

CHAPTER 2

NEOLITHIC AND BRONZE AGE PEMBROKESHIRE

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INTRODUCTION

This chapter tells the story of Pembrokeshire between about 4000 BC and 700 BC, a remote period of more than 3000 years when life was quite different from that of more recent times. It is conventionally referred to as the Neolithic (4000–2000 BC), early Bronze Age (2000–1600 BC), middle Bronze Age (1600–1000 BC), and late Bronze Age (1000–700 BC), although advances in radiocarbon dating over recent decades provide a secure chronological framework that now allows us to talk in terms of specific millennia and centuries. What we present here is a summary based on currently available archaeological evidence that has survived to be described, investigated, studied, and interpreted by prehistorians and other specialists working in related fields. There are no written records to help us in this task; all we have to go on are the lumps, bumps, structures, monuments, deposits, and stray finds that survive in the modern landscape. Some remains, for example the Pentre Ifan megalithic tomb (Figure 2.1) and the Gors Fawr stone circle (Figure 2.3), are truly spectacular in their form and setting, and have long been recognized as tourist destinations and places for spiritual nourishment through their connections with the distant past. Other sites and finds may seem less impressive, but their contribution to understanding prehistory is no less important.

Modern Pembrokeshire covers an ancient peninsular projecting into the Atlantic Ocean, flanked on the south by the Bristol Channel and on the north by St George's Channel. The land is edged by a series of bays: Cardigan Bay in the north, St Brides Bay to the west, and Carmarthen Bay to the south. These seaways, part of a much broader network collectively known as the Western Seaways (Bowen 1972; Cunliffe 2001), do not separate the region from its neighbours such as Ireland, Cornwall, western France, and Iberia. Rather they



Figure 2.1. View of Pentre Ifan, Nevern, looking north-east.
[Photograph by Timothy Darvill. Copyright reserved]

form highways uniting the coastlands, providing a source of food and a means of communication. Archaeologically, facing the ocean in this way creates connections and brings complexity as influences from far and wide shape the cultural identity of successive communities living in the region.

To unfold the story of Pembrokeshire through the formative years of the Neolithic and Bronze Age we look first at a few landmarks in the way our archaeological heritage from the period has been studied, and then consider briefly the environmental background and the human biographies of these communities. The core of the chapter adopts a chronological approach by considering the monuments and social patterns represented in successive periods. Central to the narrative is the sequence of activity on Mynydd Preseli in north Pembrokeshire, and this is singled out for special consideration. Not only is this a mountain range visible from far out to sea, and most parts of the county too, but it is also the source of special stones whose placement in the centre of Stonehenge 250km to the east on Salisbury Plain gave that monument its power and purpose.

PIECING TOGETHER PEMBROKESHIRE'S NEOLITHIC AND BRONZE AGE PAST

Our knowledge of prehistoric Pembrokeshire has deep roots in the pioneering work of seventeenth, eighteenth, and nineteenth century antiquaries. They laid the foundations of what we know today, and we are especially indebted to them for three major works that have all been re-issued in recent times. The *Description of Pembrokeshire* by George Owen arose from the spirit of inquiry fostered by the British Enlightenment during the reign of Elizabeth I. It first circulated in manuscript form in 1603 and it was not until the late nineteenth century that a printed version became available (Owen 1892–1936), and a further century before a modern text with notes, introduction, and index appeared (Miles 1994). *An Historical Tour through Pembrokeshire* by Richard Fenton was first published in 1810 with a second edition in 1903 (Fenton 1810; 1903); the original was reprinted in 1974. It is an essential account of his travels through the county around the turn of the eighteenth century with many valuable descriptions of places and traditions. The *History of Little England Beyond Wales* by Edward Laws was written and first published late in the nineteenth century (Laws 1888) and re-printed in 1995. It uses the enhanced Three Age System chronology for prehistory that had been pioneered by John Lubbock only twenty years earlier (Lubbock 1865), and is packed with results from extensive research into Pembrokeshire's prehistory, archaeology, philology, natural history, and folklore. It is illustrated by delightful and important engravings of key sites such as Parc-y-Meirw near Fishguard (Figure 2.2).

By their nature all three works are fairly general and combine myth, legend, and observation with historical research. Archaeology emerged as a distinct



Figure 2.2. Antiquarian view of the stone row at Parc-y-Meirw, near Fishguard.
[From Laws 1888: 22]

field of study in the mid nineteenth century, and from that time onwards new kinds of investigation and systematic description of the surviving evidence can be found. *Archaeologia Cambrensis*, the journal of the Cambrian Archaeological Association, has been published annually since 1846 and contains a wealth of papers and reports relating to Neolithic and Bronze Age remains across Wales. From 1921 through to 1993 work was regularly reported in the *Bulletin of the Board of Celtic Studies* published by the University of Wales; in 1994 it was merged with *Studia Celtica*. Since 1961 these journals have been complemented by annual issues of *Archaeology in Wales* published by the regional branch of the Council for British Archaeology as a means of rapidly making available news of new discoveries and investigations. A Royal Commission on the Ancient and Historical Monuments of Wales (RCAHMW) was established in 1908 to record monuments and buildings parish by parish, county by county, across the country. They published an inventory for Pembrokeshire in 1925, a volume that remains an important gazetteer of sites and monuments known at that time (RCAHMW 1925). In the same year Mortimer Wheeler, at the time Keeper of Archaeology at the National Museum of Wales, published an overview entitled *Prehistoric and Roman Wales* devoting four chapters to the Neolithic and Bronze Age (Wheeler 1925).

It was not only archaeology that was being systematically mapped and recorded in the early twentieth century. The compilation of geological maps had been underway since 1815 and a century later work in west Wales led petrographer Herbert Thomas to recognize that most of the non-local so-called “foreign stones”, nowadays known as “bluestones”, at Stonehenge could be matched at outcrops in and around Mynydd Preseli. He presented his findings to a meeting of the Society of Antiquaries of London on 19 April 1923 and published his paper soon after (Thomas 1923). His conclusion that the stones “were transported by human agency, in all probability by an overland route” and that “some special non-material reason governed the removal of these stones” (Thomas 1923, 259) established a robust cultural linkage between south-west Wales and Salisbury Plain in the third millennium BC, and provides the starting point for much subsequent research in both areas.

Excavations at Neolithic and Bronze Age sites in Pembrokeshire continued apace through the 1930s and 1940s, much of co-ordinated by staff at the National Museum of Wales in Cardiff. Cyril Fox (1882–1967), Wheeler’s successor as Director of the museum between 1926 and 1948, assisted with recording and reporting excavations into round barrows at Kilpaison in 1925, Corston Beacon



Figure 2.3. View of the Gors Fawr Stone Circle, looking northeast.
[Photograph by Timothy Darvill. Copyright reserved]

in 1926, and Talbenny in 1941. All are summarized in his autobiographic account *Life and death in the Bronze Age. An archaeologist’s fieldwork* (Fox 1959). The report on Corston Beacon was co-authored with his deputy director W F Grimes (1905–1988), a Pembrokeshire man always known as Peter Grimes. Grimes also worked at Pentre Ifan in 1936, Meini Gwyr in 1937, and Bedd yr Afanc in 1938, opening up the archaeology of the area and illustrating its wealth and potential. And Hubert Savory (1911–2001), keeper of archaeology at the museum between 1939 and his retirement in 1976, undertook investigations at three barrows near Letterston in 1947 and 1961 and reported numerous finds from Pembrokeshire.

Students of prehistoric Pembrokeshire also have greatly benefitted from a series of catalogues published by the National Museum of Wales that were written by its staff. The first was published in 1939 (Grimes 1939a); revised, expanded, and updated it is better-known as *The prehistory of Wales* published in 1951 (Grimes 1951). This was followed thirty years later by the *Guide catalogue of*

the Bronze Age collections (Savