p. 13). As the tomb had been demolished by Skinner's time it is difficult to be certain, however it is entirely possible that it was indeed the case, as there are several examples of this kind of monument on the island (Presaddfed near Bodedern being one example), and tri-chambered tombs as well (Including Trefignath, Din Dryfol and possibly Hendrefor). The field itself has a number of circular cropmarks within it and is likely that this is a developed prehistoric cemetery (see Figure 155), the likes of which is again comparable to the discoveries at Bryn Celli Ddu and Ty Newydd. Little can be seen in the LiDAR data other than the tombs supposed location being close to or on top of an upland ridge and the name Carreg yr Fran translates to the Stone of the Crow or Ravens stone. Again, this may suggest some type of megalithic monument giving the name to the place along with the corvids that must have frequented the area (as carrion feeders). It is clear from the satellite cropmark data that this area although known about with the previous location of a tomb is understudied with unexcavated barrows, likely of the Bronze Age yet to be discovered.





*Figure 155: Aerial photos of Carreg y Fran study area. Selection of cropmarks discussed are highlighted with red arrows*



*Figure 156: LiDAR survey of Carreg y Fran study area.*

### Cors Y Bol (Llantrisant)

Cors Y Bol which translates to the Belly of the Marsh displays an unusual earthwork at the location that is thought to once contain a ring cairn. Cors y Bol itself refers to the marshland which now lies underneath the present reservoir of Llyn Alaw. From both the LiDAR and satellite imagery (see Figure 157) it is clear that this site is not lost and quite visible from the air and appearing clearly as a standing earthwork according to the LiDAR data (see Figure 158). Its location within the marsh may make it a site which is difficult to approach and periodically disappear at times when the floodplains fill with water. It is quite likely however that remains could still exist at this site with good preservation, especially if its watery location has provided an anaerobic environment, if this is the case then organic remains may have survived and would make the possibility of findings surviving artefacts such as this a discovery of high importance. It is also possible that this site is in fact Iron Age rather than Bronze Age in origin, with its location close to a natural water source would echo the discoveries of ritual sites a Llyn Cerrig Bach. Excavation of dateable artefacts would be required to confirm this theory. The site sits on the edge of a marsh and an upland area to the east, a possible circular anomaly is visible on the upland ridge and could be associated with the earthwork within the marsh. A site visit conducted on the 28/6/2021 identified several confirmed cup mark stones which had previously not been reported on, all of which are focused on an area of marshland which evidence of peat deposits (Landowner, per comms.). The depth of the peat beds,



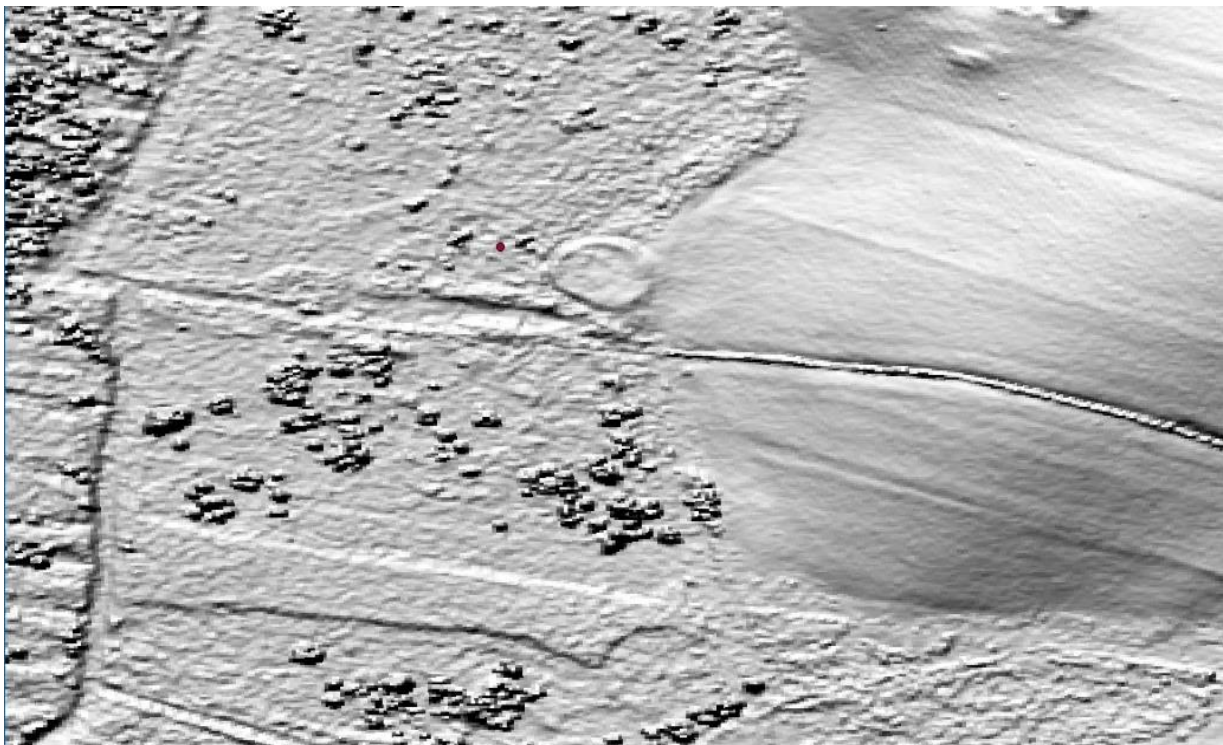
measuring approximately over 1 metre in some places, suggest the significant potential of archaeological material (both organic and inorganic) surviving in good condition within the immediate vicinity of the monument.

Furthermore, a line of large boulders was observed to encircle an upland area adjacent to the marshland area, which is suggestive of a possible early enclosure which may be part of an unrecorded Iron Age marsh fort. A short distance to the west, a multivallate marsh fort, known locally as Y Werthyr, can be seen. The name y Werthyr has been translated as meaning ‘a place where things are sold’, and was argued by Smith and Hopewell as, given its appearance, appearing as a cattle ring in the landscape (2007; pp. 23). Although heavily ploughed in some areas, geophysical survey work conducted by Gwynedd Archaeological Trust in 2007 which suggested a multiperiod site spanning from the early Bronze Age to the late Iron Age in date (*ibid*, pp. 18-20). Either way the evidence of cup marks on the outcrop prove late Neolithic and Early Bronze Age activity in the vicinity, and make it likely that the earthwork is the remnants of a prehistoric burial of these periods.

A significant number of prehistoric sites and findspots are recorded to exist around Cors y Bol, suggesting that the marsh may have been the focus of ritual activity over a long prehistoric period. These include place names such as Meinir (Maen Hir or ‘Standing Stone’) in Rhodogaidio (Smith 2003; p. 33), the discovery of Mesolithic activity near Penbol Uchaf (Smith 2007; p. 53); a possible Iron Age head at Llanbabo Church (relocated from the churchyard wall); and a standing stone and possible chambered tomb and standing stone at Bod Deiniol (Smith 2003). Further study would help to clarify this in the future.



*Figure 157: Image of burnt mound at Cors y Bol (Bodnolwyn Wen).*



*Figure 158: LiDAR survey of Cors y Bol (Bodnolwyn Wen) study area.*

## Llechylched

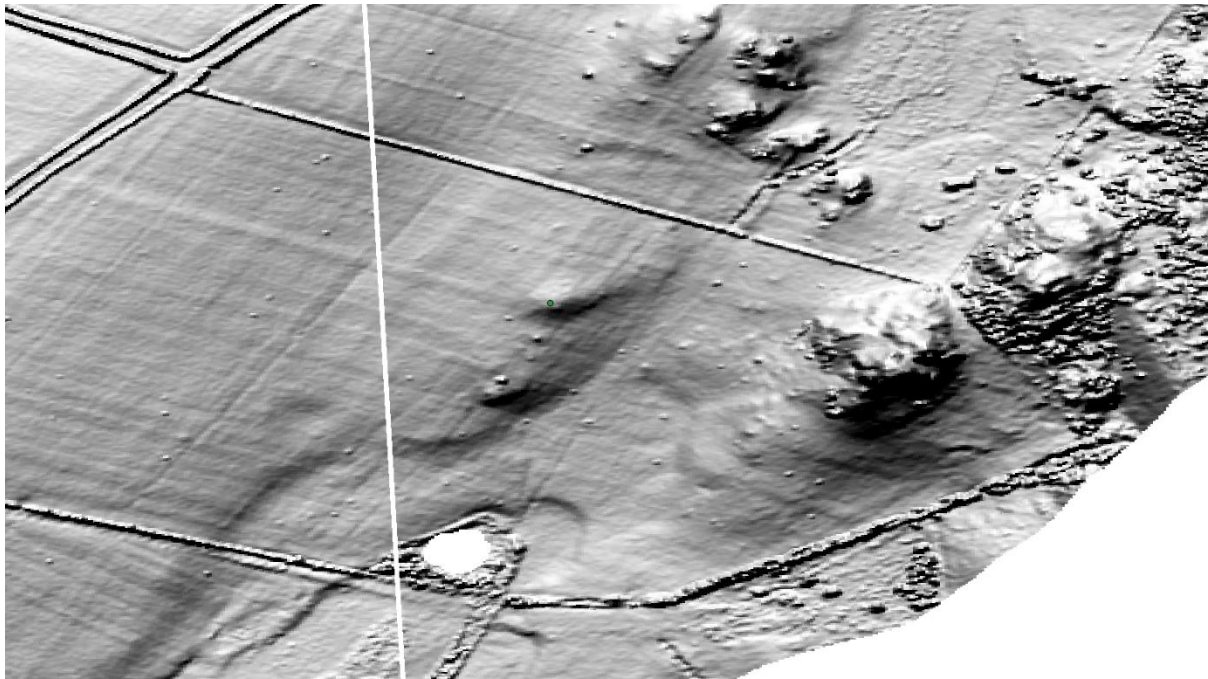
The supposed site Llechylched (the Stone/Slate of St Ylched) can be found atop an upland ridge close to the A5 between Gwalchmai and Bodedern. The name possibly derives either from the remains of a destroyed tomb nearby or may possibly refer to a now lost standing stone near the vicinity of the church, a similar origin to a lost example recorded near Llechgynfarwy (The Stone/Slate of Cynfarwy) church, several km to the northeast (Richards 1972; p. 158).

There is little in the way of cropmarks or LiDAR anomalies that would indicate satellite burials but a linear anomaly visible on the LiDAR (see Figure 160) seems to follow the line of the bottom of the ridge to the west of the apparent location of the now destroyed tomb at Llechylched. Not much else can be said about this site from the aerial and LiDAR, mostly on account of the rugged outcrop hiding any potential features but the possibility of satellite remains cannot be ruled out with a walkover survey being recommended to establish if any earthworks survive and drone flyovers in dryer months could reveal cropmarks.



*Figure 159: Aerial photo of Llechylched study area. Linear anomaly highlighted with red arrows.*





*Figure 160: LiDAR survey area of Llechylched study area.*

## Trefor

Trefor translates to ‘Town by the Sea’ and it is suggested by Arwyn Owen (per comms) that this name is tongue in cheek, on account of its inland location north of the town of Llangefni several miles from the ocean. It is also the only site looked at as part of this study whose name does not imply a possible stone or tomb at the site. There is little to be seen in the location of where the site is marked (see Figure 161) apart from the area is on a square upland platform surrounded by lowland reeds and a large circular anomaly due east of the site.

Thomas Pennant refers to twin ‘cromlechs’ in the vicinity of the hamlet (1784, vol 4; p. 254). Both monuments have since been lost, and it is assumed that they were destroyed to clear land for farming purposes by the Nineteenth century.

Unfortunately, the exact point offered by the GAT report lies in the conjunction of four of the LiDAR grids and so cannot be seen clearly (Smith 2003, see Figure 162). Despite this a circular and sub-rectangular anomaly can be seen on a rocky upland area. This raised upland platform also has a circular anomaly on top of it which lies to the west of the proposed site for the lost tomb and again could be evidence of satellite burials likely of the Bronze Age.



*Figure 161:Aerial image of Trefor study area.*



*Figure 162:LiDAR image of Trefor study area.*



## Tregarnedd, Llangefni

The name Tregarnedd translates to the Town of the Cairn and is another example of the place name suggesting the area contains burials of earlier date. Earlier literary references to this tomb suggest that it may have been similar in shape and appearance to Bryn Celli Ddu and may have had a cruciform plan (Lynch 1991, pp. 76-9). The GAT report describes this destroyed site as simply a mound with no remarkable features (Smith 2003, p. 100). Unfortunately, it would seem that the reason for this site's destruction is that it has been developed upon (see Figure 163). But the surrounding fields that do not contain structures show a linear path to the west and a sub rectangular anomaly to the east. It is possible that the linear is an old route or cursus and the sub rectangular anomaly could be a structure of unknowable date without excavation being carried out.



*Figure 163: Satellite image of Tregarnedd site, Llangefni.*



*Figure 164: LiDAR image of Tregarnedd Survey Area.*

## Lost tombs of Anglesey: Conclusion

The results of this limited landscape study has shown that the majority of the sites can be found atop or close to upland areas, with several anomalies possibly associated with burial sites of the prehistoric such as later ring ditch burials of the Bronze Age period and these findings are to be expected from the prehistoric sites on the Isle of Anglesey and have been found time and time again with large scale geophysical surveys of the sites at Bryn Celli Ddu, Llanfechell and Ty Newydd. This simple small-scale study shows that even with limited resources such as the open access data from satellite imagery and LiDAR, basic overviews of landscape can be easily made, with the possibility for the discovery of previously unrecorded anomalies such as the circular, linear and rectangular features found surrounding the lost tombs in the areas of this case study. This also begs the question that the protection of sites such as these should not be relegated to the known location of the upstanding monuments of Anglesey but also to the lost tombs and surrounding monuments. With the ease in which aerial photography data, LiDAR and historical map regressions can be obtained it is important that all these techniques be used to study the surroundings of supposed and suspected sites ahead of visiting and should also be considered with the scheduling and protection of monuments on the island.

## The Shipwreck of Time - Some Notes on Preservation

*'Antiquities are history defaced, or some remnants of history which have casually escaped the shipwreck of time.'*

*-Francis Bacon (1605)*



*Figure 165: Mynydd Bodafon, Anglesey. A megalithic tomb was recorded as having stood near this spot, depicted by both John Skinner (1802) and Longueville Jones (-) over subsequent visits. By the early 20th century the monument had been completely destroyed for ro*

A road trip across Anglesey is like travelling back through time in many respects with the agricultural landscape having changed extraordinarily little since the Medieval period onwards. For this reason, a high number of ancient remains have survived the ravages of time up until the present day. This similar level of preservation can be seen on the Isle of Man, Skye and Orkney but also can be seen in the agricultural areas of mainland Britain such as Cumbria, Yorkshire, the Scottish Highlands, as well as much of the mountainous areas of the Welsh mainland that cannot be heavily developed.

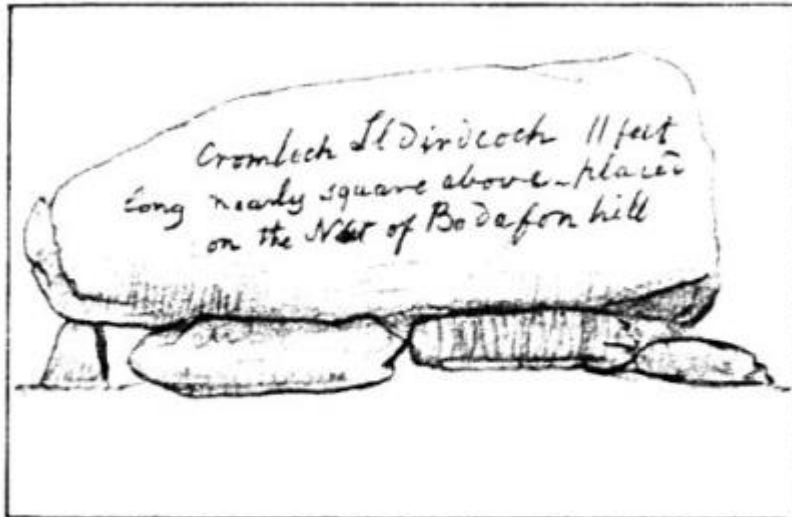
The Isle of Anglesey is only 260 square miles and can be driven across in about half an hour in any direction and it is this small area which is likely the reason for the longevity of use of the sites on the island. The Island itself was known as the mother or breadbasket of Wales in the Medieval period on account of the yield from the harvest of the island being able to feed the entirety of Wales and it is this fertile patch of land which would have been much sought after by the prehistoric folk of Wales from the Neolithic period onwards.





*Figure 166: etched print of collapsed megalithic tomb at Bodafon Mountain, Maenaddwyn. Comparisons can be made with short, stumpy orthostats used here as those which appear to have been used at Bedd y Foel (Williams 1867).*

As far as the preservation of the monuments of the island is concerned there is much documentation on the destruction of a number of the ancient monuments, with the cairn material of Bryn Celli Ddu and Bryn Celli Ddu Bach being completely denuded during the 1700's. Following this a number of tombs such as Cromlech Farm at Llanfechell being partially demolished with dynamite by the early modern period, its stone and fabric used for nearby field boundaries (Smith 2013, pp. 3). The destruction of another cromlech at Mynydd Bodafon (Williams 1867, pp. 334 – see Figure 165 for a present view of the site) is also reported by the end of the nineteenth century (Allen, 1897). Interestingly, this particular cromlech would have been in clear view of the one excavated at Pen y Foel as part of this research project. Furthermore, its construction, consisting of a large capstone with small orthostats, is broadly comparable to the possible structure composition of the tomb at Bedd y Foel. This being said a high number of prehistoric structures still stand in some form on the island with an incredible 89 scheduled prehistoric sites being recorded on the island.



No. 50a. Cromlech on Bodafon Mountain.

*Figure 167: Sketch drawing of the collapsed megalithic tomb at Mynydd Bodafon by John Skinner (1802).*

An interesting observation from the geophysical surveys carried out at Bryn Celli Ddu and the Llanfechell monolith as part of this study is that it would appear that the standing stones at these sites are associated with circular anomalies, this is especially evident at the 3 and a half metre standing stone known as Tyddyn Bach that overlooks the sacred landscape of Bryn Celli Ddu to the west. The magnetometry survey data clearly imaged a 30-metre circle that once incorporated the now single standing stone, and it is likely that Tyddyn Bach is the lonesome survivor of a monument that was once a stone circle. It is also likely that the large clearance cairn piled up at the foot of the monolith could contain some of the remains of the stones of the circle. The same can be seen at the single standing stone at Llanfechell where 4 or possibly five anomalies which give off a similar magnetic reading to the stone in the area make a sub circular shape in the landscape and it is likely that the same is true of this site; that it was once a stone circle. This has been proven at other sites with standing stones through excavation such as at Bryn Gwyn stones that the standing monuments are only a fraction of the site that survives, and it is possible that the two large standing stones on Holyhead known as Penrhos Feilw are all that remains of a stone circle.

The reason that some of these stones may have survived may be found outside Anglesey in the north of England. In Lancashire lonely hawthorn trees can often be seen stood in the centre of fields and often as part of linear features in the landscape. These trees were once part of a hawthorn field boundary and legend has it that when it was time to remove these boundaries,



the workers would leave one lone tree standing to appease the spirits of nature that might be upset by the destruction of these trees. It is possible that superstition is the reason for the proliferation of standing stones yet lack of stone circles across the island. As the farmer destroyed the stone circles to reclaim his land for farming one was left to appease any ancestral spirits that might have problems with their removal. A tale from Cumbria recounts the farmer calling upon workers to destroy the stone circle known as Long Meg and her 7 Sisters. As the workers began the removal a storm brewed up and the workers fled believing the storm was a sign that the spirits were upset by the circles attempted destruction. The stones still stand in Cumbria to this day and storms are still a common occurrence in the region.

# Chapter 10:

## Discussion: The Rock Art of Anglesey

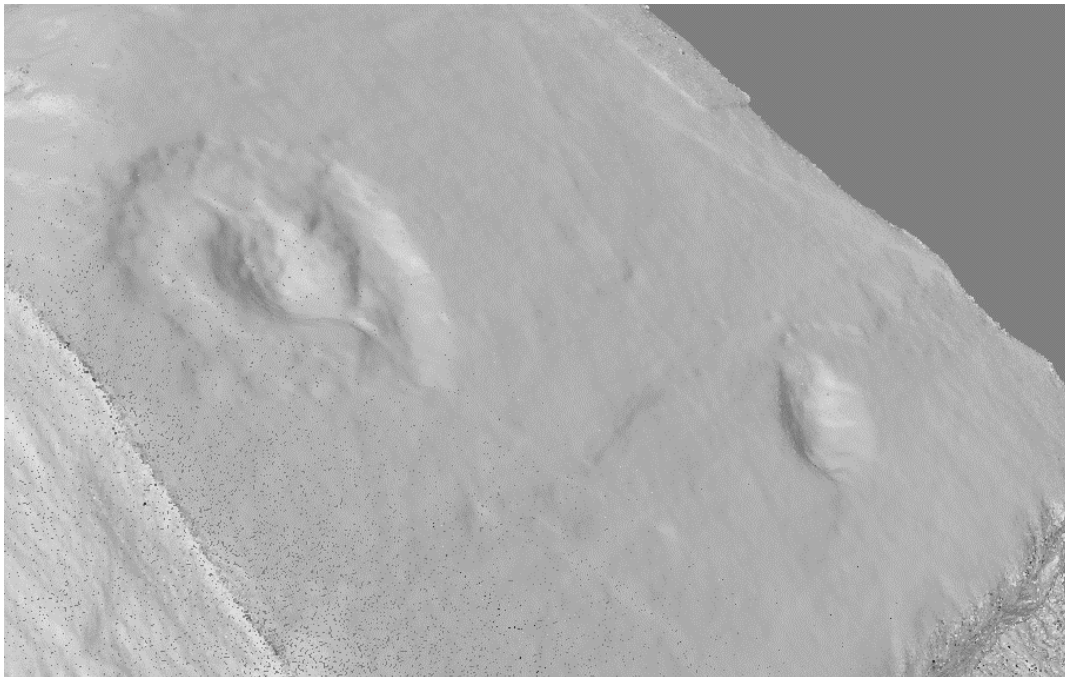
### Introduction

The author believes that the main factor that separates the discovery at Bedd Y Foel and the tombs that have been researched as part of the previous chapter is the complete lack of any rock art found either on or close to Pant y Saer, Lligwy or Glyn. At Bedd y Foel cup marks have been reported as visible on both nearby outcrops as well as the capstone itself. This feature makes the tomb more comparable with Ty Newydd which has already been detailed in the literature review and discussion of this research paper, with cup marks on both capstones, and on the Cunogusi standing stone within the landscape of Ty Newydd. It is clear that cup marks and Late Neolithic and Early Bronze Age rock art is an important part of these sacred landscapes, and the next section of this study will closely look at the phenomenon of cup and cup and ring art alongside the spirals, arcs and plethora of symbols found in the petroglyphic catalogue of this era in Europe.

One constant across all the sites covered in this thesis is that rock art in the form of cups, spirals and cup and ring can be found in the surroundings of these sacred Neolithic and Early Bronze Age sacred spaces. In the case of Bryn Celli Ddu spirals and irregular linear pattern can be found within the chamber and also on the pattern stone, which was buried in the centre of the enclosure. However, this stone is thought to have once been stood upright on account of both sides of the large flat stone being covered in rock art. Cups can be found in the nearby outcrop to the west of the tomb and further afield on outcrops to the southwest. The entirety of the landscape was searched for rock art and, although the North-East of the site is not devoid of outcrops, no rock art was found in this direction.

Ty Newydd has two visible cup marks on top of the capstone (Crewe, 1983) itself which is thought by Smith (2003. Pp 18) to have no discernible pattern and he mentions that they are artefacts rather than art. This is presumptive as recent discoveries in this research project prove they could be referencing the nearby satellite burials. Alongside the cup marked capstone on the Cunogusses stone which is 1.4 km to the southwest this landscape has its fair share of rock art associated with both the tomb and monolith.

The Llanfechell monuments have several recorded cups on a small section of outcrop in between the badly destroyed tomb at Cromlech Farm and the enigmatic monument known as the Llanfechell Triangle. Another example of cup mark and cup and ring mark decoration was discovered on the packing stone for the Penbodeistedd standing stone, these were discovered when the monolith toppled due to the land having become waterlogged following a particularly wet year (see Figure 169). The cup and ring marked stones of Anglesey add another intriguing style of artwork being found on the Escob Farm, but also on what can be described as portable piece found at Clegyrdy Bach near Talwrn (for 3D printout see Appendix 14). The object consists of a stone with two large gouged-smooth cup marks, with associated concentric rings, as well as a possible third cup mark nestled in between the two primary ones. As a portable stone it is quite rare in Wales and are usually found in Northern England and Central Lowlands of Scotland (Jones, Oriol Môn, per comms.). However, contacts between Anglesey and the North of Britain are well attested in the archaeological record, given the discovery of several axe head findspots (see Lynch 1991 for examples) as well as examples of rock art previously recorded in Central Anglesey (see pp. 71 and 130-33 of this thesis).



*Figure 168: Photogrammetric mesh (MeshLab) of cup and ring marked stone; Penbodeistedd (Llanfechell).*

Most importantly it was the cup marked stones discovered by Arwyn Owen that lead this research project to the undiscovered tomb atop The Foel just outside of Llanerchymedd. Stone 2 was found at a height of 116m OD with Stone 1 being part of the outcrop at the top which is at a height of 119m OD, a gradual slope separating the two sites. Stone 1 has at least 7 cup

marks upon it which are clearly visible with the naked eye and stone 2 has at least 14, nearly all of which have become weathered almost to invisibility but are made clearly visible with the mesh of the 3D model created of this stone for this research project (Owen 2020; pp. 71-3).

It is clear that cup and cup and ring rock art played an important part in the creation or decoration of sacred liminal spaces in the Neolithic and Bronze Age. However, the exact purpose of these petroglyphs has defied any confident attempt at understanding the meaning of these symbols, and it is likely that this information has unfortunately been lost in time. Despite this, this case study will attempt to dive into the available evidence from the British Isles and will compile the data and suggestions as to the purpose or meaning proposed by previous researchers to see if there is any way to further understand these mysterious markings hewn into the sacred prehistoric landscapes of the British Isles.

A corpus of rock art motifs has been created by Scotland's Rock Art project, with a massive amount of prehistoric rock art panels being discovered and recorded by this group throughout Scotland. This collected library of prehistoric symbols proposes 11 categories with over 55 variants within these categories which include cup marks, simple rings, cup and rings, partial rings or arcs, ovals, radial lines, rosettes, grooves, keyholes, spirals and other motifs such as grid like linear inscriptions and later possibly biblical cross petroglyphs ([www.rockart.scot](http://www.rockart.scot)). Although the rock art of Anglesey and North Wales in general does not have the variety that is found in Scotland, Northumberland and Yorkshire, a great deal of variation can be found within the Irish style cruciform passage tomb at Barclodiad y Gawres with spirals, linear motifs and lozenges found hewn into the megaliths that form the chambers of the tomb itself. At Bryn Celli Ddu both cup, spiral and linear motifs can be found within the tomb, beneath the tomb on the pattern stone and in the surrounding landscape on the outcrops to the west and southwest (See Bryn Celli Ddu results section). Site visits and study of the existing material has shown that the most often used symbol on Anglesey is the simple cup form although this will be more closely analysed as part of this case study.

One of the most iconic rock art sites in the Irish Sea zone is the massive passage tomb at Newgrange in the Boyne Valley, Ireland. This site is covered in 10 different varieties, 5 circular or curvilinear in form and 5 linear such as the lozenge form which is comparable with Barclodiad on Anglesey (O'Kelly, 1983, pp 146). The rock art on this tomb dates to the tomb's construction around 3200 BC and the form and execution of the rock art, especially the

exquisite spiral and lozenge design upon the entrance stone shows a sophistication that isn't seen on the simpler cup and ring forms across Wales and England and has more parallels with the French forms that can be found at sites such as Gavrinis, Brittany (France - Cassen et al 2018). The nearby tomb at Knowth (co. Meath, Ireland) also has exceptional examples of rock art with kerbstone (K15) displaying a motif that has been likened to a sky calendar (Mackie 2013, pp. 216-7). It is possible that this rock art found on the Irish tomb tradition is earlier with the cup and ring forms being attempted copies of the more complex spiral forms although complex spiral inscriptions can be found across Cumbria at Little Meg (Barrowclough 2010) and on the Orkney stone balls found at Skara Brae (Marshall 1977; pp. 45-53). The cup mark does seem to be an ever-present addition to these sites and has been thought to be a by-product of some other function in some cases (Nash 2021).

The identification of cup marked stones can be tricky as natural geological processes can often look like rock art when in fact it is a natural phenomenon such as pebble casts. When the stone is in its formative millennia it can have a consistency much like mud, pebbles can stick into the surface and when the stone hardens these pebbles can fall out, leaving a depression. These pebble casts can have sharp angles at the edge of the depression whereas cup marks have a gradual angle into the depression. It is thought that the process behind the creation of cup marks and other rock art and is going to be one of two methods, either by direct or indirect force. Direct force is the basic technique of hitting the outcrop or standing stone repeatedly with a stone. The stone will never hit the same place exactly twice and this gives the gradual angle of the depression. The second technique is more accurate and is likely the method used in the creation of rings, linears and any form of rock art that requires an added level of finesse and this is indirect percussion. A stone is placed on the area to receive the artwork and this stone is then struck on the opposing end by another stone. It is likely that all of the artwork on the pattern stone at Bryn Celli Ddu was created in this way.

### Llwydiarth Escob, Llanerchymedd: 3D Photogrammetric Exercise

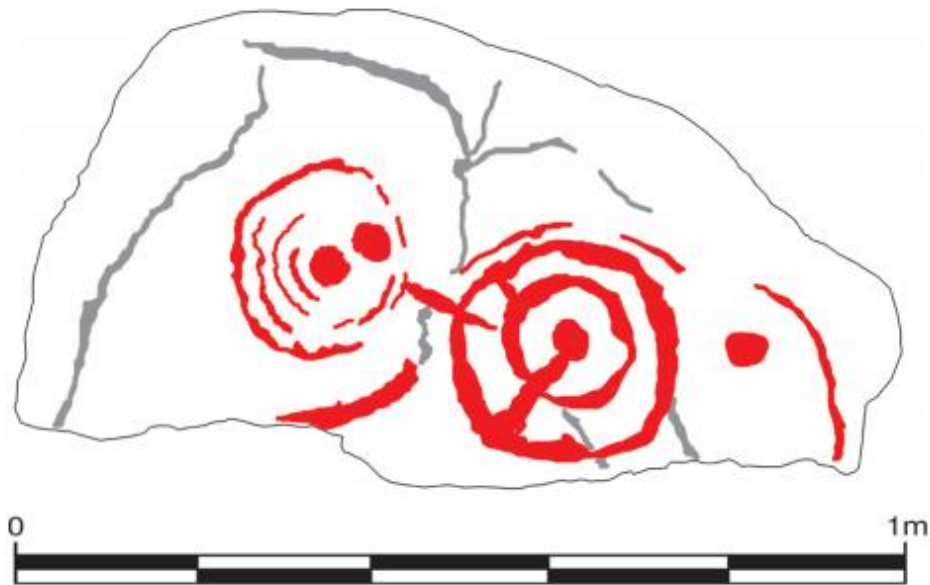
The study of cup marked stones on Anglesey is relatively new with Lynch claiming that there had been no recorded stones bearing these motifs until the discovery of the Llwydiarth Escob stone near Llanerchymedd (Lynch, 1974 & *ibid*, 1991; p. 350). This stone was moved to the front of the main house from its original location, before being relocated to the external farm buildings at Llwydiarth Escob, now surrounded by several Roman rotary querns and other pieces of carved stone found nearby. The cup-marked stone lies 864 metres due east of the



recent discovery at Bedd y Foel that was excavated as part of this research project. Llwydiarth Escob farm was once home to antiquarian and collector of ancient artifacts, Thomas Pritchard, in the early 20<sup>th</sup> century and it is thought that he found and retrieved this stone from somewhere in the surrounding area. Despite his meticulous involvement at other archaeological sites such as Pant y Saer (Williams 1875), there is no known written account in any academic sources about both the previous location of the Llwydiarth Escob stone and the recently excavated Bedd y Foel. A collection of personal letters and correspondence to Jane Bown (his daughter) failed to provide any further information other than what was previously discussed, which suggests that its original location has sadly been lost (unpublished, per comms.). Lynch (1991, pp 351) likens the motif, which she describes as a carving with 4 cups and 2 sets of rings, to rock art panels from Southwest Scotland, Northumberland and the Pennines. Lynch also mentions that the stone is composed of a rare Hornblende Picrite which can be found in various outcrops at Llannerch-y-medd and suggests that the source material did not travel far (*ibid*). As we know from the excavations at Bedd-Y-Foel much of the stone excavated from the area of the destroyed tomb also comprised of this rare geology and it is possible that Pritchard took this stone the 864 metres from the Foel to the farm but unfortunately this can only be speculated without the rest of the Escob stone being located. The lands owned by Llwydiarth Escob do take into account the southern base of the Foel, where a possible outcrop of this Hornblende Picrite stone was observed in a field directly south of the excavation site (SH 42738 83928).

The Llwydiarth Escob stone was drawn by Lynch (1991, pp 350) and was further analysed by Nash (Nash et al, 2010 pp 257-260) in 2010 who traced the petroglyphs onto acetate sheets to attempt a higher detailed recording of the stone. Nash (2010) also carried out small scale excavations around the stone to reveal the full extent of the rock art but found little additional evidence. This was to be expected given that the stone was undoubtedly moved from its original location some distance nearby. Since early 2021 the Escob stone has been moved from its original position by the front out the house to farm outbuildings nearby and is now supported on a flat paving slab, so the full stone is on display. Nash (*ibid*, pp 258) also notes that three high quality polished stone axes, 2 of which are of the Langdale variety with the other originating from the Graig Lwyd factory at Penmaenmawr along with a perforated hammer stone/battle axe of the Bronze Age (Lynch 1991, pp. 112). Nash also notes that the types of art and finds found in the vicinity of the Escob stone are the artefacts usually associated with a Neolithic tomb and proposes an alignment with the possible tomb at Maen Chwyf and the

Capel Coch and Mynydd Bodafon standing stones almost 2 km away (Nash et al, 2010. Pp 258).

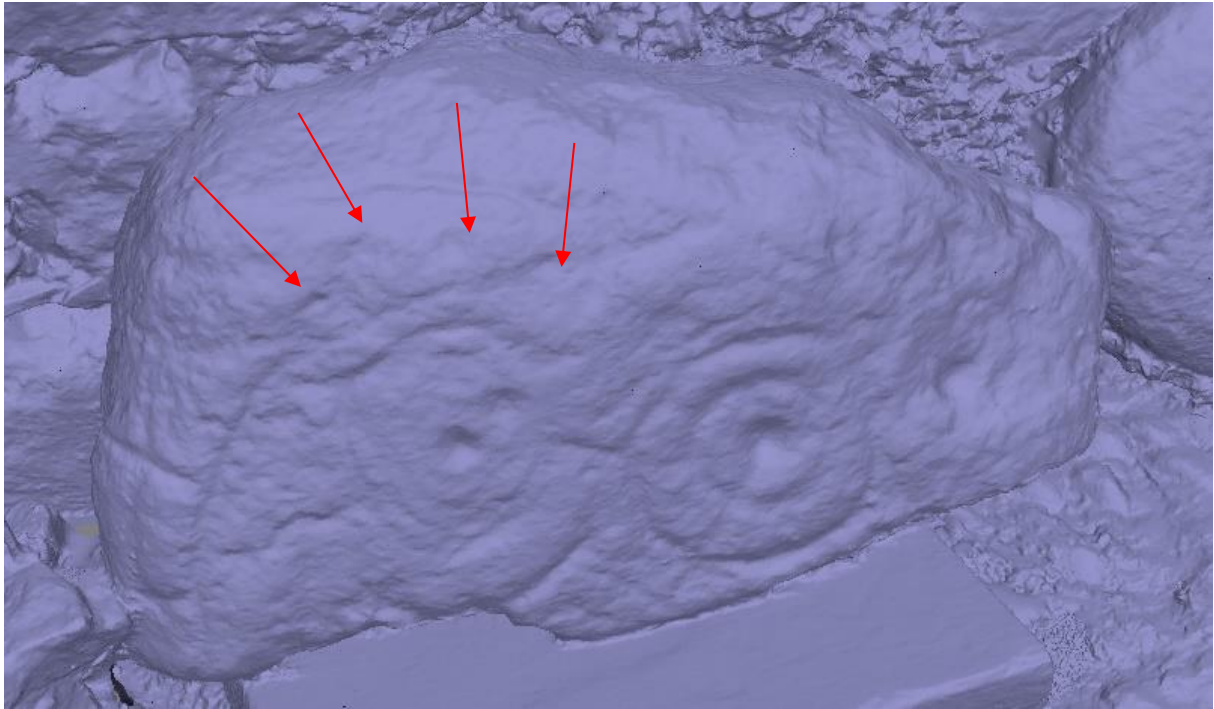


*Figure 169: Traced outline of rock art atop Llwydiarth Escob Stone (Llanerchymedd; Nash 2010).*

Part of this case study seeks to utilize 3D photogrammetric and printed models to analyse the rock art panels from a number of sites across England and Wales to closely examine the typology and form of the rock art and investigate the interoperability of these new modern techniques in not just the study and interpretation but also the presentation and preservation of these enigmatic yet hugely important pieces of cultural heritage. The Llwydiarth Escob stone has not, as of yet, received any 3D photogrammetry treatment, so with kind permission from Tom and Jane Bown (Llwydiarth Escob farm) the author took many photographs of the stone and created a digital 3D model of rock art in an attempt to get the clearest image possible from the mesh. This required the removal of the photographic layer leaving just the framework of the model, allowing for the exact contours and undulations of the stones surface to be seen and would help to reveal any heavily worn elements of the stone now invisible to the naked eye. Further processes applied to the mesh including a shader known as Lambertian radiance scaling, which sets shadows into the deep recesses and light to the prominent areas can help show lost pieces of weathered rock art on the surface.

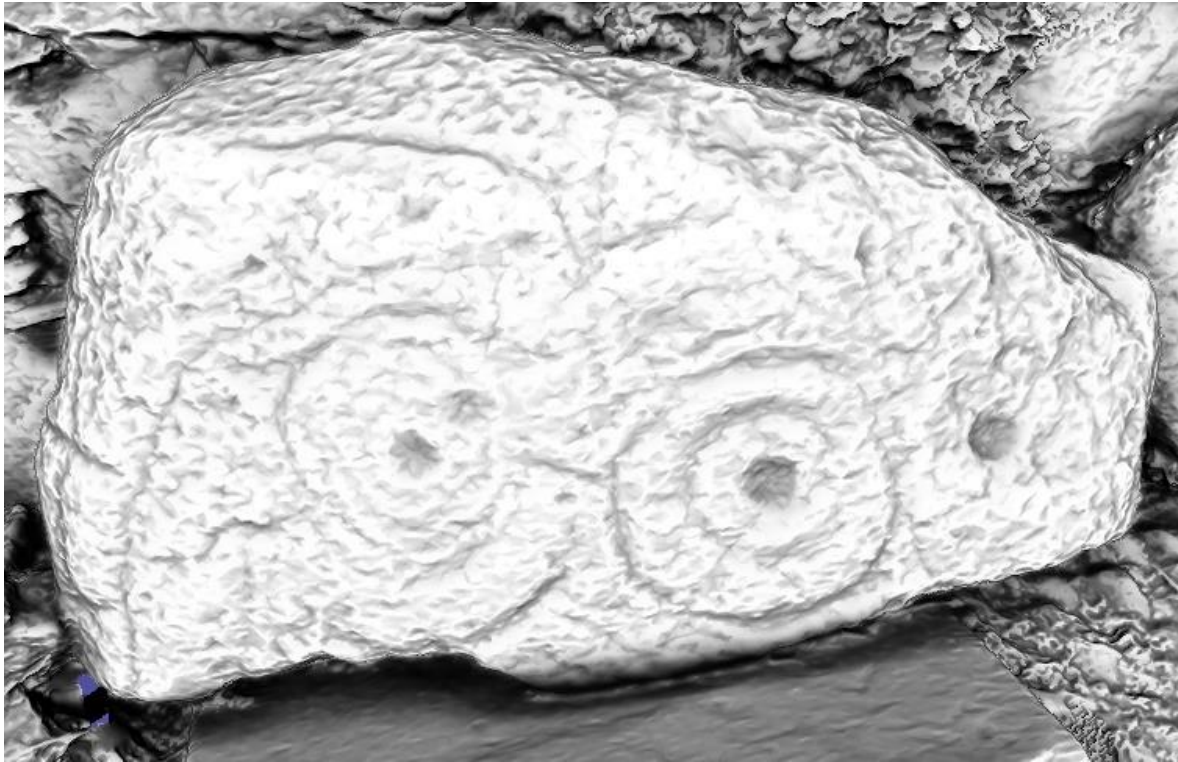
The 3D photogrammetric model of the Escob stone was a success providing the clearest image of the petroglyphs to be recorded to date, with the findings of a number of ephemeral cups marks above the cup and quadruple ring and the possibility of the third cup and ring to the far

right of the panel. A cross engraving can clearly be seen on the side of the stone, and it appears that the cup and ring petroglyphs have been enclosed by a linear groove with a dimpled effect across the top of the stone which is directly comparable with the texture atop the standing stone to the west of Bedd Y Foel, although this could be natural.



*Figure 170: : Photogrammetric mesh of Llwydiarth Escob stone (Llannerch-y-medd). Additional cup marks highlighted with arrows (red).*

Further analysis using the Lambertian radiance scaling brings out further detail by applying a consistent shadow on all of the recesses of the stone and this makes further 4 cups that form an arc across the top of the quadruple ringed symbol (see Figures 169 and 170). It is noted that an arc of 3 or possibly 4 cups can be found across the rock art sites on Anglesey and this includes the outcrop beside Bryn Celli Ddu as well as Stone 1 atop the Foel. This seems to be a recurring symbol of these ancient stone engravings.



*Figure 171: Lambertian-radiance scaling of Llwydiarth Escob stone (Llannerch-y-medd), showing detail of rock art on stone.*

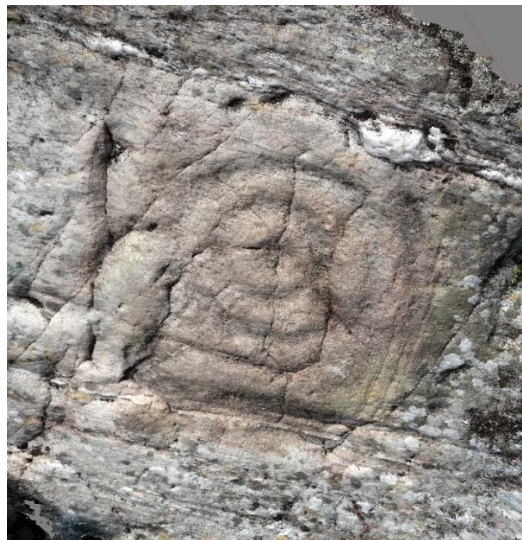
It is clear from the quality of the image of the rock art seen in the mesh of the 3D model that there was much more to the panel including three or four cups, weathered beyond recognition on the stone itself close to the top of the panel (see Figure 171). It is this location on the stone which is likely to have received more weathering, with rainfall wearing the cups down to the slightest depression that cannot be seen with the naked eye, but is detected and imaged by the 3D model. The ephemeral nature of these cups is comparable to the heavily weathered Stone 2 which was the capstone of Bedd-Y-Foel and shows that eventually if left out in the sometimes harsh weather conditions of North Wales, these ancient rock art pieces will be eventually weathered away to nothing.

### **Treferwydd, Llangaffo: study and 3D photogrammetric model**

Although rare; cup and ring motifs are not just found at Llwydiarth Escob. Other examples have been recorded at Llangefni (portable cup and ring marked stone), Llanfechell (cup and ring marked packing stone), as well as another lesser known example, consisting of a single cup and 3-ring petroglyph, at Treferwydd.

This motif (See Figure 172) stands alone on an outcrop in Llangaffo and was discovered by Paul Butler, the landowner as he cleared the outcrop of top soil to create a garden feature. After

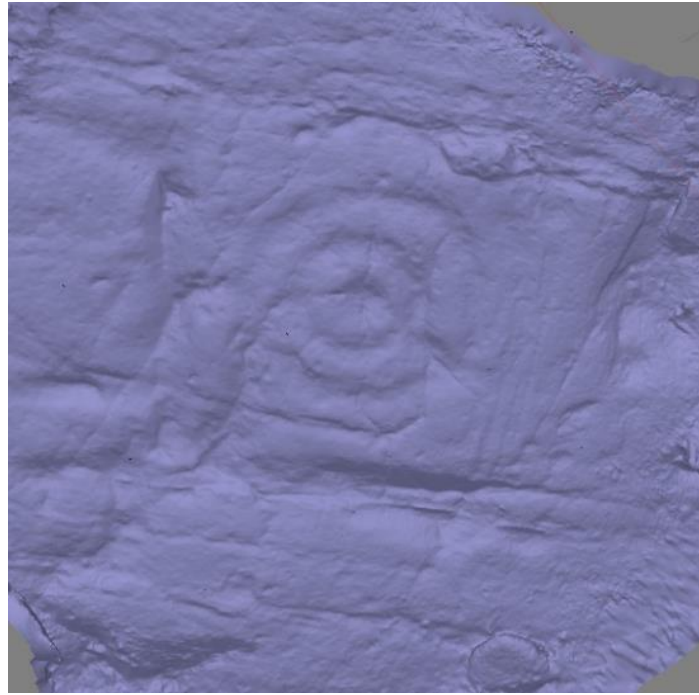
jetwashing the stone Mr Butler noticed the small rock carving and reported the finding to Gwynedd Archaeological Trust. The concentric cup and ring marked panel (see Fig 172) lies on the east side of a sloped ridge of outcrop with viewshed of the Menai Straits and mountains in the distance. The petroglyph is 180 mm in diameter with two clearly visible rings with a third heavily weathered ring on the outer edge. The motif is naturally framed on each side by natural cracks and a linear seam of quartz which looks intentional and was probably the inspiration for the siting of the cup and ring on this location along with the flat nature of this portion of the outcrop. It is suggested by Smith (2013, pp 6) suggests that this outcrop lay on an important upland routway that connects the tidal estuary found at the mouth of the Cefni River and valley of the Afon Braint, where the tomb of Bryn Celli Ddu can be found (Smith, 2013).



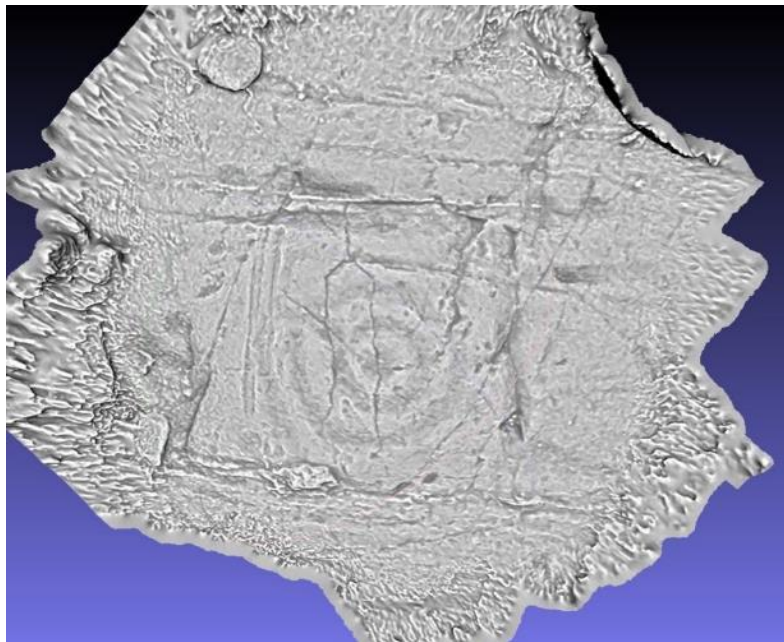
*Figure 172: Photogrammetric model of concentric, cup-and-ring marked stone; Treferwydd.*

Much like the Escob stone, the Treferwydd cup and ring had not been 3D modelled until the author's visit as part of this project. A series of photographs were taken of the cup and ring, which seemed to be more weathered than seen in Smith's (2013) report. The 3D model successfully rendered, clearly showing the petroglyph and natural markings mentioned in the previous report, with the cup being encircled by two clear rings and only a seemingly partial third ring (see Figures 171 and 172). What is fascinating with the results seen in the mesh and the radiance scaled image is the squared enclosure which seems to be man made on either side and natural at the top and bottom.





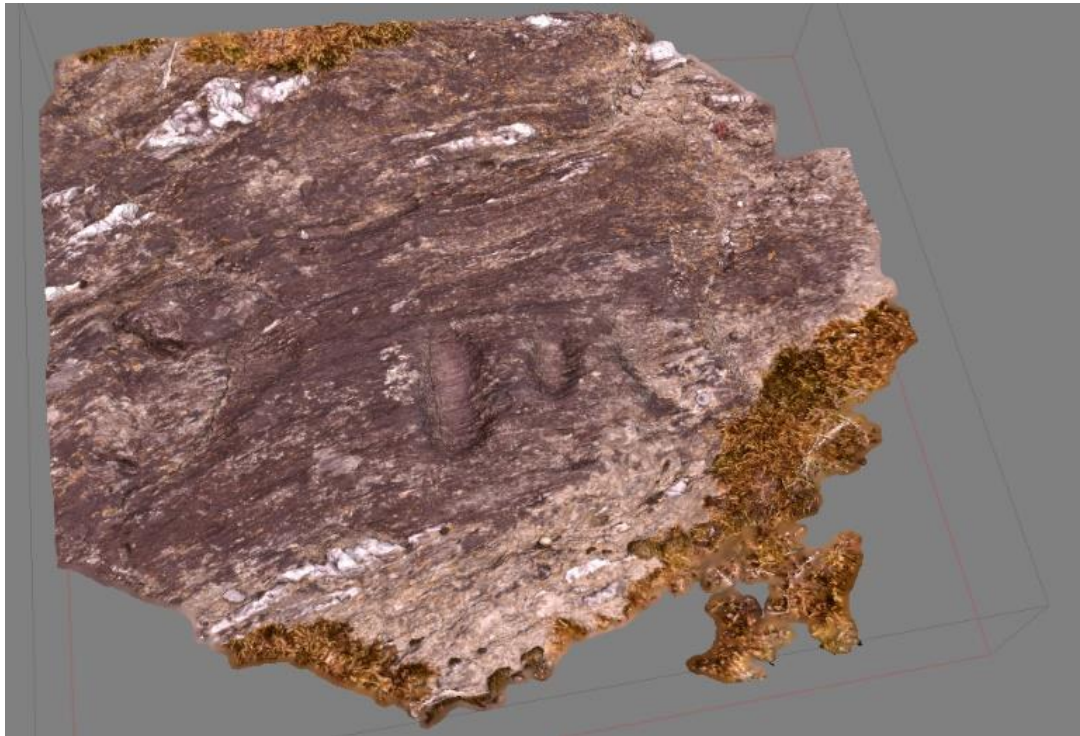
*Figure 173: 3D mesh (Agisoft) of concentric, cup and ring marked stone; Treferwydd.*



*Figure 174: Lambertian-radiance scaling of concentric, cup and ring marked stone; Treferwydd.*

After photographing the cup and ring we were lead by local resident Dr Denise Wallis to look at something unusual that she had seen on her piece of outcrop nearest her property. The author then approached and studied the outcrop, noting it as a strange chunk of stone similar to the quartz rich dolerite that directly abutted Dr Wallis' drive. This stone had been partially destroyed with dynamite to accomodate the neighbour's residence, and was no doubt much

larger originally. It was on top of this ridge of outcrop that a number of strange elongated cup marks were observed, seemingly pecked into the surface (see Figure 175). These clearly appeared to be man made and created in the same way as the cups found atop the outcrop at Bryn Celli Ddu. These markings were also photographed, with 3D models created of this previously unrecorded rock art panel.



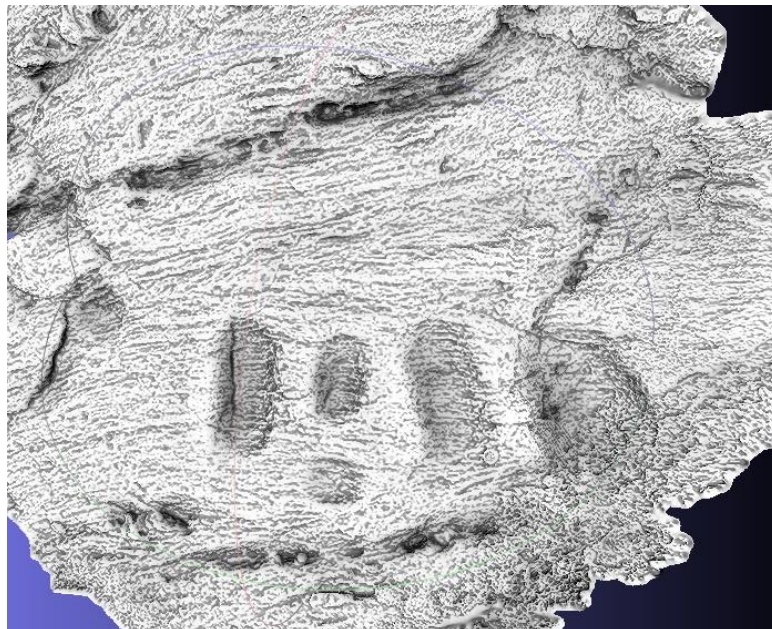
*Figure 175: Photogrammetric model of newly discovered cup marked stone; Treferwydd*

The unusual form of elongated cups had been seen before on the Cochno rock art panels in Glasgow and had been categorized as one of the cup variants by the Scotland Rock Art project with largest of the elongated cups are classed as ‘dumb bells’ (Thomson 2019). This is on account of the engraving consisting of two cups linked by a linear groove and the smaller markings being classed as courgettes probably on account of their similarity of shape to the vegetable from who they get their name. The dumbbell type is found much closer to home on the outcrop that neighbours the tomb at Bryn Celli Ddu and is interesting in the fact that the quartz rich geology is the same as can be found on this particular outcrop at Treferwydd.



*Figure 176: 3D mesh (Agisoft) of newly discovered cup marked stone; Treferwydd.*

The panel in its entirety from west to east consists of a cup and one visible dumbbell (for a clearer image see Figures 175 and 176). Beside it to the west are two further motifs, consisting of a small courgette and small faint standard cup. Continuing further west these are followed by one larger courgette and a rough, larger cup to the far west. It is possible that there is a small faint standard cup but this lies on a natural crack in the geology and thus is hard to identify as rock art.



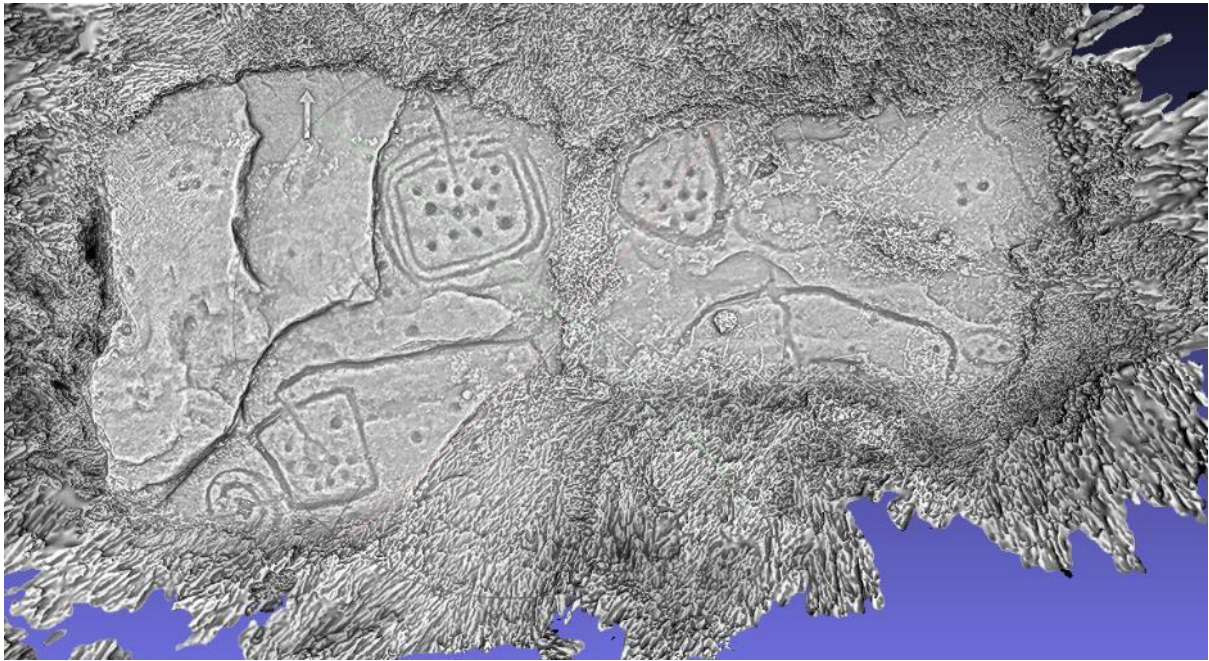
*Figure 177: Lambertian-radiance scaling of newly discovered cup marked stone; Treferwydd*



Much of the existing literature regarding rock art in northwest Wales has thus far suggested that the region is mostly devoid of rock art (Smith, 2013. Pp 1), but a cursory look at the outcrops and monuments of Anglesey shows quite the opposite to be true and it is more likely the case that a sustained effort at discovering much of the art had previously not yet been undertaken.

The results of this study alone have discovered and recorded a number of new petroglyphs on previously undiscovered panels such as atop the Foel with Stone 1 and Stone 2 and the recent findings at Treferwydd. Alongside these new discoveries are further new findings on existing rock art panels, with the use of modern techniques such as 3D photogrammetry on sites such as the Llwydiarth Escob stone and on the various outcrops surrounding Bryn Celli Ddu. It is encouraged to anyone who would like to search for traces of prehistoric art to search the sacred landscapes and upland outcrop ridges of the Isle of Anglesey as there is sure to be more evidence for cup, cup and ring and possible rare variations yet to be found. The usage of 3D models such as the ones created as part of this study are a good source for understanding the form and typology of rock art. As such, these models are beneficial in learning how to further differentiate human made markings in stone from natural geological processes such as pebble casts (which can create similar effects upon the stone). The process of the creation of these petroglyphs does have certain forensic traces that can differentiate it from natural processes that can form these depressions but in some cases with weathering and differing quality of source material, telling the difference between natural phenomenon and ancient rock art can become difficult. Creating and analysing 3D models of these depressions can aid in the identification and provide solid data that is easier to illustrate to others off site. This study has gone one step further and has printed a number of these cup marks alongside creating 3D models from several sites across North Wales and North England to provide a library of known rock art panels that can be studied physically by both the public and academics alike, so that all can become familiar with the tell-tale signs that the depressions are in fact rock art. Furthermore, these models can also be made available for people who cannot get to the sites - be they those living overseas or those that have mobility issues / restricted movement that causes them to be unable to access these often difficult to get to outcrops and standing stones. These 3D models will be made available to all for free on [www.monolitharchaeology.com](http://www.monolitharchaeology.com) and alongside this thesis to better illustrate the art pieces and the viewer can better experience the view of the art from all angles as it can be viewed on the outcrop itself.

## Northumbrian Rock Art: A Comparative Study

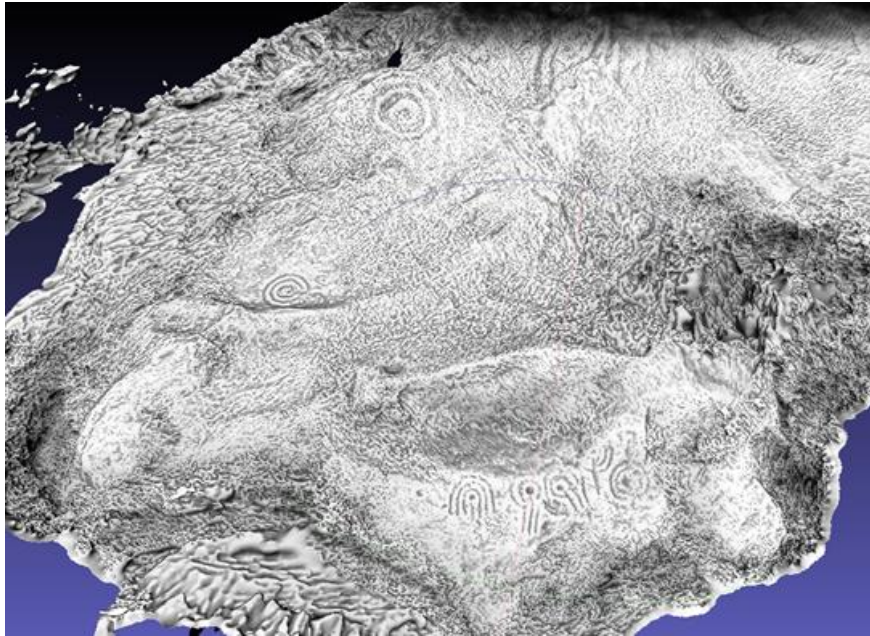


*Figure 178: Lambertian-radiance scaling of rock art panel; Dod Law (Doddington Moor).*

The rock art of Northumberland has more variants of petroglyph type than can be found on the Isle of Anglesey, which would initially appear almost basic by comparison. Examples of this more complex rock art occur at Dod Law (Northumbria – see Figure 178) with rosettes of cup marks and linear “enclosures” (at least four visible) partitioning off several cup marks (Beckensall 1983; pp. 76-8). These enclosures, rectangular or polygonal in shape, bear striking similarities to Bronze Age enclosures as seen in Southern Britain (Cunliffe 2002; 36, 42). Is this a case of art imitating life? Or maybe this is entirely conjectural? The largest rock art panel in England is Routing Linn and this has cup ring, linear grooves, and radials across a massive chunk of outcrop just outside of the Milfield Basin (see Figures 179 and 180) - an area known



for its henge monuments. This panel has also been recorded as part of this thesis and can be used as a comparison against the Welsh examples already discussed.



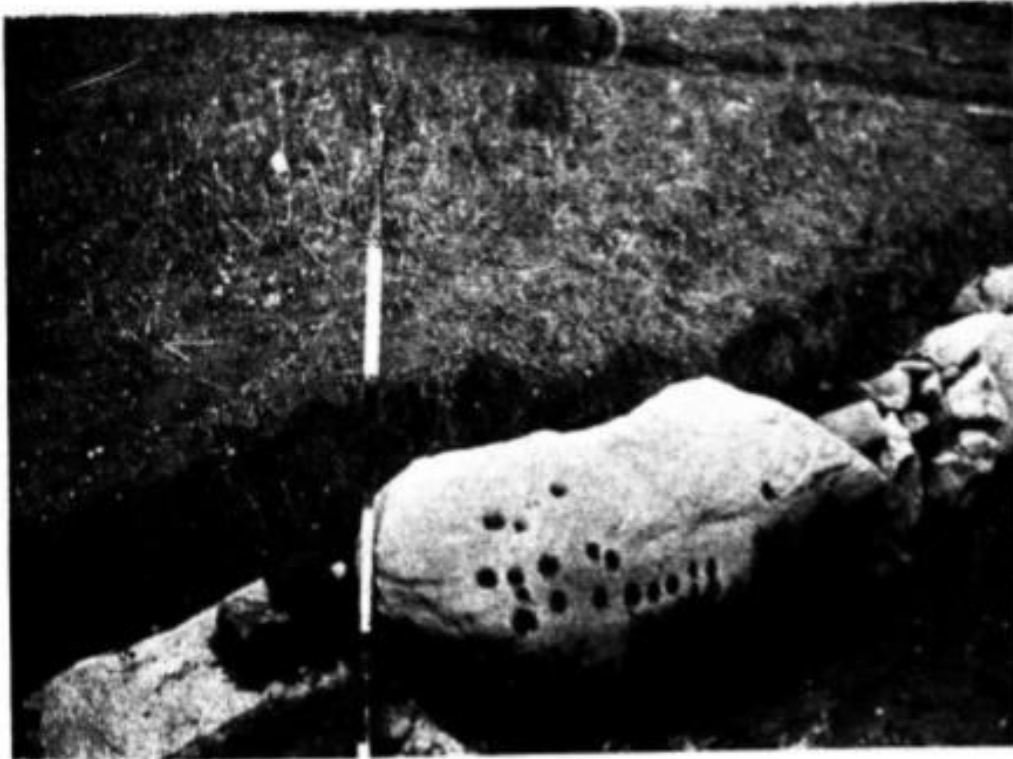
*Figure 179: Lambertian-radiance scaling of largest rock art panel in Britain; Roughing Linn (Kimmerston) – section 1*



*Figure 180: Lambertian-radiance scaling of largest rock art panel in Britain; Roughing Linn (Kimmerston) – section 2*

At this point of this case study, it is now possible to discuss the potential meanings behind these mysterious petroglyphs. Initially, the author was warned of the attempts at deciphering these rock art panels during their previous dissertation year and was told it would only lead to madness. Despite the reservations of their degree tutors the author will nonetheless attempt to come to some understanding of these enigmatic rock carvings, if that is at all possible. First, there must be some discussion about some of the pitfalls and potential problems that those

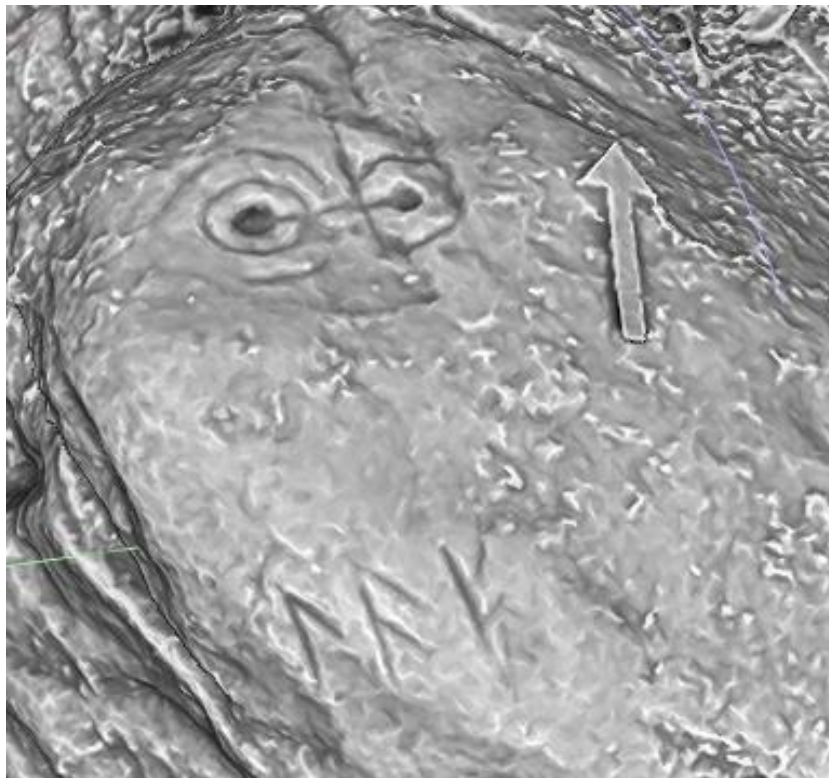
studying these features might come across regarding the analysis of meaning of cup and ring marked prehistoric rock art panels.



*Figure 181: Cup marked stone reused as kerbstone in Bronze Age barrow at Chirk, Monmouthshire (Savory 1940).*

One of the issues faced with the study of prehistoric rock art is definitively proving the ancient provenance of the art itself alongside the difficulties in accurately dating a stone. Many portable examples have been found in sealed contexts which, with organic remains preserved in the same level as the art, have been radiocarbon dated to the Late Neolithic and Early Bronze Age periods. However, there have been examples recorded elsewhere in Anglesey and Wales. The Llanfechell standing stone is one such example (see below), but outside Anglesey two cup marked stones were recorded used as structural features within a ring kerb at Crick, Monmouthshire (Savory 1940; see Figure 181). In terms of panels, examples such as these can be found at Milfield North (Woods 2018). In some cases, cup marks have been used in the construction of proven Neolithic and Bronze Age monuments which could not have been applied afterwards such as those which can be seen at Newgrange, with some cups discovered when the tomb was dismantled that were covered by large orthostats used in the original construction of the tomb (O’Kelly 1983). Similar examples have also been found at the

Llanfechell monolith with the cup and ring marked packing stone (Smith and Hopewell 2011). It must be considered therefore that some of the art on outcrop panels is originally cup and ring of Neolithic and Early Bronze Age origin with others being later additions to the panel, possibly with the artist having no idea what the meaning behind the original symbols was in the first place. It is clear on some panels that words and letters are Roman to modern in date with obvious examples such as the Lemmington Wood panel having a double cup and ring motif linked by a linear groove beside three Saxon runes (see Figure 182). It is thought that the runes, inscribed as 'læfen', translate either as 'to leave behind' or 'relic' and is thought by Beckensall to be an unknown Saxon inscriber referencing the cup and ring marked stone as an earlier, ancient feature to them.



*Figure 182: Lambertian-radiance scaling of rock art panel and runic inscription; Lemmington Wood.*

In the case of the cup marks and runes it is clear that the two petroglyphs are of separate provenance, but imitations of cup and ring have led to reservations by some scholars in identifying certain pieces of art such as the spiral within the chamber at Bryn Celli Ddu (Edwards, 2018. Per Comms). This spiral has very sharp edges with little sign of weathering, and it is agreed by the author that this piece stands out as a possible modern replica that could have been done with more advanced iron or steel tools and therefore could be from the Iron Age up to the tombs initial rediscovery and recording of the rock art.



## 'Map of the Problematique': ancient cartographic symbols? A Comparison with Copt Howe, Cumbria



*Figure 183: Image of Copt Howe, with view of Langdale in background. Rock art panel can be seen in bottom right corner of image*

Now that there has been some discussion regarding the potential problems with not all of the rock art being from the same source or period of time there can finally be a look at the potential meaning behind the symbols. Bradley (1997, pp 27) states that although the meanings behind the symbols are lost, it is worth taking note of the organisation and spatial location to identify seeming connections which could suggest this tradition was communicating standardized information of some kind. One of the most popular and suggested purposes behind complex cup and ring panels is that they are an early form of cartography. The suggestion that these panels were early maps was taken one step further at the rock art panel near Chapel Stile known as Copt Howe in Cumbria, England with a signpost once proudly proclaiming that the complex panel hewn into a massive glacial erratic was in fact a map to the nearby Langdale Axe factory.

The sign has since been removed from the site but bold claims such as this one has been made of several sites across the British Isles including several Northumbrian and Scottish examples.

The question of whether these are maps can be tested, but first an attempt must be made to understand what these sites are maps of exactly? Both terrestrial top-down land maps have been suggested of the Northumberland rock art panels, with the cup and ring possibly being representative of henge monuments that are found scattered through the Milfield Basin. However, it has also been suggested that these rock art panels are sky maps, recording the movement of the celestial bodies such as the sun, moon and stars at certain points of the year, possibly festivals such as the solstice or equinox, eclipses and planetary alignments or they could represent star constellations (Barrowclough, 2008). It has already been established with the existing studies on Neolithic passage tombs such as Bryn Celli Ddu and henge monuments such as Stonehenge that the ancient prehistoric people already had an advance knowledge of the solar and lunar calendar and this knowledge was not only used as part of the rituals used in the construction of these tombs and temples but was also required to create a calendar for an accurate knowledge of the times of year for farming practice (i.e. seasonal changes for crop and livestock management). It is also possible that the petroglyphs depicted are of locations in supernatural dimensions, such as the journey to an afterlife, endogenous journeys influenced by psychedelic experiences or other alternative dimensions similar to the aboriginal dreamtime.

The rock art panel at Copt Howe is thought to be a map up to the stone axe factory from the rock art panel at Chapel stile which is a distance of just over 3 miles but involves summiting the Great Langdale mountain. The axe factory which lies between the highest peak of Great Langdale and the Pike of Stickle can be seen by the scree slope that pours down between these two peaks. This scree slope consists of debitage material from the creation of rough out axes which were knapped at the mountains peak and there brought down into the valley where outcrops with deep grooves worn into them are evidence of the polishing process that would have taken many hours on account of how hard the green volcanic tuff is. The quality and lustre of the polished examples discovered through excavations across the British Isles, Ireland and Europe show that this item was of a high status and the collection of the source material from this dangerous mountain slope adds another layer of mystery as the stone could be sourced from lower areas on Langdale. It is thought that like much of the evidence of the lives and deaths of the people of the Neolithic Age, these axes were also steeped in deep rites connected



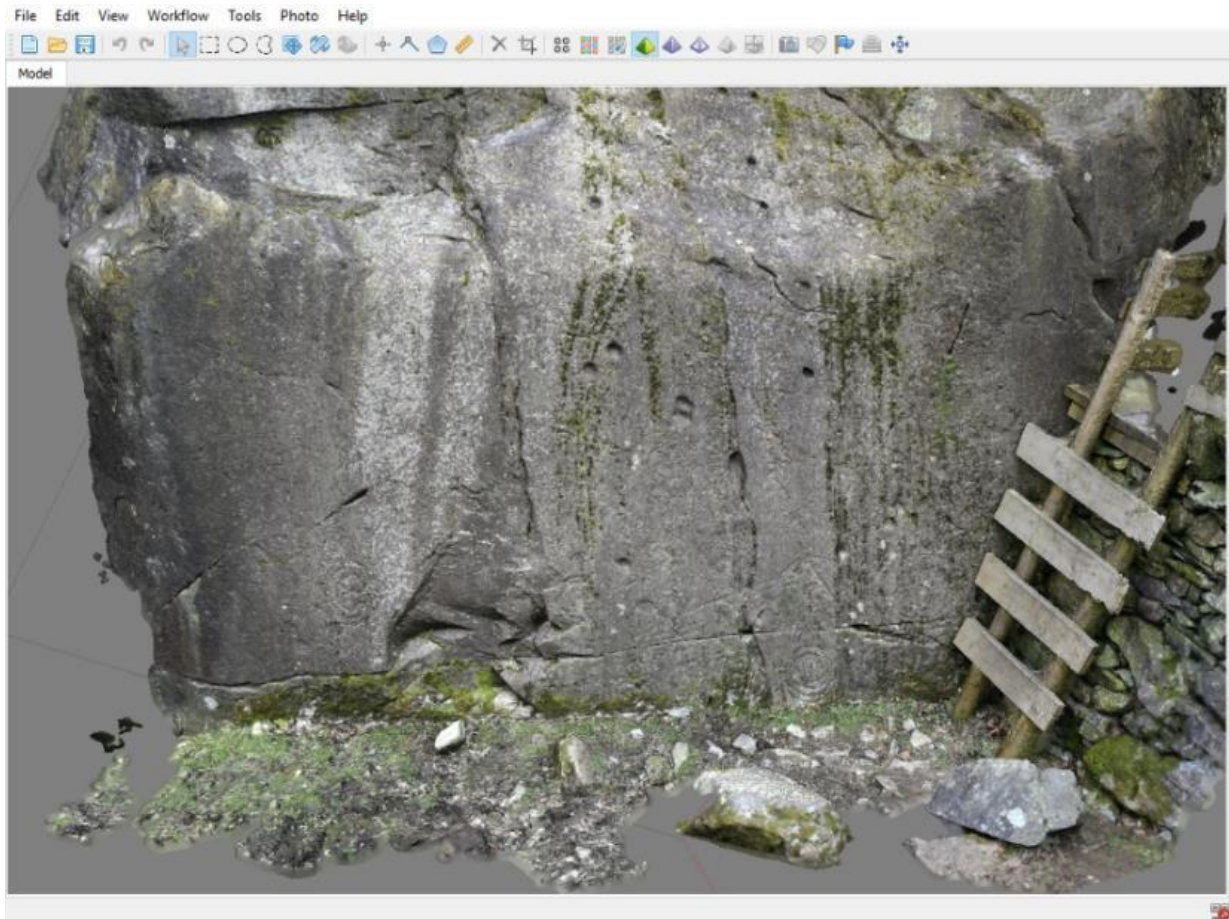
to a forgotten religion with the journey to the top of the mountain part of the process of the creation of these amazing, polished stone axes.



*Figure 184: Fragment of Langdale polished axe head. With kind permission from Dr Ben Edwards*

The other suggestion (Barrowclough, 2014, pp 135) for the potential map at Copt Howe is that it is a map on a larger scale with the map illustrating the 8.2-mile route between Great Langdale and the south of Lake Windermere, the largest lake in the Lake district and this is thought to be a well-used trade route for the distribution of these stone axes from the factory.

The first process carried out as part of this case study was the creation of a high-quality 3D photogrammetric model of the main rock art panel at Copt Howe, which enables those studying these monuments an opportunity for a clear image of the cups, rings and linear grooves and ensures that we have a complete picture of the potential map.



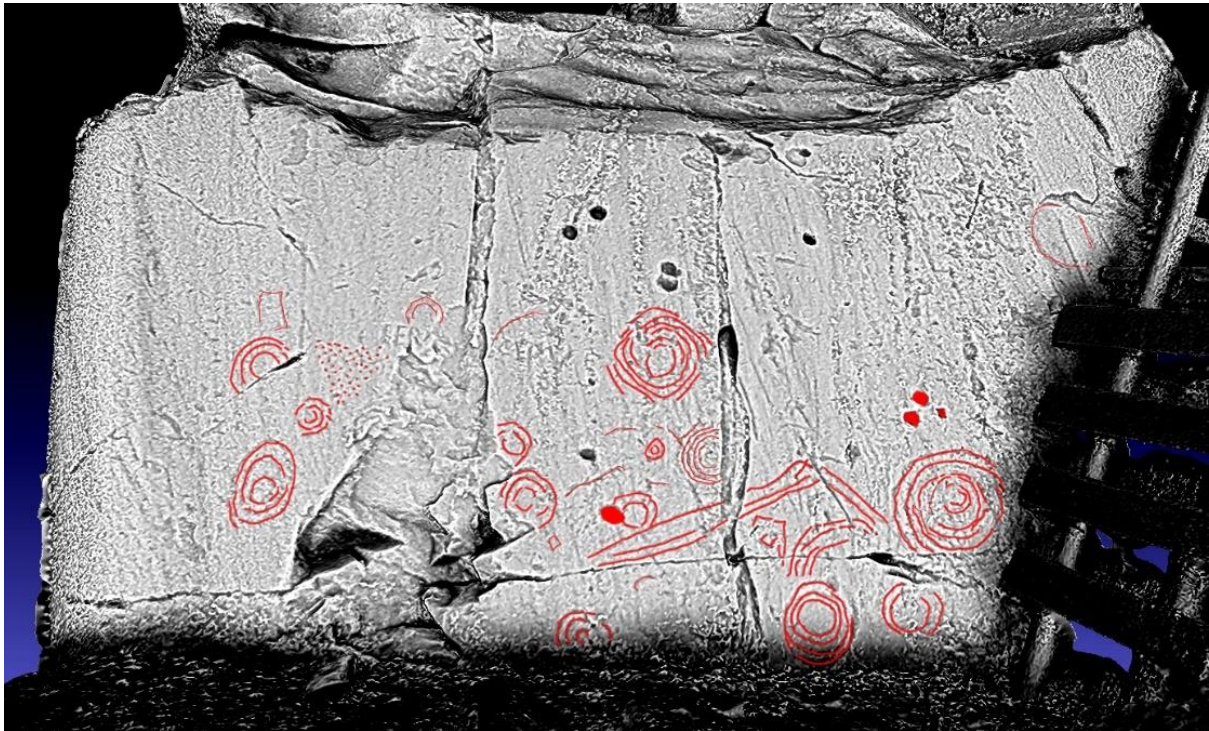
*Figure 185: Photogrammetric model of Copt Howe rock art panel (Chapel Stile).*

The photographs were transferred to Agisoft 3D software, and the model processed on the highest quality settings available (see Figure 185). Once this process was complete the high-quality mesh of the 3D model was transferred to MeshLab software, and a process known as Lambertian radiance scaling was applied. This sinks shadows into the recesses of the mesh and leaves the prominent areas white, enabling the clearest possible view of even the most shallow, weathered petroglyphs (see Figure 187).



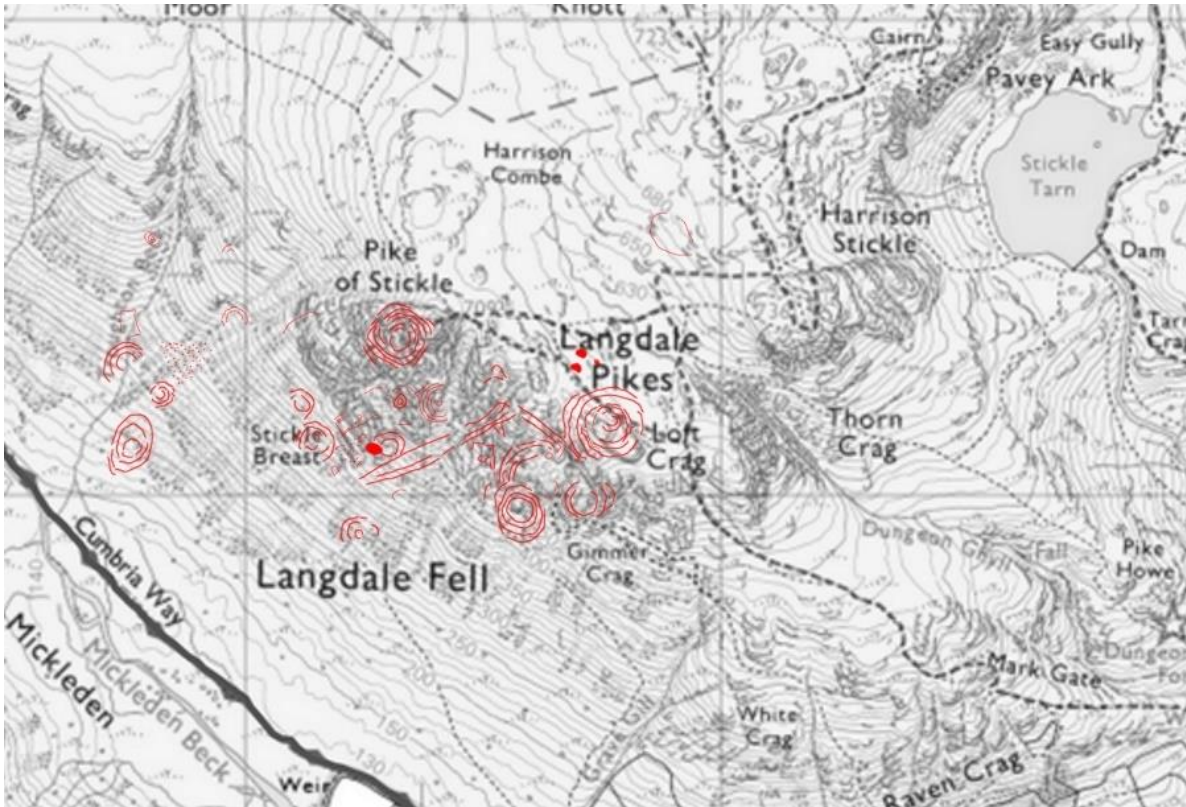


The next process is to select the engravings that are thought to be prehistoric and part of the alleged map and highlight them in red. This process was carried out by transferring the image into Photoshop and drawing over the cups, rings and linear grooves on a separate layer, this will enable overlaying onto ordinance survey maps to see if it is possible that this is a map of either Chapel Stile to Great Langdale or Great Langdale to Lake Windermere.



*Figure 188: Lambertian-radiance scaling of rock art panel; Copt Howe (Chapel Stile); with rock art highlighted via Photoshop.*

With the rock art highlighted (see Figure 188) it is now possible to remove the image of the 3D photogrammetric model and leave the red highlighted rock art in place. By saving this as a .PNG file format, this can give the image a clear background, which may be overlaid onto any map or photograph to see if any parallels can be made with landscape features that would have existed in the Neolithic. These features would mainly be natural, such as mountains; lakes; rivers; valleys represented as both rings and grooves found on the boulder at Copt Howe.



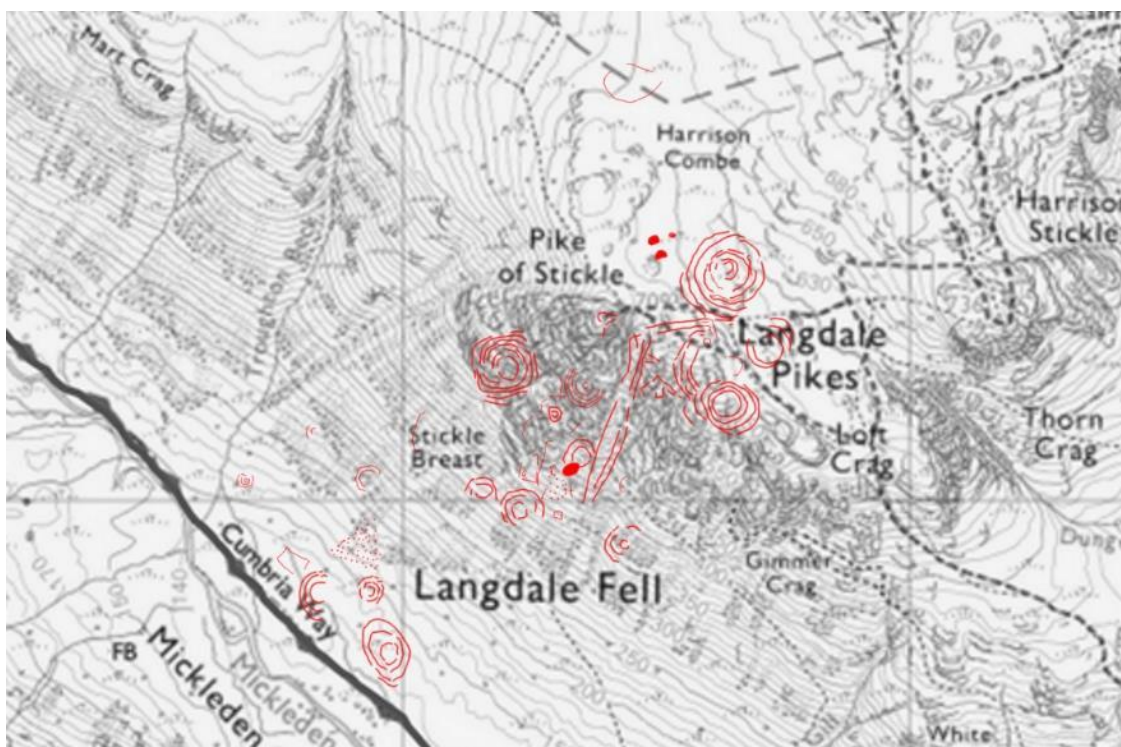
*Figure 189: OS map underlay with rock art overlaid atop.*

It has been assumed in this case that the multiple ring petroglyphs are possibly mountains, and this is where the first apparent problem in this study appears, as Neolithic man would not have any vantage point available to them to look down upon the highest peaks at that time. Unless some form of wooden scaffold was erected which is unlikely it is impossible to imagine how they would envision the contours of the mountains without some form of (inaccurate) abstract thinking. This being said measuring distance between the peaks and assumptions that the peaks are mounds, with the lower peaks in the foothills viewed from the summit being seen as such means that the ancient humans may well have represented mountains from a top-down view much like can be seen on modern topographical maps. This is the easiest way to illustrate the changing heights and topography of a landscape during navigation – a method still used with maps, satellite images and satellite navigational systems.

Placing the rings over the major points leaves the long linear groove randomly cutting across the peaks which seems unlikely that this is the orientation for a map (See Figure 189). If the rock art panel is rotated so that the linear grooves lie within the route of least resistance up the side of Great Langdale from Copt Howe, the rings do not closely align with the peaks of the mountain range and this is where the second problem appears. It is assumed that the map is

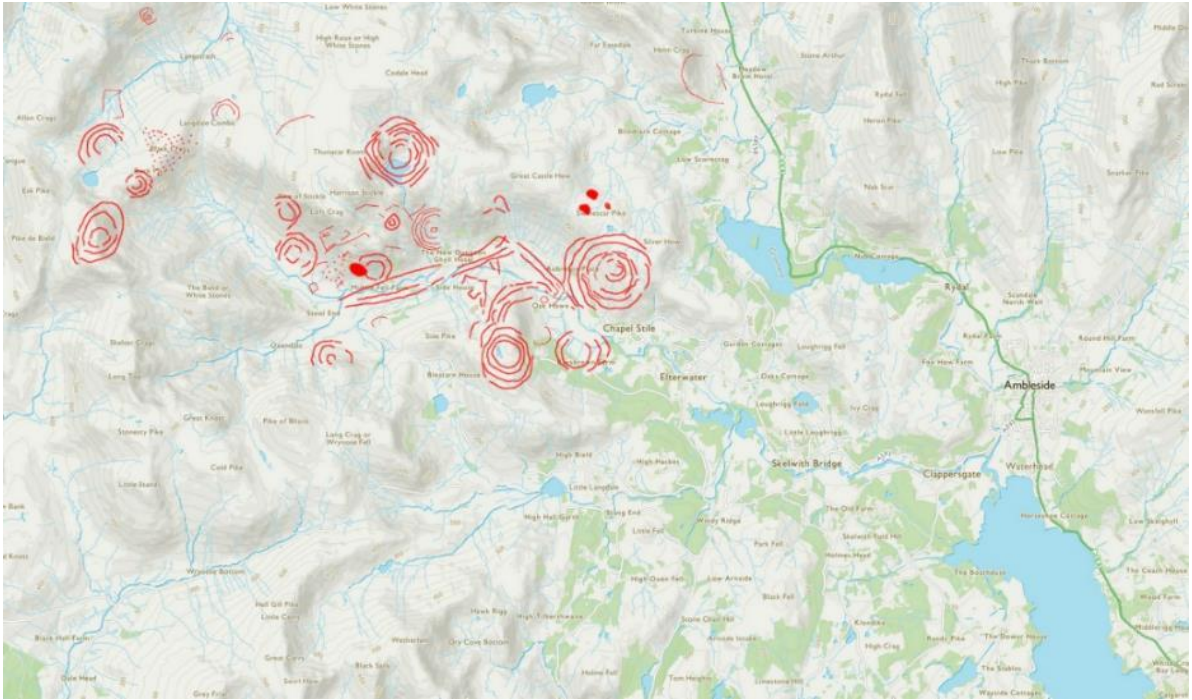


now abstract and Neolithic humans made a guess as to the locations of the peaks rather than measuring the distance between them if this is indeed a map to the axe factory. This possible symbolic representation shows that there can never be any accurate alignment of possible features against any modern measured map with the expectation of an exact match, both with the known measured landscape and the rock art and what it is thought to represent (See both Figures 189 to 190 for comparison). Another problem is that if this is indeed accurate then the rock art panel would have to be observed with the viewers head tilted 90 degrees to the left or with them having lain on their left side. This is unlikely with the amount of work that has gone into the rock arts creation it can be assumed that it is already oriented correctly.



*Figure 190: OS map underlay with rock art overlaid atop. Rock art panel orientation adjusted to align with natural features identified on the map*

Despite this realisation the next overlay will check the theory that the rock art is possibly a map of the trade route connecting Great Langdale and the southern tip of Lake Windermere. The same process was applied to a larger map of the area.



*Figure 191: Large OS map showing overlay of rock art atop of river valley leading to Lake Windermere (bottom right corner of map).*

It was decided that the orientation would be left as it is on the rock art panel. With this in mind, it became apparent that it was more likely that the linear grooves appeared to be following the river valley rather than a route all the way to the tip of Lake Windermere (see Figure 191). Although still not accurate in any way to the peaks (with multiple rings overlaying a lake on the top of Great Langdale) this map is more convincing than the small scale map up to the axe factory on Langdale. This being said it is not entirely convincing that this is the way that the map, especially because it would mean that its position on the rock is orientated backwards. The last experiment is to see if the rock art panel is possibly a sky map, possibly viewing the rise of the celestial bodies over Great Langdale itself from the rock art panel (see Figure 192). This approach is the most abstract yet and the most likely case with Copt Howe is that the linear groove is in fact a profile view of the peaks of Langdale.



*Figure 192: Outline of rock art panel overlain over visible view of mountains (Langdale).*

The linear does roughly align with the summit of Langdale but with the rings both above and below the horizon it is unlikely that they represent the sun, moon or stars and it makes the Copt Howe star map theory unlikely.

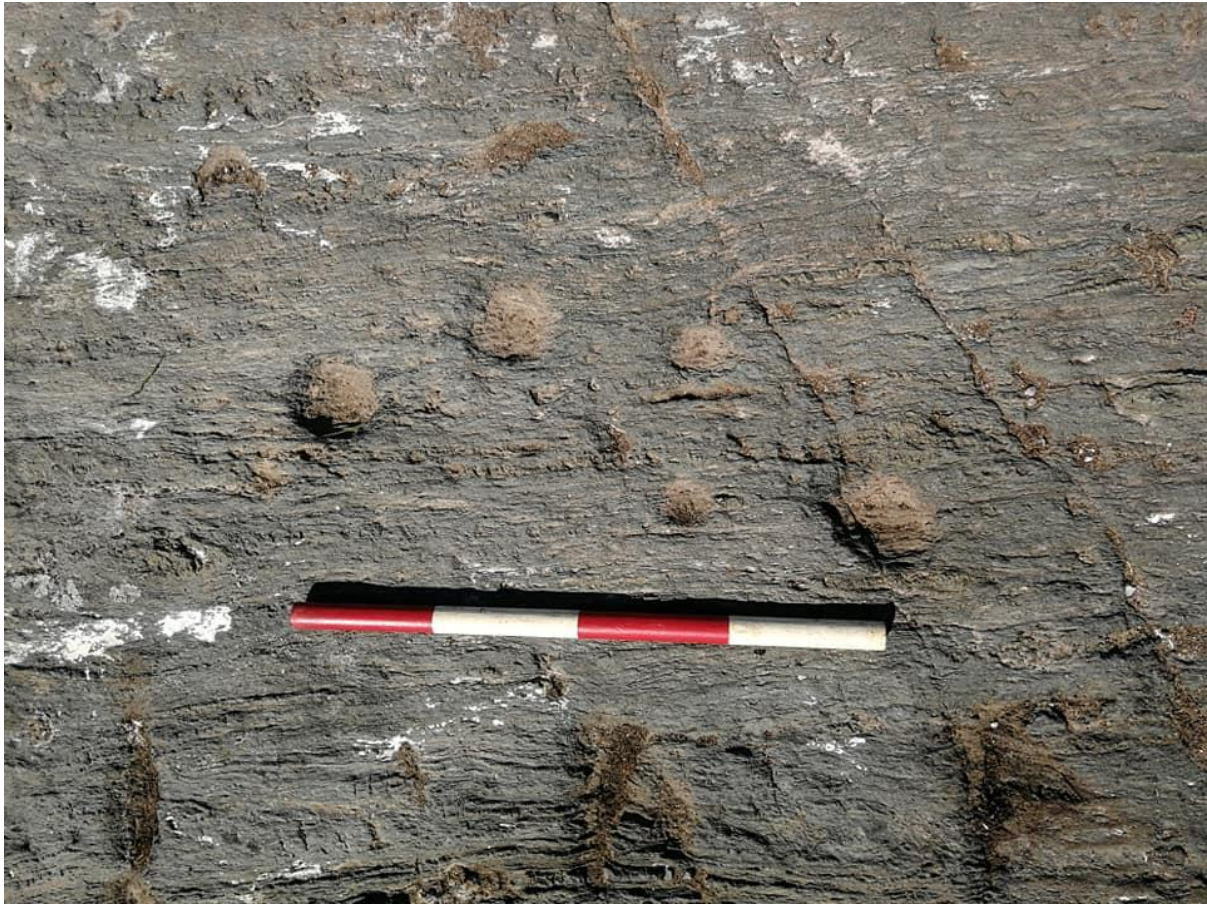
### **'Rock Art': Conclusions**

To conclude on the experimental section of this case study, the attempts at overlaying the Cumbrian rock art from Copt Howe over maps of the local landscape or an image of Great Langdale itself has in most cases been debunked apart from in the case of the map from Great Langdale following the river valley which is inconclusive with several outlying pieces of art and in most cases unlikely. Unfortunately, it would seem that this experiment has added little to both the current knowledge and understanding of the symbolic meaning of rock art from the Neolithic and Bronze Age period. Copt Howe was selected due to the suggestions by academics that it was some type of early cartographic diagram, but this has now been proven to be unlikely, and that these suggestions are wild speculations with little evidence to back them up other than the rings, cups and linear grooves looking vaguely map like.

Recurring motifs on Anglesey and North Wales such as an arc of 4 cups may reference points in the horizon. These arcs can be seen atop the outcrop at Bryn Celli Ddu (see Figure 193) and Rock Art around Bryn Celli Ddu landscape section) and more recently on top of the capstone of the newly discovered yet irreparably damaged tomb at Bedd Y Foel which has been reported on as part of this thesis. Much like with the speculations on maps it is also thought that these arcing cups might be representative of the movement of the sun or constellations but again it would seem that this is speculative with little proof or experimentation carried out and with the number of stars in the night sky and their movement over the millennia proving anything would



be mere pattern matching with thousands of possible candidates for an arc of four stars in the night sky.



*Figure 193: Cup marks visible on summit of Bryn Celli Ddu outcrop - arranged into 'arc' shape.*

As a summary, the reason for the rock art that originated in the Neolithic and Early Bronze Age is unfortunately lost to time. Any suggestions such as maps, symbolic representations of forgotten gods or ancestors, the attempts at illustrating the endogenous visions brought on by imbibing hallucinogenic mushrooms such as Fly Agaric or Liberty Caps, or any of the functional possibilities that have been proposed, are all speculative at present. The only honest thing which can be said about these mysterious symbols is that the more complex forms of spiral, lozenge and arc like petroglyphs are associated directly with tombs, such as is the case with Bryn Celli Ddu and Barclodiad y Gawres, and the cup marks are often found on outcrops associated with sacred spaces. It is possible that the process of the making of the cups rather than the outcome of the cup itself is what is significant - with the possibility that the cups are the results of “drumming” on the outcrops with rocks as part of a ritual. Drumming has been used in shamanic ceremonies the world over, often to induce trances in a process known as

‘sonic driving’ (Grimes 2003). Could it be that these cups are the result of this process? It seems unlikely as the addition of rings suggest art over some other function and suggestions that these cups were made to contain fluids is unlikely as they are created on both horizontal and vertical planes. It would appear that any time a confident conclusion is attempted as to the form or function of these petroglyphs, a glaringly obvious reason for this not to be the case is instantly found. It is frustrating in the study of prehistory that the symbolic meaning behind this artwork will remain a mystery, but the tell-tale markings of cups lead Arwyn Owen to the undiscovered tomb atop the Foel and these petroglyphs can be handy artefacts in the identification of sacred Late Neolithic and Early Bronze Age sites that have of yet laid undiscovered.



## Chapter 11: Conclusions

This PhD research project set out to expand current knowledge of the Neolithic and Early Bronze Age periods on the Isle of Anglesey using modern archaeological methods such as geophysics and 3D photogrammetry to investigate the ritual burial sites and rock art across the island. This goal was completed with great success, with new relevant and identifiable archaeological features and anomalies discovered at every site investigated as part of this study.

The aims and objectives of this study were not only to broaden our understanding of the scale of the visible and buried sites across these ancient landscapes, but also to test the utility and interoperability of multiple forms of archaeological method, this has also been successful with the use of LiDAR, satellite and aerial photography, resistivity and magnetometry and map survey to investigate the landscape helping to put the multitude of complex archaeological finds made in this project into context with the known archaeology and one another alongside illustrating the new finds to the reader. 3D photogrammetry has been utilised to investigate the monuments, particularly the rock art panels, and this too has been a great success, with new rock art panels having been found and recorded alongside new elements of already recorded panels. The benefits of the 3D printing from an education perspective in presenting these new finds to the outside world is extensive along with the inclusivity gained from having portable lightweight replicas of these rock art site to enable those who might not be able to gain access to some of these hard to reach and often inaccessible sites.

The third objective of this study was to place these findings into a context of ritual activity within the Irish Sea Zone focusing on monumentality and the Atlantic Fringe as a whole. This analysis has proven similarities between megalithic ritual monuments on both sides of the Irish Sea along with directly comparable architectural and artistic aspects across the Atlantic fringe. It has also been found that many of the monuments and rituals found to be carried out within are specific to North Wales and in many cases site specific when it comes to the structure and development of these tomb sites.

Originally this research project was focused upon the sacred ritual use of the Late Neolithic and Early Bronze Age landscape surrounding the River Braint on the Isle of Anglesey. Four years later the research developed into an island wide investigation, covering five ancient sacred burial sites, and has uncovered a massive amount of previously unknown archaeological

features, with the project culminating in the discovery and excavation of Bedd Y Foel; a site of international importance with new rock art panels, megalithic architecture, and stone artefacts.

To conclude this thesis the following section will summarise the findings made followed by potential future actions to be taken across these sites. The project began with the resistivity survey across the ridge at Bryn Celli Ddu which identified several features likely to be prehistoric including ploughed out Bronze Age burials and the pit features which were excavated to reveal Early Neolithic pottery finds. This bridges the chronological gap between the radiocarbon dated Mesolithic timber posts found close to the entrance of the standing monument at Bryn Celli Ddu and the early phases of the construction of the henge and stone circle. Sub circular anomalies found incorporated into the surviving standing stones across the Bryn Celli Ddu landscape are likely to be the remnants of the now destroyed stone circle and this is comparable as to what has been found at the Llanfechell monolith. Not only is any discovery of a stone circle of great importance to our knowledge of Late Neolithic and Early Bronze Age Europe, but also the frequency in which we are finding that standing stones are in fact the sole survivor of a stone circle suggests that a later tradition of leaving one stone standing while dismantling the circle was commonplace across the island. It is possible that the motivation behind this tradition is superstitious in origin, with one stone being left so not to upset ancestral spirits or old gods, or functional in that the stone was left standing as a cattle rubbing post. Either way this theory will be further tested with planned geophysical surveys and excavations across standing stone sites on the island exploring the possibility of stone circles having once been prevalent across the landscape of Anglesey. The discovery of the stone circle at Ty Newydd also highlights a 3<sup>rd</sup> Late Neolithic/Early Bronze Age ritual foci of the site - with the first being the ridge by the river on which the Mesolithic post holes, Neolithic pits, henge and long-lived cemetery was created. The second being the outcrop with cup marks on it which can be found roughly in the centre of the ritualised landscape and may well be the primary focus and now we have a stone circle on the uplands to the west.

The discovery of a large scale developed Iron Age settlement at Bryn Celli Ddu is a find of equal importance to that of the Neolithic and Bronze Age finds and proves that the site was inhabited by prehistoric man from the Mesolithic through to the end of the Iron Age. This longevity of use is fascinating and the successful imaging of several co axial Iron Age field boundaries and round house anomalies have provided us with the location for future

excavations to obtain dateable artefacts and structural evidence to truly understand the extent of the Iron Age at Bryn Celli Ddu both spatially and chronologically. One of the surprising aspects of the Iron Age phase at Bryn Celli Ddu is the fact that the Neolithic and Bronze Age tombs would have been standing and fully visible at the time that the field boundaries were created, and the round houses built. There is no doubt that the Iron Age ancestors would have understood these stone mounds atop the ridge were man-made structures and it is likely that they knew these were tombs along with the knowledge that the standing stones were visible if not the stone circle (it would appear many of these monuments were destroyed from the 1700's AD through to the 19<sup>th</sup> century). This use of ancient ritual spaces for the development of a large Iron Age settlement could suggest a druidic aspect to the landscape at Bryn Celli Ddu and this settlement being one of the possible targets of Suetonius's invasion in 60 AD cannot be ruled out. Excavations across the identified round house structures discovered through the geophysical surveys will be required to establish the function of these structures and it would be interesting to explore these sites to see if there is any continuation of ritual activity into this late prehistoric period. It is possible that one of the structures in field three has comparable aspects with a known 5<sup>th</sup> century BC blacksmith workshop found in the Snowdonia Mountain range such as a double sub circular ditch anomaly and being incorporated into the field boundary wall but as always, invasive archaeological excavation will be needed to establish the true function of this structure. The evidence of coaxial field boundaries can clearly be seen in both the magnetometry data and the LiDAR and with both sources of data combined we can see a north-northwest alignment to the field systems as opposed to the modern-day field systems which follow the north south alignments of the road that runs to the west of the outcrop and standing monument which leads to the modern-day dairy farm.

The survey of the field to the east of the reconstructed monument at Ty Newydd revealed that the upland area, much like the ridge at Bryn Celli Ddu was part of a larger complex of prehistoric burial monuments which are visible as cropmarks in the dryer seasons. This discovery further shows that rarely are these monuments alone in the landscape and investigation into the fields surrounding any monuments is just as important if not more important as excavation on the extant archaeological remains. All sites that have been identified should have extensive geophysical surveys around them to establish the true extent of the ritualised landscape and any newly discovered monuments should be excavated to begin to build a chronology of these complex sacred landscapes. It also brings into question the current

protection enforced upon these monuments as the scheduling of Welsh monuments only includes the extant remains themselves and many sites will be destroyed without any archaeological investigation or record, and it is likely that many sites have been lost in recent times due to ploughing and building works in the vicinity of these tombs. We must re-evaluate our approach to these sites and excavation and further geophysical surveys will be planned ahead of the findings of this research thesis in an attempt to prove the large-scale nature of the prehistoric burial grounds on Anglesey.

The results of the magnetometry surveys over the two sites close to the village of Llanfechell were both a success. In the case of the Llanfechell Triangle two long standing questions have been answered, the first question is often enquired about the site and that is the Llanfechell Triangle a prehistoric monument of a neo druidic folly raised in the 17<sup>th</sup> – 18<sup>th</sup> century. The survey revealed the faint remnants of what is likely a ploughed-out ring ditch barrow which will be of Bronze Age date. This close association with probable prehistoric monuments proves that the standing stone triangle is likely of prehistoric date and the anomaly which is possible a 4<sup>th</sup> buried megalith backs this up. It is also unlikely that this monument is modern due to the early recording of the monument with no word of it being recent, alongside the weathering of the dressed stone - comparable to the traces of wear found on prehistoric standing stones such as Cwn Cadnant and Bodewryd. The second question that had been asked about this site is whether the monument lies on a route or trackway as it stands prominent in the landscape atop a long upland area which culminates with a known Bronze Age burial ground to the northeast. The results of the survey identified two linear anomalies to the northeast, and these are likely to be a modern trackway as the track continues under the drystone wall which is ancient in its own right. It is likely that this causeway linked the Llanfechell triangle to the Bronze Age cemetery to the northeast as part of a ritualistic procession way – currently, plans are being made for the excavation of this site to be carried out by Mônolith Archaeology, Gwynedd Archaeological Trust and Anglesey Antiquarian Society to establish a chronology for the two anomalies found in the survey and to confirm that the findings made in the survey are truly of prehistoric origin. The interest in the results from outside archaeological groups and societies further prove the importance of the findings made in this PhD research project and no doubt the results of these surveys will inspire several future archaeological projects for years to come.

The final and arguably most important find of this investigation into the prehistoric monuments of Anglesey is the discovery and investigation of the rock art and destroyed megalithic tomb

at Bedd Y Foel in the heart of the island, just outside of the town of Llanerchymedd. Discovered during the Covid pandemic, the subsequent excavations were carried out a year apart and due to local lockdown restrictions but despite these unprecedented problems, the excavation was a resounding success with worked stone artefacts alongside architectural features proving the site to having once been a megalithic monument of the Neolithic period. With the help of the living memory from local residents and artefactual evidence from the 1970's layer, it was possible to establish a series of events which lead to the destruction of the tombs. Damage to the capstone also confirmed that it is probable that the capstone was hit by a small bulldozer, likely driven by joyriding children and the uprights were shattered to pieces with the resulting crash. The understanding that the capstone had been shifted in modern times allowed for the digging down into the area where it had once stood in an attempt to find the chamber and the hard work by the excavation team paid off with a clay and stone floor surface being revealed which is a comparable feature with a number of tombs across the island. Furthermore, it was atop this floor surface that the artefacts were found, a possible sharpening stone/votive offering, a pebble with a flattened end that had been used for burnishing or polishing and a number of worked chert pieces. The rock art that was found on stone one displays the classic four cups in an arc motif that can be found on panels across the island and the discovery of these cups alone make the site incredibly important to the study of prehistory on Anglesey. The fainter cup marks on the capstone of Bedd Y Foel of which there are at least nine are all orientated towards the northeast looking towards the sea and this is likely due to the midsummer solstice sun rising at this point on the horizon, framed by Dulas Bay. All of the discoveries that have been made across the sites studied as part of this research project are of national and international important but the finding of a Neolithic tomb that is completely unrecorded and had been missed by the multitude of antiquarians that had intensively studies this type of monument across the island is a rare find indeed.

The 3D photogrammetric recordings and 3D prints of rock art sites such as the Bryn Celli Ddu cups, the Stone of Cunogussus, the Escob stone and a number of portable rock art sites along with the monument known as the Llanfechell Triangle have provided not only another layer of scientific recording but has unveiled previously unseen aspects of the rock art with extra cup found on the Cunogussus stone and the Escob stone.

To finish this thesis, it is clear from the results of the geophysical survey, excavation, and 3D models that an incredible amount of new archaeology has been discovered, excavated and



presented in this research. The work will not end here, and this piece of work will inspire geophysical surveys that will be carried out across the island in an attempt to uncover all of the prehistoric and historic monuments that lie beneath the earth on the Isle of Anglesey. It is clear that further work needs to be conducted in the centre of the island and across all known extant monuments that have not yet seen large scale geophysical survey. Excavation should then be applied to all newly discovered anomalies to ground truth the archaeology. The prehistoric archaeology of the Isle of Anglesey is a fascinating field of study and everywhere that was investigated as part of this study discovered new finds that had gone previously undiscovered. This wealth of archaeology will no doubt enable further research to be carried out by archaeologists for years to come and despite the challenges that the global pandemic posed for the carrying out of this work, archaeological investigations will continue to bring the ancient monuments, artefacts and rituals of ancient Anglesey back to the light.

Mike Woods

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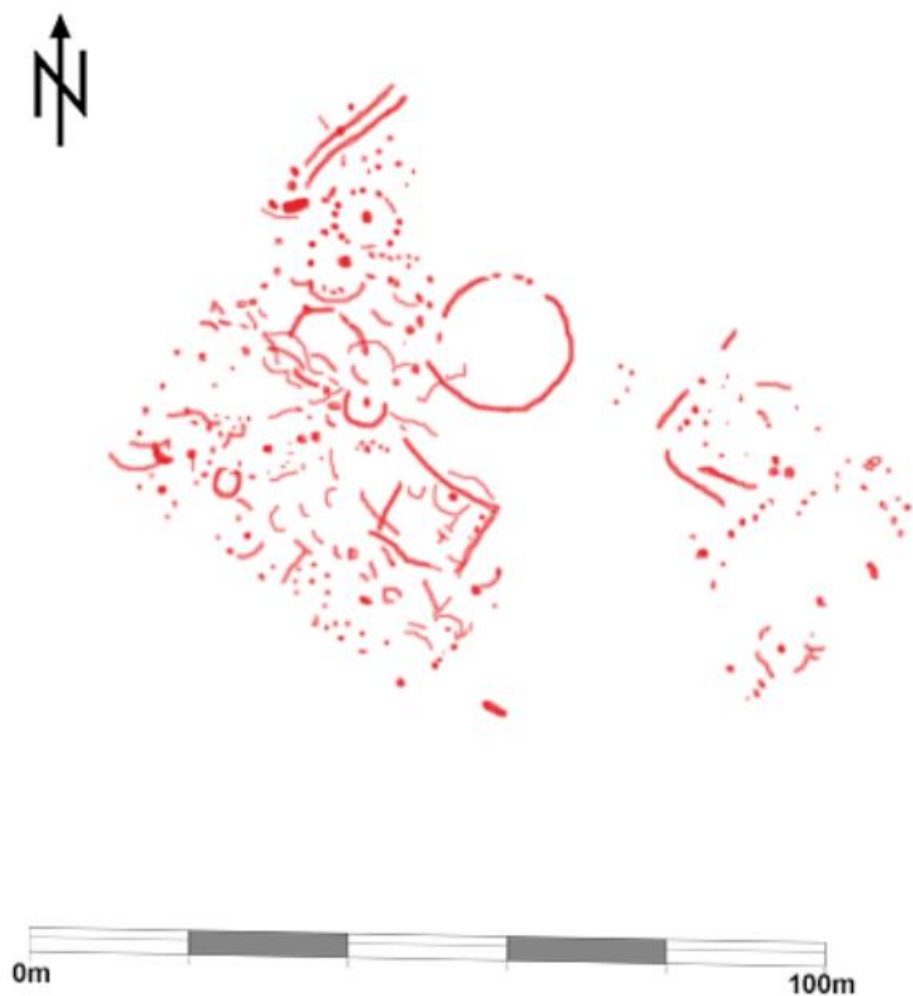
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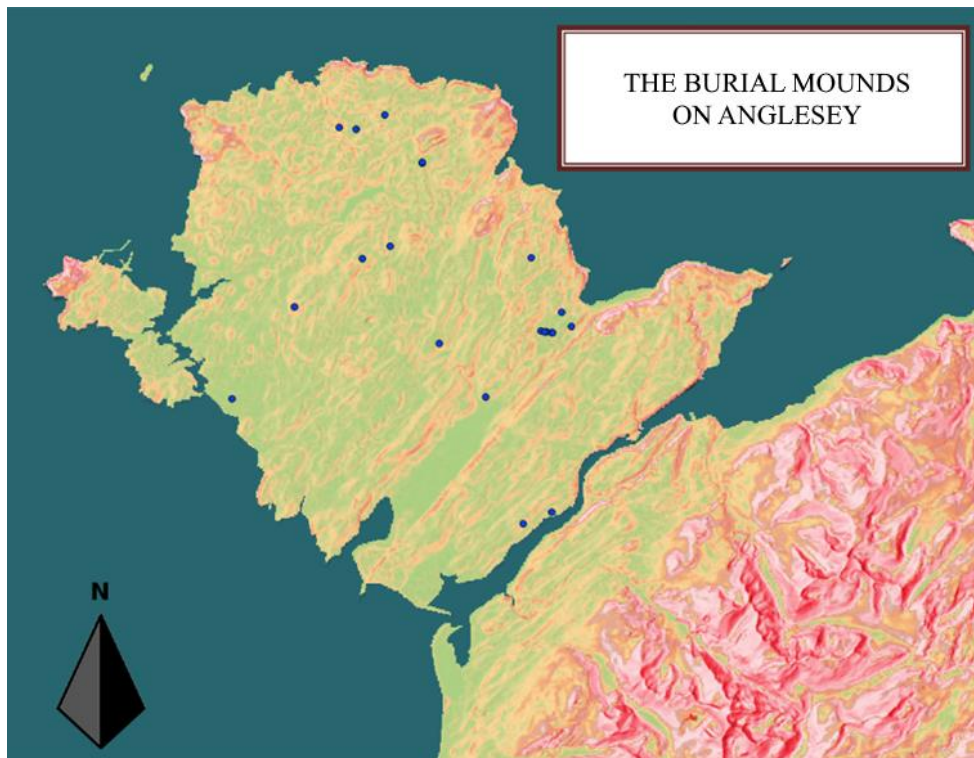
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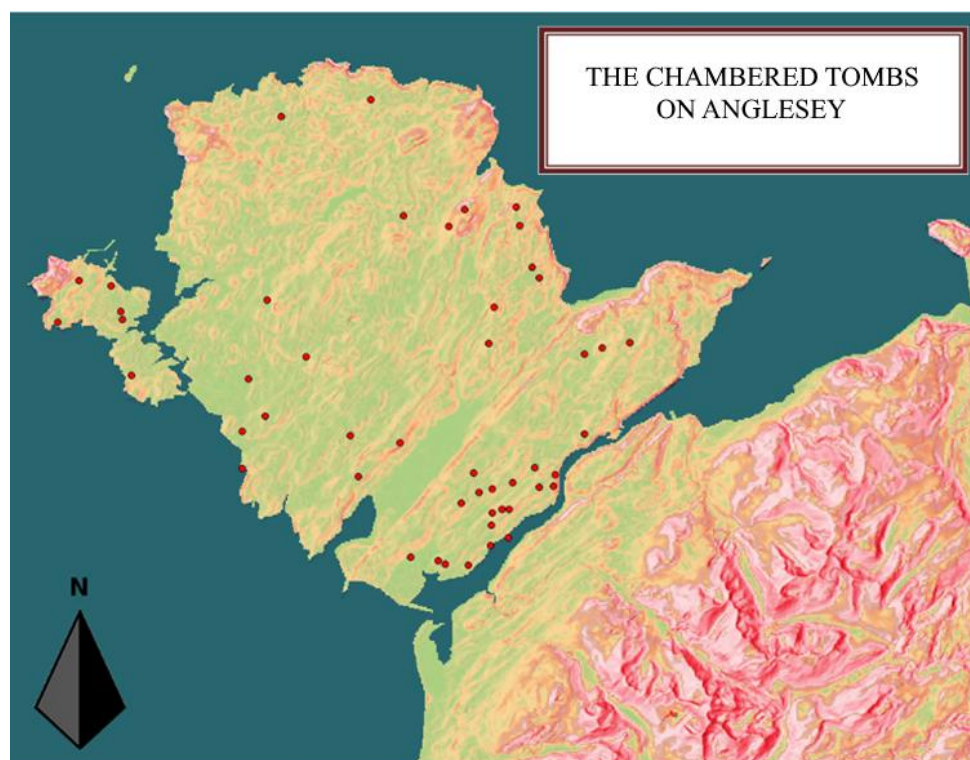
# Appendixes



*Appendix 1: Interpretation of features recorded at Llanfechell Triangle (first interpretation).*



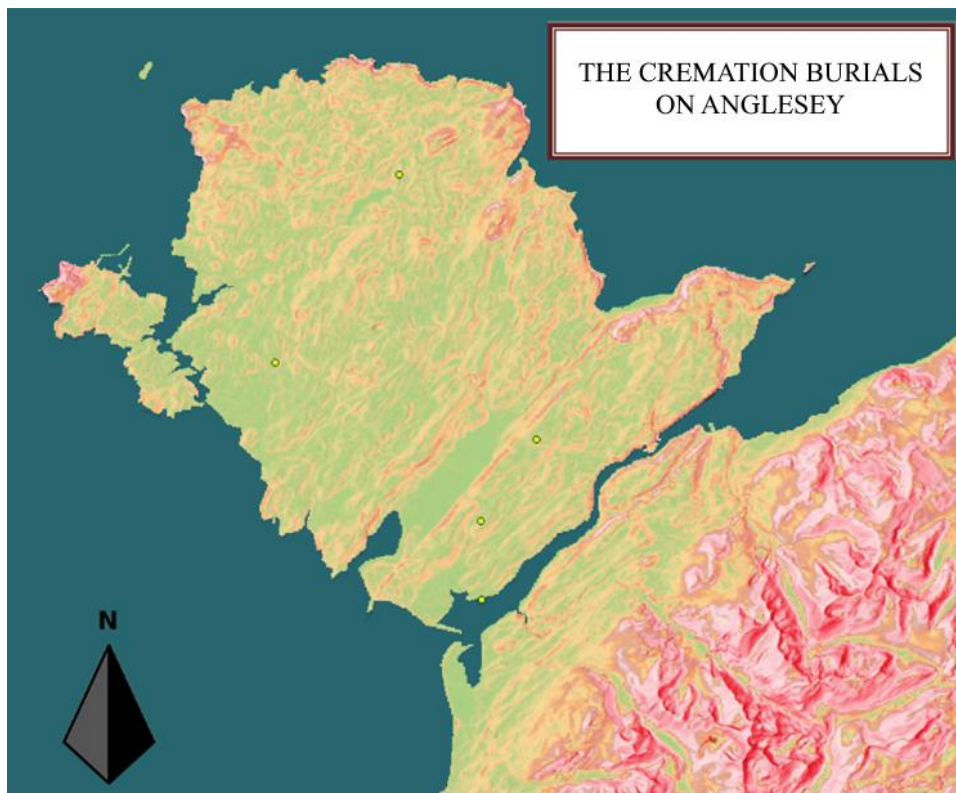
*Appendix 2: Topographic map showing location of prehistoric burial mounds (i.e. barrows, cairns) on Anglesey (Smith 2003).*



*Appendix 3: Topographic map of Anglesey showing location of chambered tombs on the island (Smith 2003).*

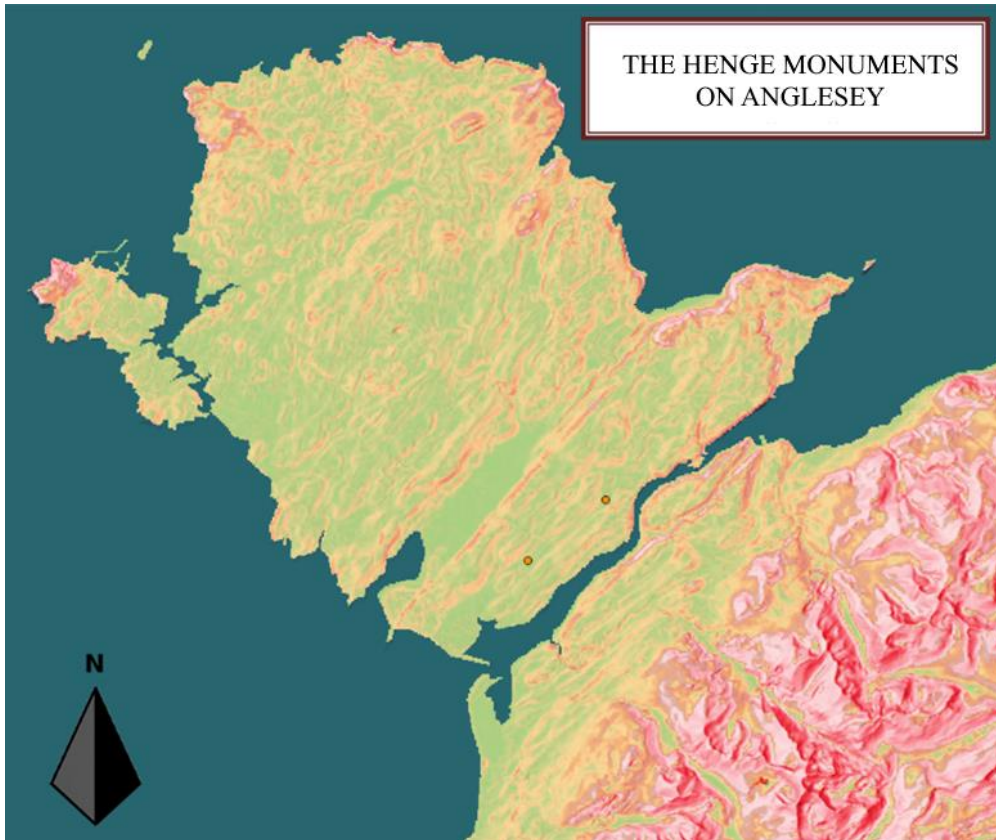


*Appendix 4: Topographic map of Anglesey showing location of cist cairns on the island of prehistoric date (Smith 2003)*



*Appendix 5: Topographic map of Anglesey showing location of known prehistoric cremation burials on the island (Smith 2003).*

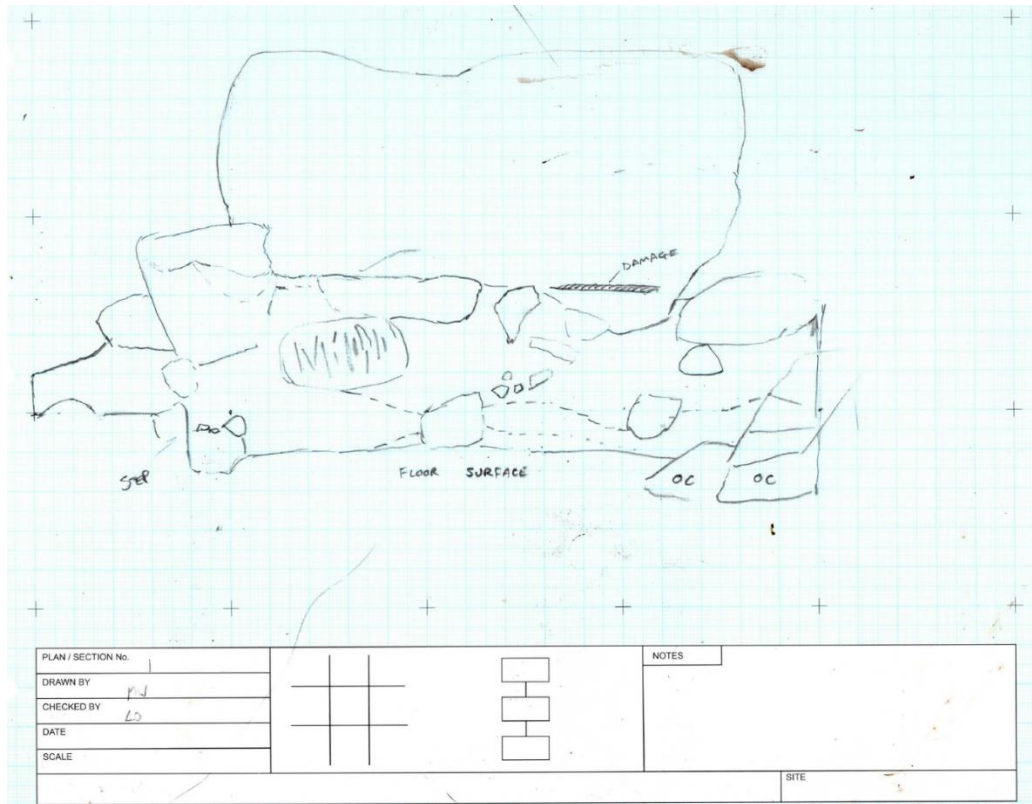




*Appendix 6: Topographic map of Anglesey showing location of known henge monuments on the island (Smith 2003).*



*Appendix 7: Topographic map of Anglesey showing height elevations – Red being high areas with green being lowland areas.*



Appendix 8: Image of measured drawing of eastern section of Bedd y Foel trench, showing stratigraphy present on site.

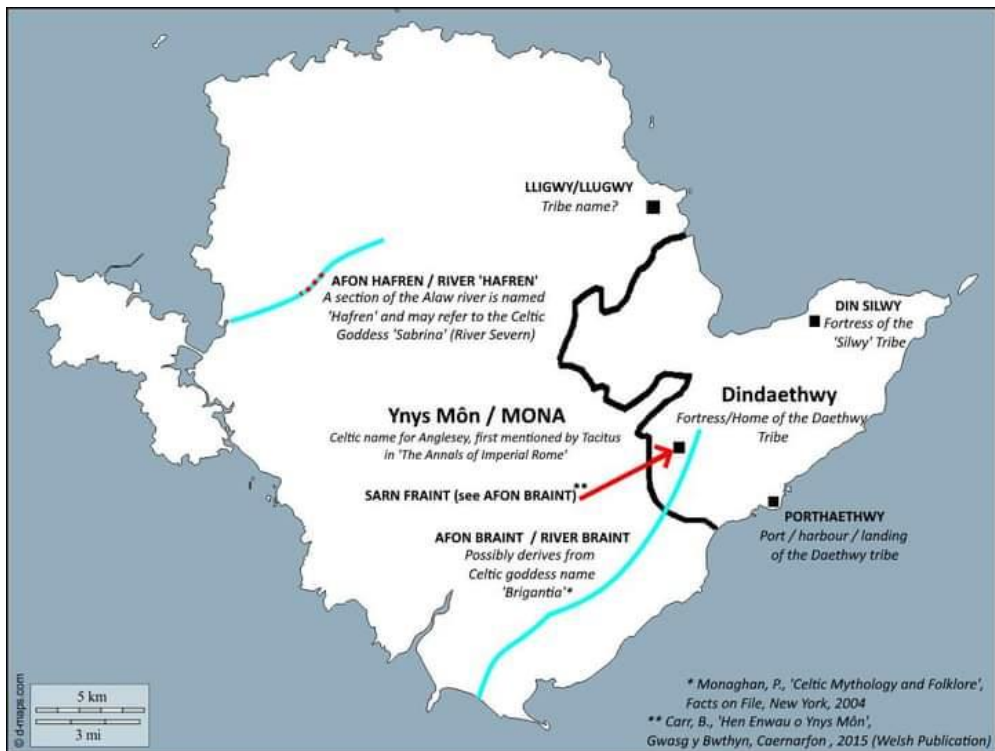


Appendix 9: Aerial image of late prehistoric to Romano British settlement near Mynydd Bodafon, an up to date account of this site can be found with Waddington (2013, pp. 142-3). With kind permission by Owen.





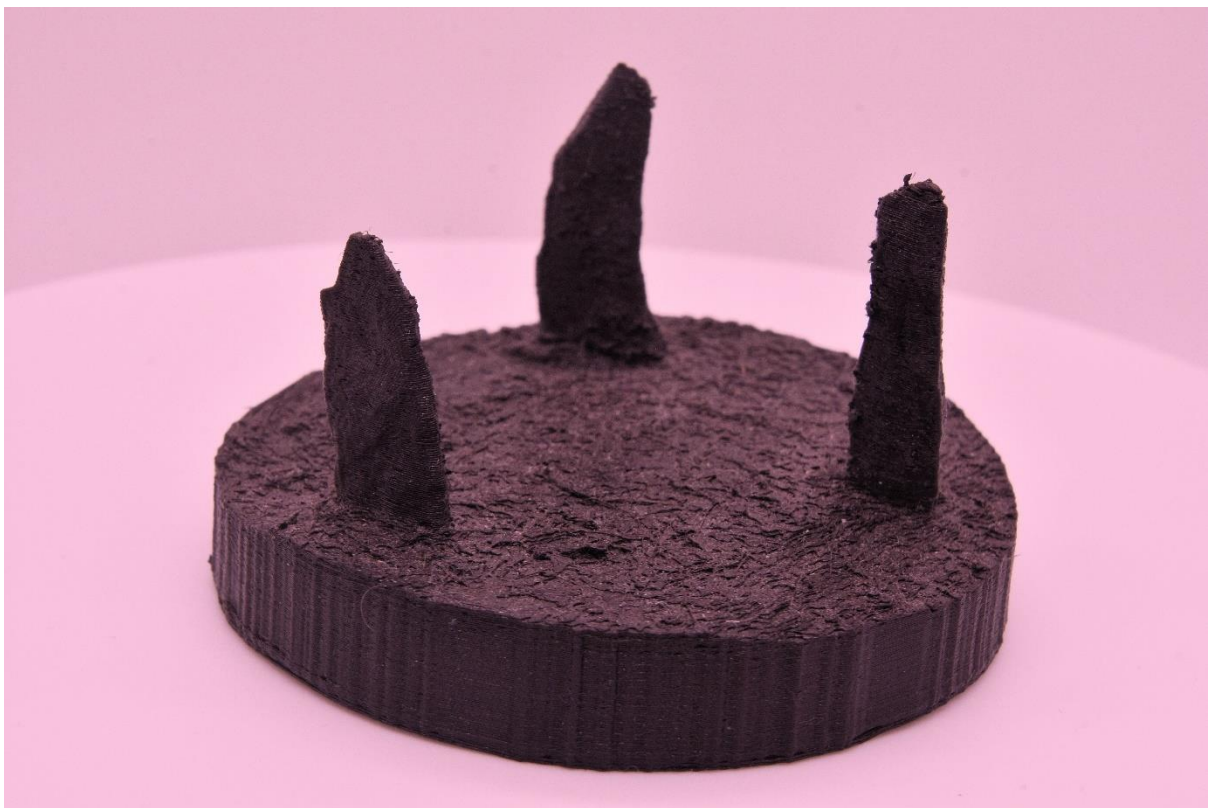
Appendix 10: Aerial image (close up) of cairn atop Mynydd Bodafon. With kind permission by Arwyn Owen.



Appendix 11: References to possible Celtic place names on Anglesey; based on current interpretative accounts. Map drawn by Owen, with kind permission, with citations on right. With kind permission by Arwyn Owen.



*Appendix 12: 3D Print of Cunogusses stone, showing detail of print model.*



*Appendix 13: 3D filament print of Llanfechell Triangle (small), showing detail of model at small scale. Note printing errors on right hand stone.*





*Appendix 14: 3D filament print model of Llanfechell Triangle (large), painted. Note highlighted features due to painting of model.*



*Appendix 15: 3D filament print of Clegyrdy Bach portable rock art piece, Llangefni.*

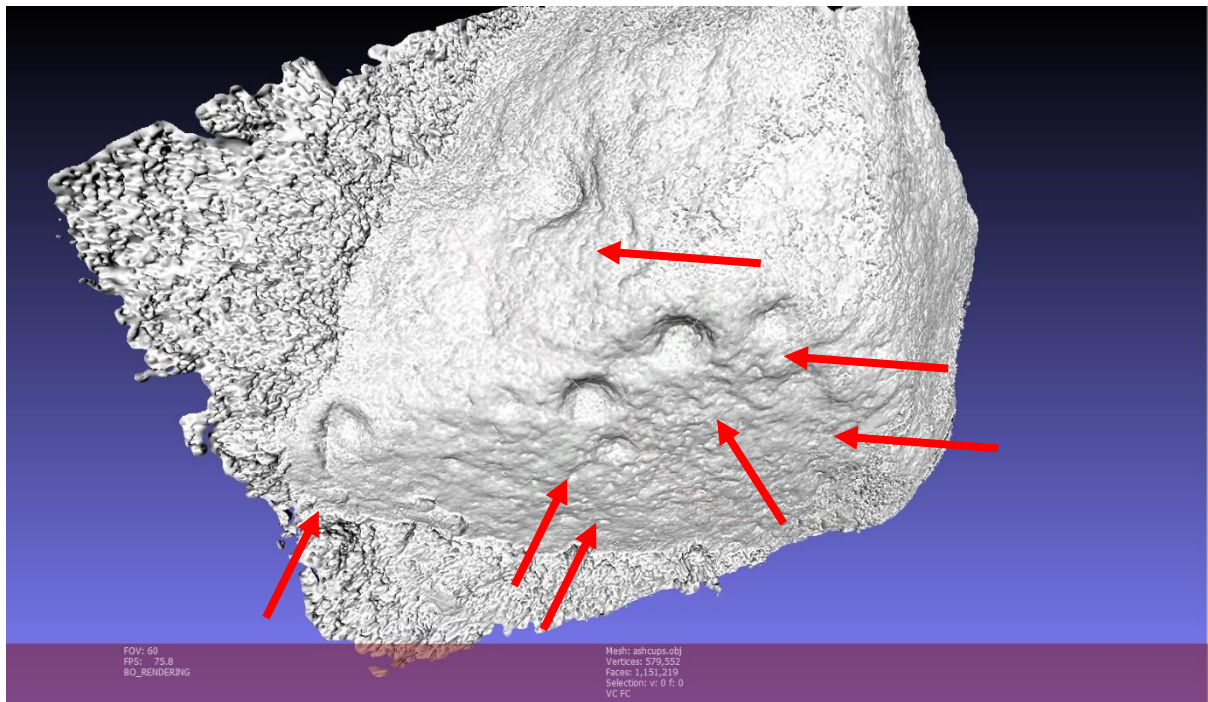


*Appendix 16: Image of cup marked stone found during Strip and Record at Bedd y Foel – September 2020.  
Location of cups highlighted with red arrows.*



*Appendix 17: Endoscopic image of possible chamber at Bedd y Foel found during strip and record excavation –  
September 2020), showing gap underneath the stones. With kind permission by Arwyn Owen.*





Appendix 18: 3D photogrammetric model of Stone 1. Cup marks are highlighted with red arrows.

## Dig Diary – 13<sup>th</sup> April 2021 > 14<sup>th</sup> May 2021



Appendix 19: Photo showing excavation work at Bedd y Foel site, taken 21/4/21 (with kind permission by Owen)

Following the announcement of easing of lockdown measures in both Wales and England in early April 2021, the opportunity arose to revisit this site for further excavation into the monument itself, as well as address some of the key features observed during the strip and



record the previous year. The author conducted a full-scale excavation of the site at this time, with the assistance of the discoverer (Arwyn Owen) as a co site leader. Furthermore, the easing of restrictions allowed for volunteers to be sought both locally and from further afield. This work was filmed as part of a community engagement video showcasing the site and the heritage of the wider area by Telimôn for public broadcast on behalf of S4C (Telimôn, per comms.).

#### *Day 1 – 13/4/2021*

As mentioned previously the country had descended back into lockdown and a year passed until the excavation could be carried out on site. This was finally undertaken over 5 weeks starting from the 13<sup>th</sup> of April 2021 with the intention of completing the work on site. The 4-metre x 4 metre trench excavated previously was reopened on the exact same spot as the strip and record immediately west of Stone 2. The turf was removed with shovels and spades and by the end of Day 1 the trench was back to as it was at the end of the strip and record. The first major challenge which had been made apparent during the previous excavation was a layer of large stones that was made up of broken, yet seemingly dressed stone, the cup marked stone that had been left in situ and random quarried stone which had been piled on top of the dressed stone layer. These were interpreted as likely being part of a modern farmers clearance cairn, with stones piles on the western side of Stone 2 out of the way of farming machinery.

#### *Day 2 – 14/4/2021*

Day 2 began with the removal of some of the smaller more manageable stones on the surface by hand and another stone with two bands of geology, identical to the modified grooved stone that had been found during the previous strip and record excavation in 2020 was uncovered. This stone did not have any human alterations unlike the other grooved stone discovered previously in September 2020 which displayed lateral pick marks. However, it may have been selected as part of the construction of the monument given its unusual appearance.

Following this discovery, no further notable features or discoveries were made during the day.

*Day 3 – 15/4/2021*



*Appendix 20: Aerial view of Trench - Day 3*

Day 3 consisted of cleaning back with trowels as the top layer of smaller stones had been removed on the previous day (see Figure 105). We were joined on site by historian Cameron Black and a call was made to acquire local helpers to assist in the removal of the larger stones on site. This layer was identified as a destruction layer consisting of a number of the dressed stones being clearly part of the same stone, with many now fractured into multiple pieces. The extent of this destruction layer measured 3.03m by 3.19m, arranged in a sub circular fashion, with the greatest density of stones in the South-eastern corner of the trench (see Figure 105 for full extent). The size of the surface stones was mixed, with the largest measuring 59.4cm wide by 83.4cm long, and the smallest stones measuring 3-4 cm. Apart from the cup marked stone identified previously only a few stones could be identified as having been possibly dressed, as several appeared to be rounded in appearance. The site was fully recorded with both traditional



drawing techniques and aerial photography carried out with the drone and the location of the grooved stone was recorded in situ before the stone was removed.

*Day 4 – 16/4/2021*



*Appendix 21: Aerial view of Trench – Day 4*

Day 4 (see Figure 106) saw the discovery of the first contexts, consisting of a large pit into which the destruction layer of stone was found, extending up to 3.22m into the trench north to south, 2.8m North-East to South-East and 2.5m South-West to South-East. This was arranged as a sub circular profile, later named ‘Context 1’, and recorded. The area to the east of the trench was made up of an orangey brown tightly packed clay and stone surface which seemed to be mettled at one point, measuring 1.7m diagonally from the North-Western corner of the trench down to the centre (south), and 3.4m across east to west. This is possibly a modern track for livestock that can be seen in early satellite images of the site. The aerial photo of the site from the 1940s also showed a path which cut across this corner of the trench, suggesting it has been in existence for some time beforehand. The infill of the pit was a darker brown layer interspersed with huge rocks, which are the mix of large, likely dressed stones (part of the destruction layer discussed) and are likely to be the remnants of the uprights of the tomb that



collapsed following a violent event on site. This consisted of the violent moving of the capstone approximately 3 metres to the east and the creation of smaller clearance cairn layer piled up next to the large boulder by previous landowners. This was no doubt done to reclaim parts of the Foel as the summit and nearby areas was once used as quarrying sites, with many of the large stones across the Foel summit remaining as evidence of this phase of the sites' use. It was at this point we started to find shredded plastic and realised that the cavity that we had inserted the endoscope into during the strip and record was likely to be the remnants of animal burrows, with these creatures shredding up what looked to be heavy duty plastic farm animal feed bags, as well as general refuse bags, to use as bedding. It is likely that some of this plastic may have come from the local rubbish dump located nearby and may have blown over to the excavated area in the (more recent) past. The contexts and animal burrows were recorded in situ ahead of further removal of the destruction layer and in fill of the pit feature.

*Day 5 – 17/4/2021*



*Appendix 22: Aerial view of Trench - Day 5*

Day 5 consisted of further removal of the dark brown pit fill in context 1 (see Figure 107) with trowels followed by the removal of some of the larger stones within this context using straps and a pry-bar. The removal of the largest stones within the context revealed more large stones beneath, still within the dark soil matrix of context 1. It was at this point that we realised the magnitude of the effort it would take to fully remove this destruction layer, which also raised the possibility of damaging undisturbed archaeological remains by dragging of some of these larger boulders from the trench. The substantial damage to the monument which had been unearthed at that point during exaction made the analysis of the buried remains difficult in situ and we understood that much of the deciphering of the series of events that caused the destruction layer would be done in the post excavation interpretation once the lower contexts were fully understood. With this in mind we decided that it would be better to over record this layer and take a top-down drone shot of the plan of the trench at the end of every day's work. Despite this we were not deterred, and work continued at the site. By days end many of the large stones in the north-eastern quadrant of the trench were removed ahead of further work the following day.





*Appendix 23: Aerial View of Trench - Day 6*

Day 6 started with much of the same as the previous day's work with the removal of the pit fill of context 1 (see Figure 108). It was noticed that the lower we descended into this context the smaller the profile of the pit became, sloping at a 35-degree angle, towards the eastern part of the trench (see Figure 108). This profile would have led directly beneath the area that the large cup marked boulder, recorded as 'Stone 2' during research, once stood prior to 1945. It was also noticed that the lower we excavated, the smaller the stones became, although many were large enough to still require at least two excavators to remove them from the trench. This initially suggested that the structural elements of the tomb may have lied closer to the surface, with the smaller rubble/demolition material following the tombs collapse, lying deeper down into the chamber itself. No further artefactual material was observed in this layer suggesting it may lie deeper in the feature, presumably underneath the core of Context 1 to the South-East of the trench.



Day 7 – 20/4/2021



*Appendix 24: Aerial view of Trench - Day 7*

Day 7 began with the removal of two of the large boulders in the southeast quadrant and further excavation of the fill of context 1 (see Figure 109). The first discovery of definitive structural evidence was then found. A flat stone which had been just below the surface was found to be the stump of what we presume to be a large upright stone, set into a pit and secured with at least 5 packing stones of varying size noted (see Figure 110). The upright, when fully excavated, measured 37cm in height, with a length of 60cm and a width of 46cm. It is assumed that the fragmentary stone weighted over 100kg as at least two people were required to move it from its original position. The stone appeared to have been sheared off at a level just below the existing surface, proving as further evidence of the violent events that caused the tomb to be destroyed in recent memory. Given the large diameter of stone it can be safely assumed that the forces required to shear this stone must have been immense and incredibly violent. It was decided that we would fully record the stone in situ ahead of removal and then we could fully



record the socket and packing stones that were visible around the stump of the presumed upright.



*Appendix 25: Packed stone recorded during excavation, viewed from the North-West section of the trench towards the South- East.*

The south-eastern corner of the trench continued to descend further downwards following the removal of one of the larger stones on site. The stone, measuring 60cm in length, was almost cylindrical in appearance and had a rounded end on its eastern side. It is possible that this stone may have been the upper half of an upright which became detached following the destructive event which happened in recent memory. It is possible that this stone may have been the upper half of the packed stone uncovered further to the west, however given the fragmentary nature of the evidence on site this remains speculative at best.

Following the removal of this stone however, it was clear that the initial suggestion of a possible chamber cavity vanished, as further down was the immediate discovery of broken stones. The cavity measured no more than 20cm in height, with the remains of a large stone directly underneath. Following this it was determined that the cavities discovered on site were more likely the remains of animal nesting on site, which was noted by previous discoveries of



nesting sites on the north-eastern corner section of the trench. As such work continued to uncover more of the stones to see if there is any evidence of a chamber surviving on site.

*Day 8 – 21/4/2021*



*Appendix 26: Aerial view of trench - Day 8*

Day 8 (see Figure 111) started with the final day of excavating context 1 as the next context was found beneath that was context 3 11cm down; a purply black clay layer with large stones, although not as large as the destruction layer in the upper parts of context 1. Context 3 is another fill layer within the pit feature and the slope of the pit cut is a continuation of the pit which contained the upper fill of context 1. The pit continued to slope downwards to the east, with natural bedrock geology of the outcrop appearing in the southwestern corner of the trench at the very edge of the pit cut. A single bone fragment, identified as a long bone from a limb, was found sat on the surface of context 3 among the stone a clay fill, nestled in a hollow between two larger stones (see Figure 112). The bone was hollow, comprising only of compacted tissue, and likely to be the remains of livestock from the modern era on account of its preservation with the acidic soils of Anglesey destroying more ancient organic remains. With this find it



was clear that we were still in modern layers of archaeology, with the purple clay being reminiscent of Hempt's excavation of Bryn Celli Ddu as purple clay layers excavated there were interpreted by Hempt as a buried turf layer.



*Appendix 27: Fragmentary long bone identified during excavation, western side of trench, of modern date.*

*Day 9 – 22/4/2021*



*Appendix 28: Aerial View of Trench - Day 9*



Day 9 (see Figure 113) marked the end of week two of the excavation and this day was spent carrying out the full recording of the stump of the upright and packing stones in situ with both traditional archaeological drawing methods, photography, 3D photogrammetric modelling and aerial drone photography. The sheared off upright was removed to reveal the upper section of the pit which was defined by a dark fill in amongst the damaged upright support and packing stone, later named context 4 (see Figure 114). The top section of the pit was measured as being 85cm north south and 55cm east west, with a total depth of between 40 to 45 cm when fully excavated. The base of the upright had been dressed to a point on one side, a rounded edge could be seen underneath. The stone was surrounded by five packing stones, many of which were jutting out above the surface, with the socket only going to a depth of 45 cm at its deepest point. It is likely that the top of the pit had been destroyed along with the shearing off of the top of the upright. This structural evidence confirmed that the site at the Foel was the remnants of one of the many variants of Neolithic megalithic monument found across the Isle of Anglesey, and it is likely that this upright was 1 of 3 or 4 that would have supported the massive cup marked boulder of Stone 2 when the tomb stood, presumably prior to 1945.



*Appendix 29: Still from video showing top of pit of upright stone following its removal.*



*Day 10 - 26/4/2021*



*Appendix 30: Aerial View of Trench - Day 10*

Day 10 (see Figure 115) marked an important day in the understanding of the series of events that caused the monument to be in its current demolished state. The excavation was recorded as a short film that was produced by Telimon and distributed via social media ahead of the dig, with filming carried out by Telimon throughout the excavation to be televised on S4C at the end of the dig. This publicity had seen a number of visitors to the site and on day 10 we were visited by locals Clegwyn and Dafydd, both of whom have lived in the area since early childhood. Both remembered Stone 2 being in its original position as late as the mid 1970's. This brings the monuments destruction ahead from the mid 1940's aerial by at least 25 years than previously thought.

Clegwyn also regaled both the author and excavators about the story of a mini bulldozer which he referred to as the 'Drott', later identified as a large caterpillar tracked bulldozer, and its possible role with the destruction of the monument. The 'Drott' (see Figure 116) was parked atop the Foel and used for the moving of waste material at the town dump on the far side of the outcrop to the south. Clegwyn recalled that the Drott could be easily hotwired, and local youths

in the village nearby would often venture up and joyride the bulldozer around the Foel. He assumed that the destruction of the site may have been caused by one of these local youths crashing the bulldozer into Stone 2. This revelation made sense of the stones movement as there was no clear motive for a farmer to attempt to move a stone of this size, given that the land was unsuitable for arable farming and the out of the way nature of the stone itself. Clegwyn's tale therefore allows more thought about the formation of the site, including the recently visible huge linear groove visible on stone 2. The groove, running horizontally along the southern edge of the west face of Stone 2, is likely to have been made by the bucket of the Drott as it impacted the side of the boulder. This would also account for the destruction of some of the architectural elements on the site, including the packed stone excavated previously. Based on this information it can be confidently said that this is indeed the base of an orthostat used to support the capstone, albeit a low one.



*Appendix 31: Image of a Drott.*

Following the conversation with Clegwyn and Dafydd the excavation continued down into the purple black clay layer within the pit. It was noticed that this layer of stratigraphy had an unpleasant organic odour emanating from it. During the excavation of this bad smelling layer it was immediately followed by the discovery of large pieces of plastic, unlike the shredded plastic bags found in the animal nest in the layers above. The first plastic bag to be found was a Barclays coin bag, assumedly having not travelled far as the local branch of Barclays at Llanerchymedd is noted by locals to have closed down sometime in the 1980's. However, a



lack of definitive evidence of which branch the money bag came from makes it difficult to derive a date from this finding. The next artefact to be found was another piece of plastic bag, this time a Nimble bread wrapper. This brand of bread was popular in the mid 1970's on account of Nimble bread being an early pioneer of health food and having a catchy jingle song on the advert ('I Can't Let Maggie Go' by Honeybus) which featured a model suspended beneath a hot air balloon as it flies over the Alps.

These artefacts align with Clegwyn's story in that the monument would have still been standing or partially standing during the 1970's, as the destruction layer which included the fragmented upright supports was found above this layer of 1970's detritus. From the defined stratigraphic sequence this layer had been sealed by the destruction layer atop, preserving its contents. What wasn't clear at this stage however was its final depth as well as whether any earlier artefacts may have been mixed in with its contents, given the visibly disturbed nature of the site.

*Day 11 – 27/4/2021*



*Appendix 32: Aerial View of Trench - Day 11*

Day 11 began with the continuation of the removal of the 1970's bad smelling layer of stratigraphy (See Figure 117). The exposed area, measuring 1.55m east to west and 1.04m north to south, was within what was assumed to be the possible chamber of the megalithic tomb. To the north the upright section of a large rock was observed, which was later identified to be part of a natural outcrop. Another layer, which was a lighter coloured clay layer began to be revealed and it was at this point that it was noticed that the stratigraphy was on a flat plane and the descent into the pit had bottomed out. This lighter clay layer was only a few centimetres deep and was followed by a tightly packed darker clay layer with stone inclusions that seemed almost uniform as if mettled and it was on top of this flat layer of stratigraphy that the first prehistoric artefact of the excavation was discovered.

A cylindrical (oval profile) polished sandstone artefact that tapered to a point at one end and appeared broken at the other. This polished stone (see Figure 118) measured just over 13 centimetres in length with a diameter of 4.2 centimetres at its thickest end and 2.4 centimetres at its thinnest point, weighing 227.44g. Just over half a metre to the west another piece of this stone object was found, sitting atop the same tightly packed stone and clay layer which was now clearly a floor surface and likely from the finds the prehistoric archaeological horizon. This second piece of polished stone was 7.6 cm in length, weighing 199.74g and with a diameter of 4.2 cm at its thickest end and 3.6 cm at the thinnest (for both stone objects in situ see Figure 119). The larger side of the taper fit perfectly onto the other stone item discovered earlier and it was clear that this was another piece of the same artefact. The polished stone artefact comprised of a quartz rich sandstone with large quartz crystal structures often found in geology found in the Pennines.

The material would have proven to be both too sandy and brittle to be used as any type of functional tool - such as a polished stone axe, adze or ard. Instead, the material used in its creation implies another use, as this type of stone is recorded as being predominantly used in both sharpening and honing whetstones in later Bronze Age or Iron Age contexts. It is possible that this artefact is a Bronze Age addition to this Neolithic monument as Bronze Age deposits being found in Ty Newydd have given the clearly Neolithic tomb, with its lack of earlier artefactual evidence, a terminus post quem of Bronze Age date (Philips 1936, pp. 97). It is also possible that this is a polishing stone for stone axes, but this is unlikely as the hard material often used on Anglesey for polished stone axes such as the Graig Llwyd stone would destroy this artefact unless it is used for the gentle final finish of the axe. It is also possible that this



item is a symbolic representation of an axe, ard or adze and was created for the sole purpose of being interred into the monument as a grave good.

The fact two parts of the same item were found over half a metre apart on the floor surface (see Figure 119) suggests that the item had been broken prior to interment and the ritual breaking of objects is an action found throughout many periods on the British Isles with some thinking that a broken item is put into a tomb to accompany the broken human into the next life. Although this artefact's identity and function has currently proven difficult to establish it is likely that this polished stone item is indeed prehistoric and dates to anywhere from the Late Neolithic if it is a symbolic representation of a tool or sceptre, to the Iron Age if it is a whetstone.



*Appendix 33: Worked quartzite-rich sandstone object (1 & 2); found during excavation. The object was found in pre-existing in a truncated state prior to recording.*



*Appendix 34: Image taken of the polishing stones fragments as they were discovered in the trench.*



Day 12 – 28/4/2021



*Appendix 35: Aerial View of Trench - Day 12.*

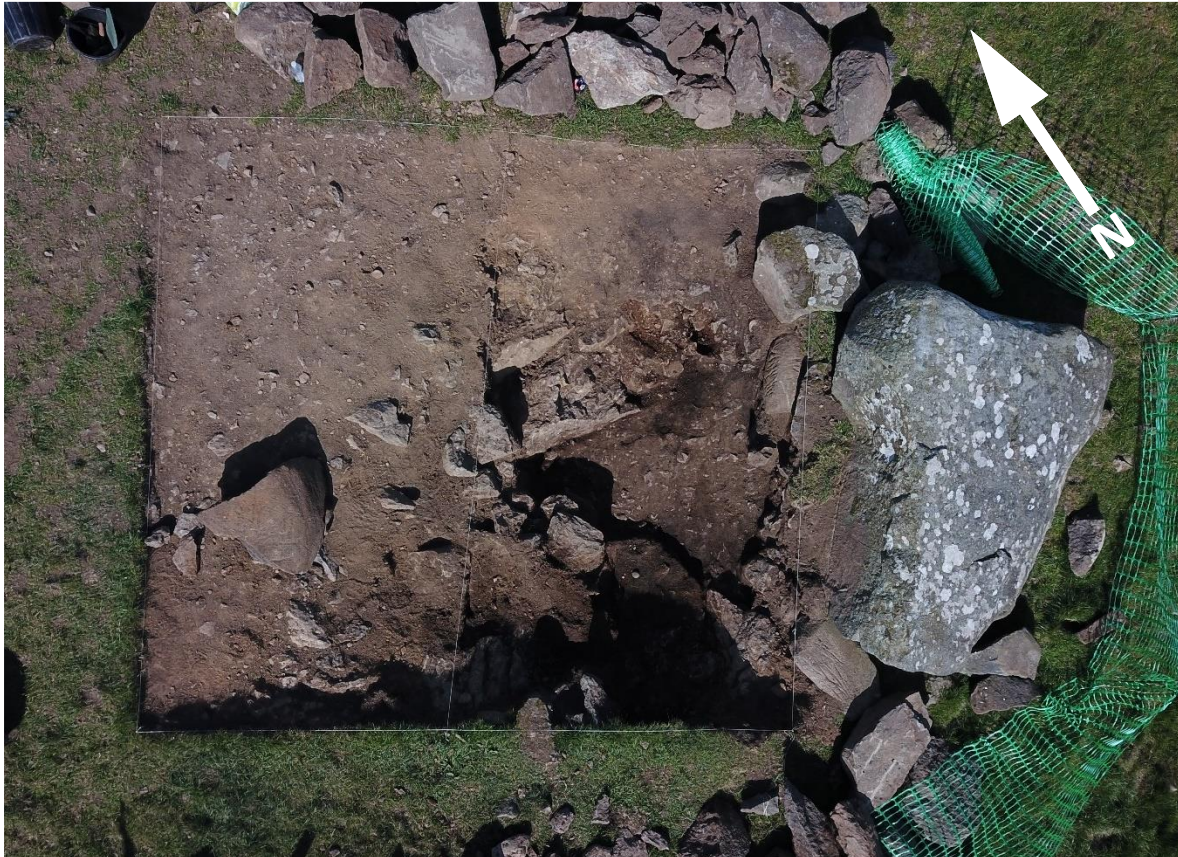
Day 12 (see Figure 120) saw a change in the approach towards the site. It was determined at this point that the trench be halved with a focus towards the possible chamber area of the tomb, identified through the discovery of the polished stones on site. A line was drawn across the trench at this point, with the western section of the trench being shut down (see Figure 120). Following this work continued with the further uncovering of the floor surface of the tomb with natural bedrock beginning to appear in the southern, western sections and north of the trench. Of interest, the bedrock to the north appears to have been broken up at one stage, as excavation failed to trace any continuation towards the northeast as would be expected. This may suggest a deliberate gap in the bedrock and may have served as a possible entrance to the tomb. Traces of burning in the form of small fragments of charcoal (less than 0.2mm across) and black patches was found interspersed among the small stones and clay of the floor surface and evidence of burnt vitrified stone was found across the areas of bedrock surrounding the floor surface. This was reminiscent of the mark of fire being everywhere comments made by Hemp during the Bryn Celli Ddu excavation and it was also becoming obvious that the pit feature was



smashed into the natural bedrock itself, an architectural feature seen at tombs such as Lligwy and Pant Y Saer on the island (see ‘comparative tomb sites to Bedd y Foel’ section).

It is of interest that the broken stone area appears to be focused on an area which overlooks Dulas Bay. This will be discussed in the conclusion as the possible evidence for an entrance to the site.

*Day 13 – 29/4/2021*



*Appendix 36: Aerial View of Trench - Day 13.*

Day 13 (see Figure 121) saw the last of the large stones of the destruction layer removed with help of volunteers and this enabled the uncovering of the entirety of the floor surface (apart from that which is still beneath Stone 2 to the far east of the trench). Excavation continued with trowels to clean back the floor and uncover as much as possible, further evidence of fire and quarrying into the bedrock was found with a ‘shelf’ of bedrock having part of the floor surface clay atop it to the north of the floor surface (see Figure 121).

It was on this shelf that the 3<sup>rd</sup> prehistoric artefact was found, a large pebble unlike any pebble that we had found in the trench thus far (see Figure 122). This pebble fit well in the palm of



the hand, measuring 5.3cm long, 4.6cm wide and 3.5cm thick, with a weight of 122.87g. In comparison with the other pebbles being tiny quartz inclusions that had fallen out of the natural conglomerate that makes up parts of the Foel, and larger pieces being found in the farmers clearance cairn layer and the destruction layer this object stood out as being unusual and non-native. This large pebble consisted of a hard granite which may have made its way to North Wales from Scotland by way of glacier during the formation of the Isle of Anglesey landscape (Wilson, per. comms.). It was observed that the pebble has a remarkably flat edge on one side, oval in profile and measuring 1.9cm by 1.6cm wide and showing clear signs that it had been used as a polishing stone or pestle to go along with a quern stone mortar. This artefact was again found on top of a raised area of the 'floor surface layer', roughly oval in profile and measuring 0.80cm east to west and 0.82cm north to south, with a thickness of 7cm. Its discovery is yet further evidence of the prehistoric origin of the site which is now referred to as Bedd Y Foel by the author of this study ('The Barren Tomb').



*Appendix 37: Polished pebble, found during excavation.*



*Appendix 38: Aerial View of Trench - Day 14.*

Day 14 (see Figure 123) saw the full recording of the floor surface layer and then we started to excavate down into the clay layer. At this stage natural bedrock was observed to encroach the area of the floor surface on all sides – the southern side appearing as a gradual slope with areas of jagged rock to the southeast. On the northern side A long hinge fracture line measuring 1.86m can be seen running across the stone in a north to south direction. The northern side contrasted greatly, with a large, raised rock face set at a steep angle.

On the southern side of the rock face a small depression in the bedrock was observed, measuring 0.48m (east to west) by 0.36m (north to south). The depression was observed to align precisely with the base of the orthostat (recorded on day 7) that had since been removed to allow for further excavation. As the soil is very shallow on this part of the hill it is possible that those erecting the tomb took this decision to ensure that the foundations of the tomb remained structurally sound before placing the large capstone on top. With this in mind it is possible to assume therefore that this part of the bedrock was modified to allow for greater depth prior to erection. The floor layer charcoal inclusions were found consistently throughout

the clay with minute flecks of chalky white material likely being cremated human remains within the charcoal deposits. The ephemeral remains of the bones were too small to accurately measure and have been allowed to dry out before further study can take place.

There were no discernible layers within the floor context with the same colour and consistency of clay and small stone inclusions continuing down and it was during the removal of the top layers of this context that the 4<sup>th</sup> prehistoric find was recovered from the trench at Bedd Y Foel.



*Appendix 39: Worked chert flake (3), found during excavation.*

This artefact (see Figure 124) was a small piece of black chert, chert is a stone much like flint which forms in limestone (with flint forming in chalk) and unlike flint is native to the island. Chert is often much lesser quality than flint for knapping on the British Isles with the material exploding into fragments when impacted with a hammerstone rather than the more controlled removal of flakes that can be achieved with flint. This being said the fragment of chert from the trench was of the highest quality that can be expected from the northwest of Britain and two percussion bulbs could be seen on both side of the piece, evidence that it had been struck from a core. The chert piece measures 2.7cm long by 0.9cm wide and 1.4cm thick, weighing

4.2g in total. More curiously, 3 tiny flake removals, measuring 3.26mm across and 2.01mm in length, are visible on one edge. These flakes would have been removed using pressure flaking and is often known as 'retouch' when describing worked lithics and is evidence that this piece was further modified on removal from the core. It is likely therefore that this object could be considered as a flint tool. Unusually however, the 3 flakes seem to have been arbitrarily removed from an edge which would not have turned this flake into an obvious tool for any particular job. It is possible that it was not the functionality of the tool that was important to the ancient chert worker at Bedd Y Foel, but the importance of the material. The lack of natural flint sources in the area makes for small sometimes low-quality tools found across the island in comparison to the larger, fancier tools found in the chalklands of the southern British Isles. It could be that much like the cylindrical polished item that this chert piece was also symbolic, struck from a core with 3 flake removals pressure flaked from the edge, then placed as a grave good on the floor surface of the Neolithic tomb.

By the end of the day the full surface of the floor was beginning to be revealed. This surface (see Figure 125) measured 1.29 metres northeast to southwest and 2 metres northwest to southeast. The complete floor surface was triangular shaped, with no doubt more of the floor currently buried underneath the spot where the capstone presently sits. The floor itself is made up of a number of small, compacted stones, measuring between 2 cm to 10 cm long and appeared to have been arranged in a deliberate fashion into the surface of the clay. Few of these stones were recorded near the platform where the polished pebble was discovered previously and may be interpreted as a possible shelf or platform made from local clay.





*Appendix 40: Measured drawing of floor plan of tomb (dark brown) with location of cutting (light brown, dotted, possible platform (grey) and polished pebble (black) – see Day 15. Bedrock is represented by light blue colour. Stone 2 (A) and grooved stone (B) annotated*

*Day 15 – 6/5/2021*



*Appendix 41: Aerial View of Trench - Day 15 (measuring rods for scale)*

Day 15 (see Figure 126) was an open day on site with the local primary school visiting for a socially distanced site tour and talk about prehistoric artefacts uncovered. The school enjoyed the visit, and the experience proved a positive one for the pupils, as the school is situated at the base of the Foel on its western side.

This was followed by a visit to Dave Wilson (PhD), a local geologist at Stone Science (Llanddyfnan), to help identify the geology and possible geographical origins of the finds found from the trench so far. Following this visit Dave assisted the author in identifying the quartz rich sandstone of the cylindrical artefact having originated in the Pennines and was probably imported to the area by prehistoric humans (perhaps on account of the large quartz crystals which make the stone twinkle when they catch the light). The hard, blackened granite of the big pebble was assumed to have come from Scotland via glaciation. Dave agreed that the chert



tool was of local origin, presumably from the eastern part of the island, although residual chert has been found in the soils in the area (albeit of varying quality, several examples of worked/natural chert have been found in Coedana – see Owen 2018).

*Days 16 and 17 – 7-8/5/2021*



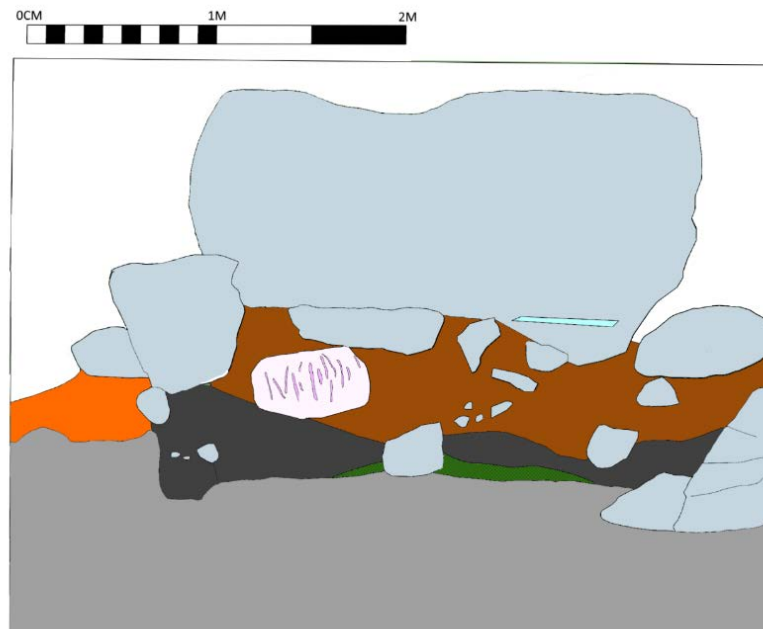
*Appendix 42: Grooved stone located at NW section of trench (centre left of image).*

Days 16 and 17 saw the recording of the section of the trench below stone 2. By this point of the excavation, it was clear that a stone with large grooves across its surface that was within the section and directly beneath Stone 2, was a possible artefact (see Figure 127). Initially, it was thought at first that the marks on its surface were due to plough damage. It is difficult to imagine that ploughing would have taken place at the summit – the outcrop is visibly exposed in many places which suggests a soil depth unsuitable for arable farming. The estimated weight for the stone, combined with its depth, makes it unlikely that it was brought over to the site and dumped by a farmer. This suggests therefore that the stone was originally on or near the summit of the Foel and was not brought over. The stone was recorded in situ along with the entire section of the trench including stone 2 and the depth of the layers of stratigraphy up to the floor surface of the tomb itself. After the section was recorded the grooved stone was removed and further analysed showing deep grooves on all sides. This would suggest therefore that this stone

may have been a polishing or honing stone of some kind and may have been associated with the megalithic tomb.

The stone is roughly cylindrical in shape, with a rounded end becoming visible. It measures 63cm in length, 32cm wide and is 31cm in height, and is assumed to weigh at least 70kg. The large deep grooves were now visible on 3 sides, with 18 grooves on one side and at least 7 on another side. Furthermore, the grooves are much larger and wider than was found on plough marked stones found in the clearance cairn layer above the destruction layer, varying between 12cm and 3cm in length, and are non-unison, with some grooves criss-crossing at some places. It was suggested with conversation with Dr Ben Edwards (pers. Corr.) that the stone may be a later polishing stone, of medieval date. Further analysis would be needed to confirm this which, given the weight of the stone, would not be possible to do at this stage. The stone was to be left on site until future arrangements can be made for its safe retrieval off site.

The floor surface was then excavated in the south of the trench down to the bedrock and was found to only descend to a depth of 23 centimetres at its deepest. The floor appeared to descent into a V-shaped channel into the bedrock (see Figure 129). No further artefacts were found in this part of the trench and seeing that natural geology had been reached the southern quadrant of the excavation was shut down.



*Appendix 43: Section drawing of eastern side of BYF trench, showing infill (brown); 1970s layer (dark grey) and turf layer (dark green); alongside floor (grey) and natural (orange).*



*Day 18 – 13/5/2021*



*Appendix 44: Aerial view of trench - Day 18 (measuring rods for scale)*

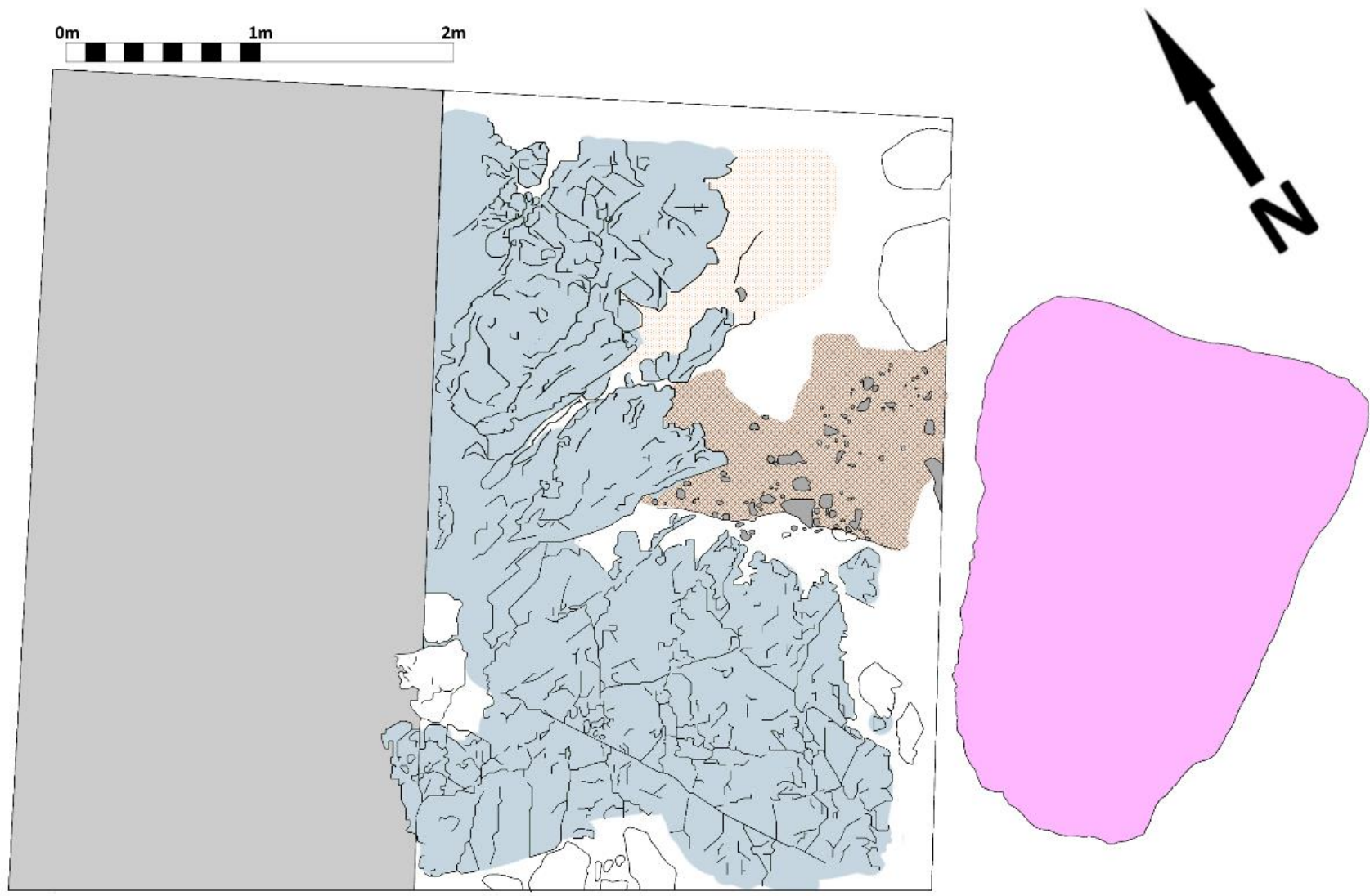
By day 18 it was clear that the excavation was coming to an end, it was decided that the remaining area of floor surface in the north-eastern quadrant would be cleaned back and then removed and bagged. The soil would then be floated in a water tank with the organic remains floated to the surface and separated from the earth. These could later be collected, dried and sent for radiocarbon dating at a future date. Excavating through the floor levels it was soon discovered that the floor consisted of a mix of broken, quarried stones mixed in with clay. Many of these stones measured between 2cm and 10cm as before, with the greater density of larger stones to be found nearer the bottom of the trench.

During the clean back the last artefact was recovered from the Foel excavation; a rough chert blade which again was found within the top layers of the floor surface (see Figure 130). This chert blade, weighing 8.8g and measuring 3.1cm long, 1.7cm wide and 1.9cm thick, looks much like all of the chert tools found during the excavation being rough in appearance, with little sign of careful preparation apart from the tell-tale signs that it had been knapped at some point.

The rest of the floor surface was excavated and put into a small, reinforced rubble bag for further analysis, and it was at this point that the extent of the pit that had been smashed into the bedrock could be seen. The final aerial photographs were taken with the drone and then the trench was back filled with the dressed stone left in the top layers as we did not have the resources to remove these massive stones from the Foel itself.



*Appendix 45: Worked chert piece (5); found during excavation.*



*Appendix 46: Measured plan of final layer of excavation at Bedd Y Foel. Light blue is bedrock, pink is Stone 2, light, hashed brown is floor surface, with orange area evidence of crushed/smashed bedrock.*



## Summary

To summarise the excavation atop the Foel was a great success. The discovery of five stone artefacts alongside evidence of architectural features such as the floor surface and upright stone in the pit can be used to decisively prove the prehistoric date of this site and its life as one of the many variations of megalithic tomb that can be found across the isle of Anglesey. Unfortunately, the monument was so badly damaged in modern times that it remains completely impossible to definitively identify the type of tomb that once stood on the Foel. It is beneficial therefore, that with the help of the living memory of locals from the nearby town of Llanerchymedd, it was possible to not only find out how the tomb came to be in such a state of disrepair with a bulldozer hitting it but also the time at which this happened in the mid 1970's. This date was confirmed by the 1970's layer found above the prehistoric horizon (see Figure 132).

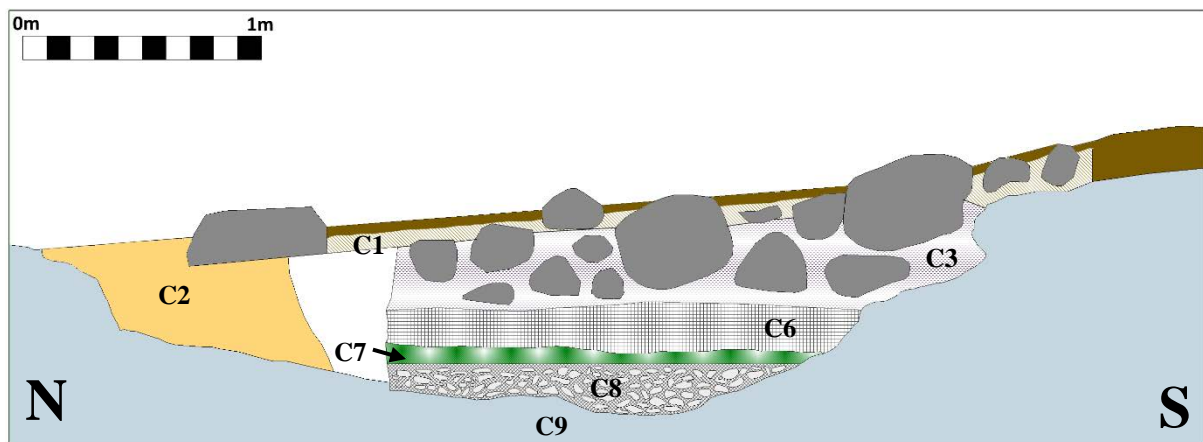


*Appendix 47: Selection of identifiable plastic waste uncovered during Bedd y Foel excavation: (clockwise, measured) - Nimble Bread bag (c.1970s); Chefs Garden Fancy Garden Peas; McCains frozen chips; Barclays silver denomination £5 bag (1970-1980s, from local bank in village); frozen pop bag; Mashed potatoes; Jungle Fresh peanuts (c. 1970s).*

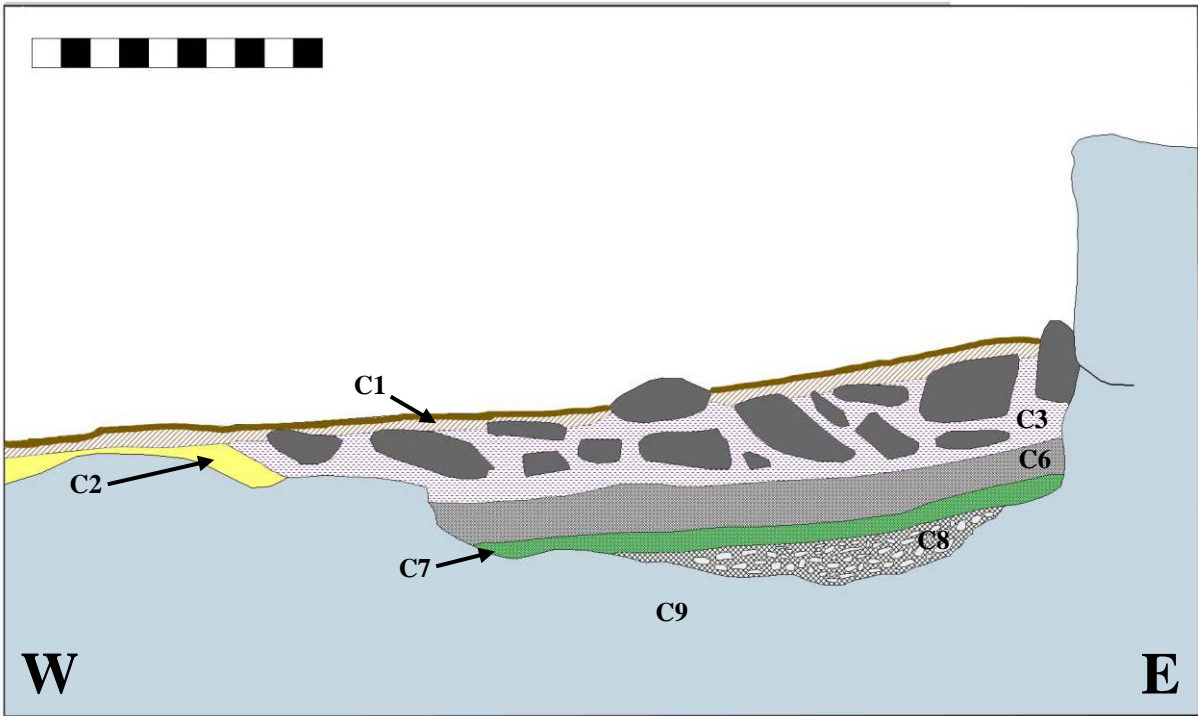
The artefacts recovered from the excavation that can be identified as prehistoric in origin were all recovered from the same sealed layer of stratigraphy that was immediately beneath the



1970's layer and within the clay "floor" surface of the tomb (C6, see Figures 133 and 134). This floor surface had been laid above a pit that had been crudely smashed into the bedrock of the Foel itself with the use of hand tools, with no evidence of heat being used to crack the stone (known as 'fire setting'). The first and second artefacts found were two parts of the same piece, a curious cylindrical item that could be a whetstone or symbolic tool that was shaped from a quartz rich sandstone sourced from the Pennine ridge that runs through the centre of northern England. The large pebble with one flattened end is another example of a stone that was likely to be used for polishing and its presence in the trench was very noticeable on account of no pebbles similar had been found of this size or type at any point during the excavation. The chert tools, although unrefined as far as the fabrication process, were clearly worked by human hands and placed within and atop the clay floor surface and were clearly offerings, likely grave goods. The only evidence of possible human remains were the small ephemeral patches of white chalky material that was so sparse that only a small amount could be recovered and analysed. Even after analysis the identification of this chalky substance was left in doubt with no pieces large enough to identify cortical or lamellar structure which would prove it to be the remnants of cremated human bone.



*Appendix 48: Cross-section of 'Beddy Foel' trench, showing middle section of chamber (North-South orientation; eastern section of trench) with features coloured and contexts highlighted. Topsoil marked with dark brown colour, bedrock in light blue colour.*



*Appendix 49: Cross-section of 'Bedd y Foel' trench, showing middle section of chamber (West-East orientation; central line across chamber/trench) with features coloured and contexts highlighted. Topsoil marked with dark brown colour, bedrock in light blue colour.*

## Context sheets (Bedd y Foel Excavations – BYF2021)

### Context Record

Site Code: BYF2021	Area: #BE	Trench: 1	Context: 1
Date: 17/4/2021		Recorded By: M W	

Feature Type:	Deposit: <input type="checkbox"/>	Cut: <input type="checkbox"/>	Fill: <input checked="" type="checkbox"/>	Structure: <input type="checkbox"/>
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**Description:**  
 DARK BROWNY BLACKISH SOIL INTERSPERSED WITH LARGE BOULDERS AND SMALL PATCHES OF BURNING. STONES LOOK ARE MIXTURE OF HORNBLENDE PICTRITE, GRANSTONE & CONGLOMERATE. IT IS LIKELY THAT THIS CONTEXT IS A DESTRUCTION LAYER, CREATED WITH BY THE EVENT THAT CAUSED THE STONE 2 TO BE MOVED 3m & ROTATED 90° TO ITS CURRENT POSITION POST 1945. A NUMBER OF THE HORNBLENDE STONES LOOK LIKE THEY HAVE POSSIBLY BEEN DRESSED WITH ALL THE DECORATED STONES BEING EXCAVATED FROM THIS CONTEXT.

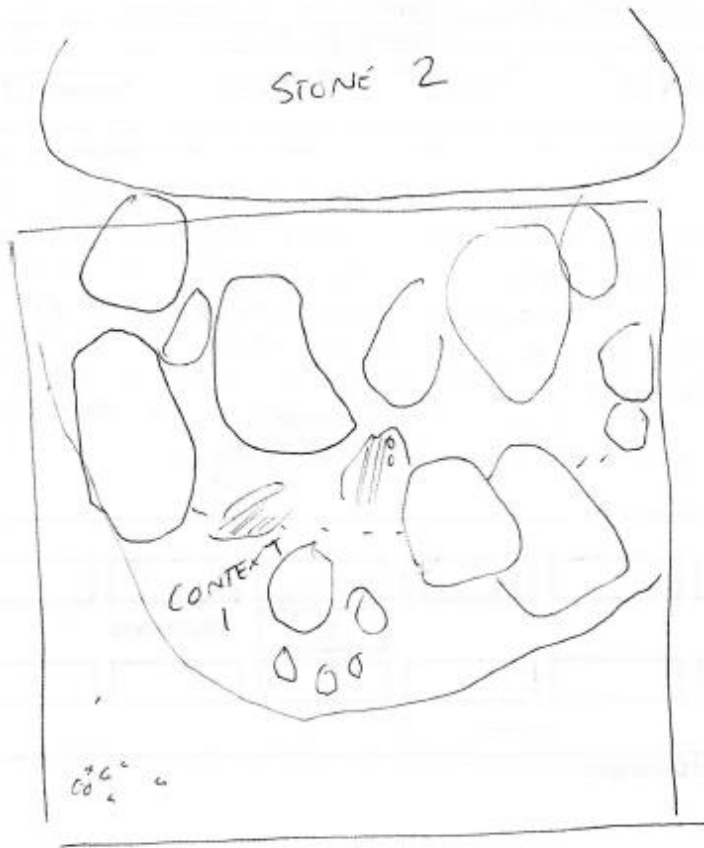
Above:				TOPSOIL		
			9	This Context:		
Below:						

Other Comments and Discussion:

Finds: Pot <input type="checkbox"/>	Lithic <input type="checkbox"/>	Bone <input type="checkbox"/>	Metal <input type="checkbox"/>	Other <input checked="" type="checkbox"/>			
Small finds:	 	 	 	 	 	 	 

Samples:		
Plan: 1 + 2	Section:	Photo: DJI_0389; DJI_0390; DJI0311 C.DNG & Jpe) DNG - RAW DATA EQUIVILANT COJI Proprietary software)







## Context Record

Site Code: BYF2021	Area: W	Trench: 1	Context: 2
Date: 17/4/21		Recorded By: AU	

Feature Type:	Deposit: <input type="checkbox"/>	Cut: <input type="checkbox"/>	Fill: <input checked="" type="checkbox"/>	Structure: <input type="checkbox"/>
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**Description:** Orange - yellowish Soil consisting of mix of small and medium stones, with a concentration of large stones (natural) on NW side. Stones are mix of gneiss, conglomerate, quartzite and hornblende gneiss. Assumed natural with compacted stone in N corner -> possible remains of a trackway associated with 1945 photo, although may be structural element like base of cairn. Compacted clay - pattern may be related and created by livestock or created by former R. 1945 of Hordakaus

Above:				<del>2</del>	TOPSOIL		
			2	This Context:			
Below:							

**Other Comments and Discussion:**  
 Large section of identical stone in NE corner of trench -> possible natural bedrock.

Finds: Pot <input type="checkbox"/>	Lithic <input type="checkbox"/>	Bone <input type="checkbox"/>	Metal <input type="checkbox"/>	Other <input checked="" type="checkbox"/>			
Small finds:							
△	△	△	△	△	△	△	△
▱	▱	▱	▱	▱	▱	▱	▱

<b>Samples:</b>		
Plan: 1 + 2	Section:	Photo: DJI_0389; DJI_0390; DJI_0391 & DJI_401 -> Aerials (DJI format - DJI equivalent of Polar format) <span style="float: right; font-size: small;">3/5/2021</span>





Depth of Context 2 (2m)

(fossil)	120 430	220 175	320 80
110	140 460	240 240	340 60
150	160 360	260 200	360 40
190	180 280	280 130	380 30
230	200 220	300 0	400 20
270			420 60
310			430 (fossil)

## Context Record

Site Code: BYF 2021	Area: S+NW	Trench: 1	Context: 3
Date: 20/4/21	Recorded By: AO		

Feature Type: Deposit: <input type="checkbox"/>	Cut: <input checked="" type="checkbox"/>	Fill: <input type="checkbox"/>	Structure: <input type="checkbox"/>
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**Description:** Round-edged cutting which encloses half of the trench. Feature cuts into context 2 and was filled with context 2. A large number of stones have been recorded -> largest boulder - stones cut with stones diminishing in size as the pit ~~has~~ has deepened. Pit ~~is~~ shallower on N + E sides and extends deeper on W side.


Above:  Topsoil  1  2  4

3 This Context:

Below:

**Other Comments and Discussion:**  
Evidence of vermin nesting between gaps of stones, previously interpreted as a chamber

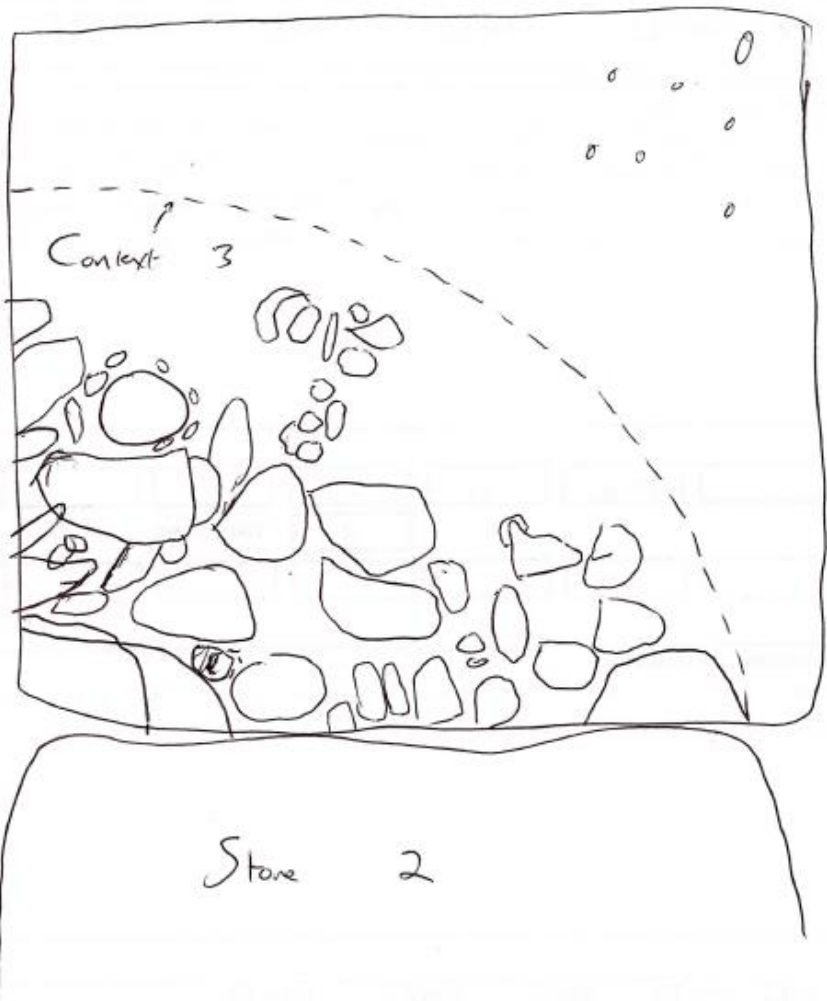
Finds: Pot  Lithic  Bone  Metal  Other  I

Small finds: 

Samples:

Plan:	Section:	Photo: DJI M407; DJI-0408; DJI-0409 + all photos up to present TP6 + DNG format -> Orig. proprietary RAW IMAGE DATA
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Hand-drawn sketch





## Context Record

Site Code: BYF2021	Area: S	Trench: 1	Context: 4
Date: 22/4/2021	Recorded By: MW		

Feature Type:	Deposit: <input type="checkbox"/>	Cut: <input type="checkbox"/>	Fill: <input checked="" type="checkbox"/>	Structure: <input type="checkbox"/>
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**Description:**  
~~SECRET FOR U~~ DARK FILL WITHIN POSIHOLE, STUBS OF PRESUMED UPRIGHT REMOVED TO REVEAL PIT FEATURE WITH DARK BROWN SOIL FILL CUT INTO ORANGY YELLOW CLAY OF CONTEXT 1. PACKING STONES SURROUNDING THE STUMP WERE SET INTO THIS CONTEXT WHICH IDENTIFIES THIS FEATURE AS A STRUCTURAL ELEMENT OF THIS MONUMENT & THE BEST EVIDENCE WE HAVE THUS FAR OF THAT IDENTIFIES THIS SITE AS THE RUINS OF ONE OF THE MANY VARIANTS OF NEOLITHIC TOMBS FOUND ON THE ISLAND (LIKELY A PORTAL DOLMEN). THE PIT IS 85cm N/S and 55cm E/W AND TO A DEPTH OF BETWEEN 40 & 45 cm

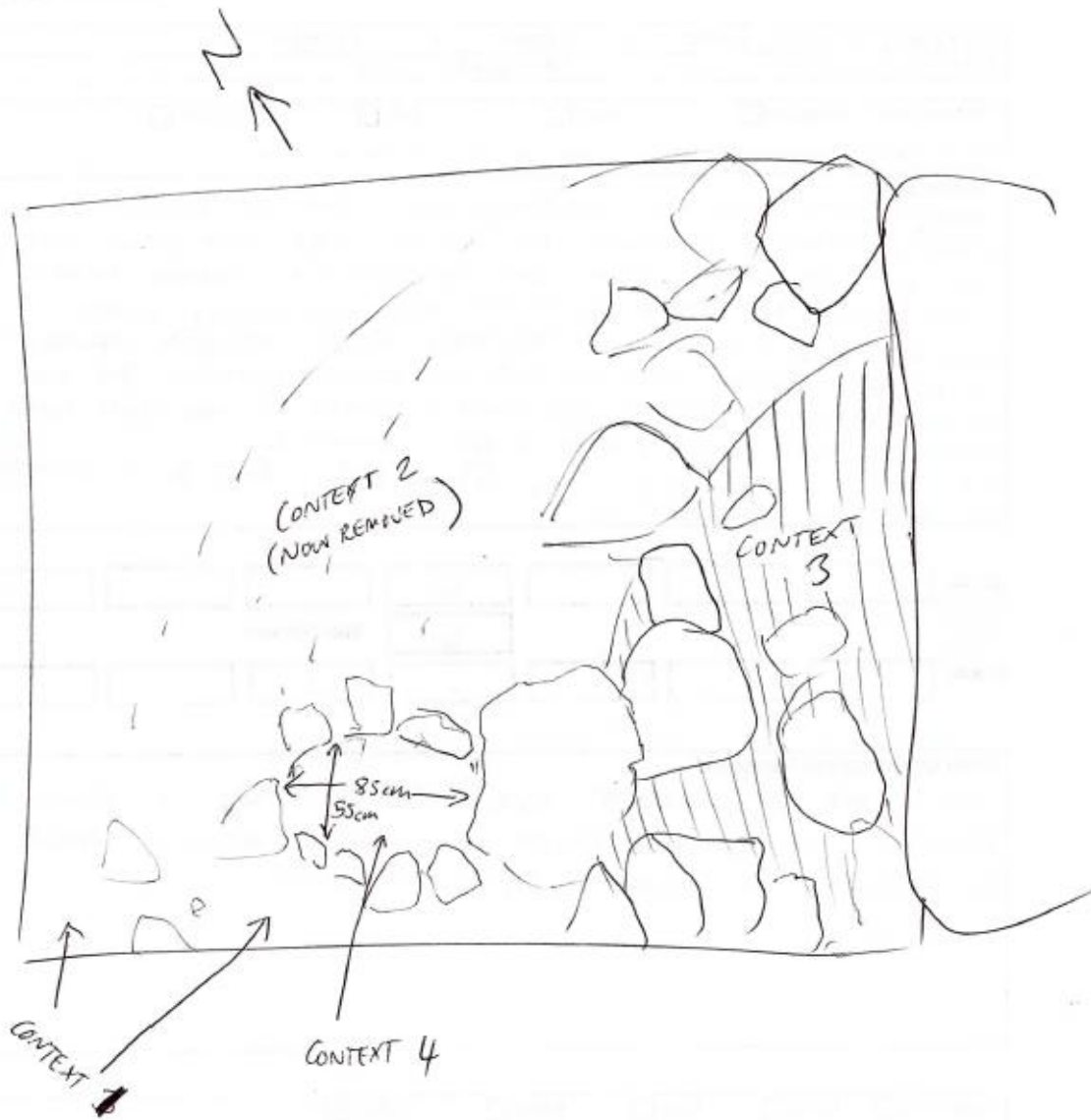
Above:			2			
			4	This Context:		
Below:			1	3		

**Other Comments and Discussion:**  
 THE STUMP OF ORTHOSTAT LOOKS SHAPED INTO A POINT POSSIBLY TO AID IN PLACING THE STONE UPRIGHT PRIOR TO INSERTION OF PACKING STONE MATERIAL.

Finds: Pot <input type="checkbox"/>	Lithic <input type="checkbox"/>	Bone <input type="checkbox"/>	Metal <input type="checkbox"/>	Other <input checked="" type="checkbox"/>			
Small finds:							
△	△	△	△	△	△	△	△
▱	▱	▱	▱	▱	▱	▱	▱

<b>Samples:</b>		
Plan: 3	Section:	Photo: DTI-4438 → DTI-4440 (chain JPE and PNG) Data - copying DTI RAW damage data





## Context Record

Site Code: <u>Byf 2021</u>	Area: <u>W</u>	Trench: <u>1</u>	Context: <u>45</u>
Date: <u>27/4/21</u>	Recorded By: <u>AO</u>		

Feature Type: <input type="checkbox"/>	Deposit: <input checked="" type="checkbox"/>	Cut: <input type="checkbox"/>	Fill: <input type="checkbox"/>	Structure: <input type="checkbox"/>
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Description:  
 Purplish / black clay which is sticky to touch / crumb. Colour suggestive of previous back line as section sits on face of exposed bedrock on SW corner of trench. Fine inclusions and roots visible from topsoil.

Above:	<input type="checkbox"/>	<del>Topsoil</del>	<u>Topsoil</u>	<u>21</u>	<u>4</u>	<input type="checkbox"/>	<input type="checkbox"/>
				<u>45</u>	This Context:		
Below:	<input type="checkbox"/>	<input type="checkbox"/>	<u>2</u>	<u>3</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

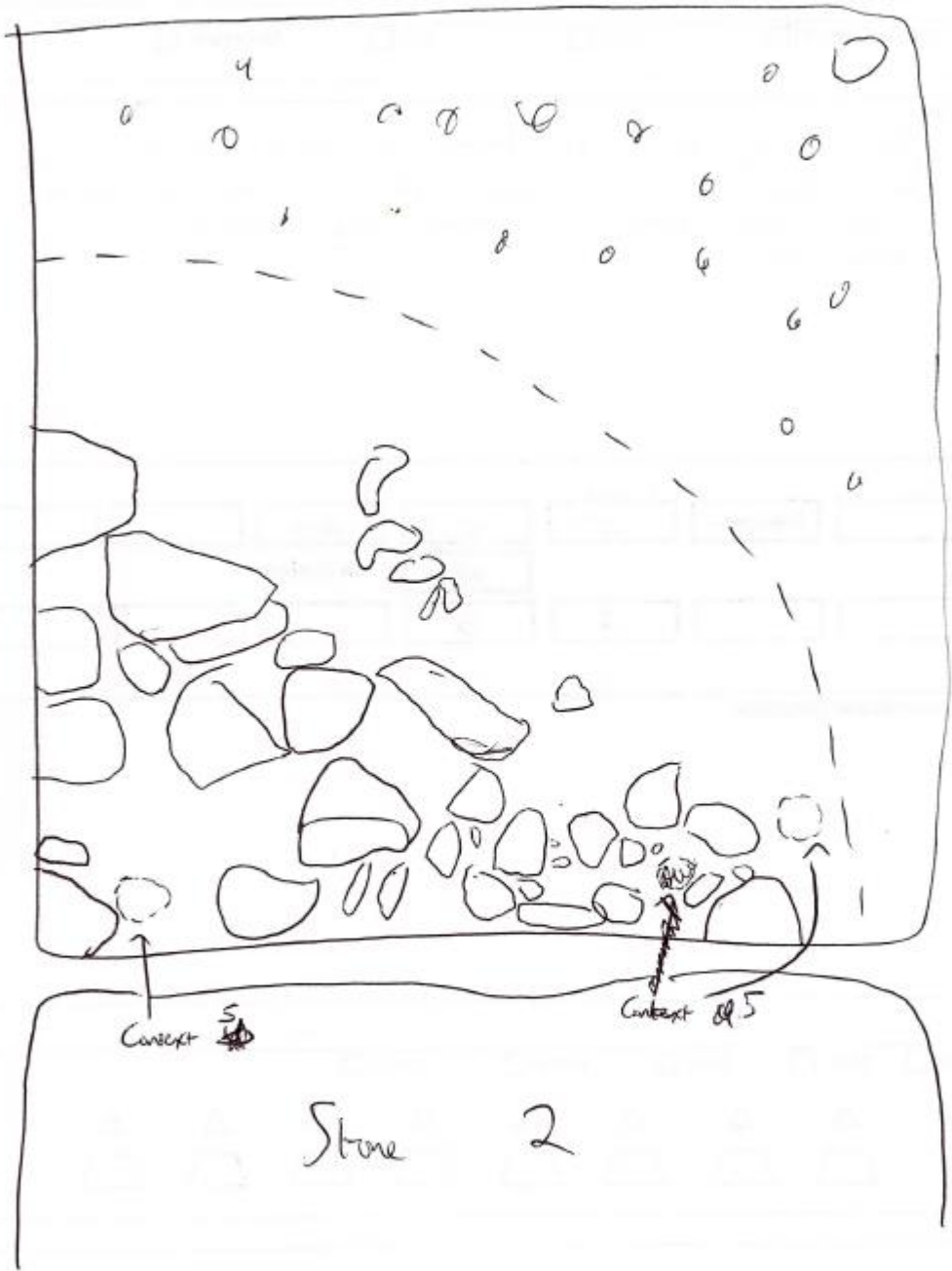
Other Comments and Discussion:

Finds: Pot <input type="checkbox"/>	Lithic <input type="checkbox"/>	Bone <input type="checkbox"/>	Metal <input type="checkbox"/>	Other <input checked="" type="checkbox"/>			
Small finds:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Samples:		
Plan: <u>3</u>	Section:	Photo: <u>DTI_0438 &gt; DTI_0440 Close JPs and DN</u> <u>DN - Refractory DTI RAW image data.</u>



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
## Context Record









Site Code: Byf 2021	Area: E	Trench: 1	Context: 6
Date: 27/4/21	Recorded By: AO		

Feature Type:	Deposit: <input type="checkbox"/>	Cut: <input type="checkbox"/>	Fill: <input checked="" type="checkbox"/>	Structure: <input type="checkbox"/>
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Description: Black / grey context consisting of degraded organic materials and waste of ~~plastic~~ <sup>plastic</sup> later date. Layer sealed beneath context 4, 3 and huffed under large ~~stone~~ <sup>stones</sup>. Fungus colour emanates from soil -> "wet fort" smell described by one excavator on site. Layer was quite thin -> less than 2cm in thickness and concentrated on one side of trench (east)

Above:	Tefini	1	2	4	5		
				6	This Context:		
Below:				3			

Other Comments and Discussion:  
~~Context~~ <sup>Context</sup> filled with waste material of modern date (1970's) - including Barlows <sup>SP</sup> change key, section of "Waste" brand and numerous unidentifiable plastic bags. A small cylindrical stone  was also found in this context.

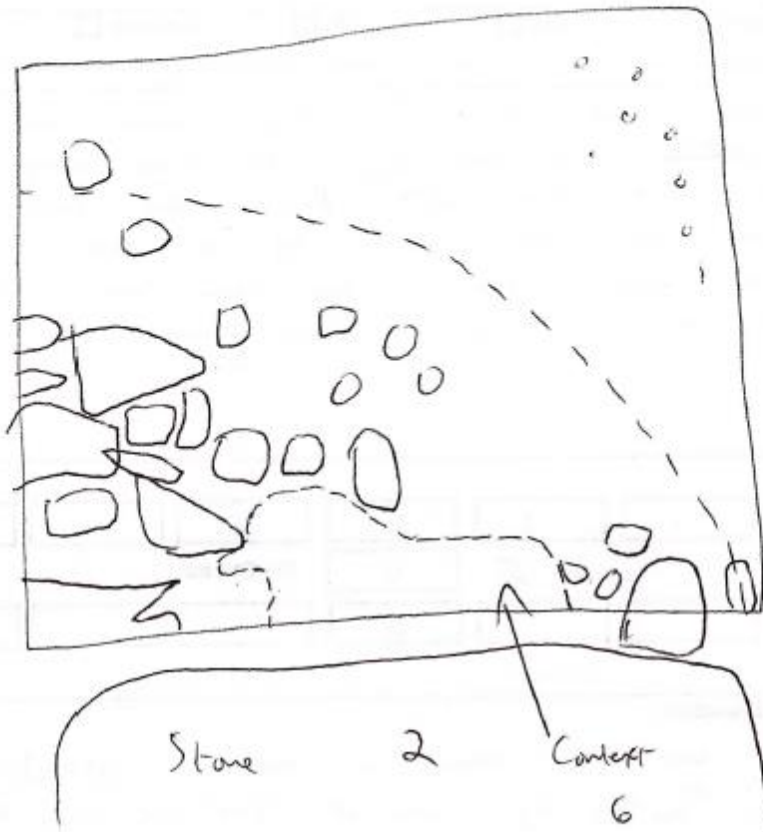
Finds: Pot <input type="checkbox"/>	Lithic <input type="checkbox"/>	Bone <input type="checkbox"/>	Metal <input type="checkbox"/>	Other <input checked="" type="checkbox"/>				
Small finds:								

Samples:
Plan: Section: Photo: <del>DJI-0416 to DJI-0500</del> as all from up in 29/4/21 CTPO and DNG -> DNG Preliminary DJI RAW image format.

Mönolith Archaeology  
[www.monolitharchaeology.com](http://www.monolitharchaeology.com)

DJI-0466 > 0469;  
 DJI-0490 > 0494  
 DJI-0498 > 0500





## Context Record

Site Code: <b>BYF2021</b>	Area:	Trench:	Context: <b>7</b>
Date: <b>5/5/2021</b>	Recorded By: <b>MW</b>		

Feature Type: Deposit: <input type="checkbox"/>	Cut: <input type="checkbox"/>	Fill: <input checked="" type="checkbox"/>	Structure: <input type="checkbox"/>
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**Description:**  
 GREENISH GREY CLAY LAYER THAT COVERS MUCH OF THE OUTCROP & AREA COVERED BY CONTEXT 6. SMALL PIECES OF STONE ARE FOUND WITHIN THIS LAYER & AN ORGANIC SMELL CAN STILL BE SMELT AS WAS FOUND WITH THE 1970S LAYER OF CONTEXT 6.

Above: TOPSOIL 1 2 3 4 5 6

7 This Context:

Below:   8 NATURAL

**Other Comments and Discussion:**  
 POSSIBLE BURIED TUFF LAYER

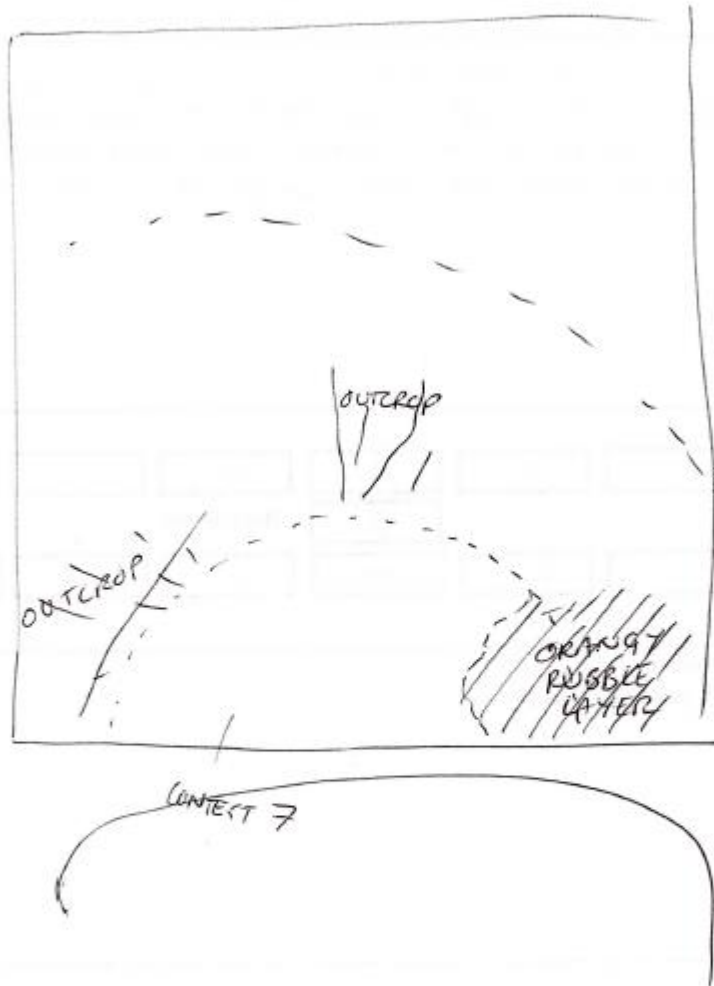
Finds: Pot  Lithic  Bone  Metal  Other

Small finds: △  
▱ △  
▱ △  
▱ △  
▱ △  
▱ △  
▱ △  
▱ △  
▱

Samples:

Plan:	Section:	Photo:
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## Context Record


Site Code: BYF 2021	Area:	Trench:	Context: 8
Date:		Recorded By: MLW	

Feature Type:	Deposit: <input type="checkbox"/>	Cut: <input type="checkbox"/>	Fill: <input checked="" type="checkbox"/>	Structure: <input type="checkbox"/>
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**Description:**  
 COMPACTED CLAY LAYER, CONTAINING FLAT STONES. THIS CONTEXT IS REMARKABLY FLAT COMPARED TO THE PREVIOUS CONTEXTS (1,2,3,4, 6,7,) WHICH HAVE BEEN DESCENDING INTO A PIT. THE POLISHED STONE ITEMS WERE FOUND SAT ATOP THIS LAYER & IT IS POSSIBLE THAT THIS IS A SEALED FLOOR SURFACE LAYER.

Above:	1	2	3	4	5	6	7	8	This Context:
Below:				OC					

**Other Comments and Discussion:**  
 HALF SECTIONED LAYER, CONTINUED DOWN FOR 23CM UNTIL OUTCROP WAS REACHED. ~~LAYER~~ FLAT STONES FOUND AT DEEPEST POINT THROUGHOUT CONTEXT UP UNTIL NATURAL



Finds:	Pot <input type="checkbox"/>	Lithic <input checked="" type="checkbox"/>	Bone <input type="checkbox"/>	Metal <input type="checkbox"/>	Other <input type="checkbox"/>	
Small finds:	△	△	△	△	△	△
	▱	▱	▱	▱	▱	▱

Samples:		
Plan:	Section:	Photo: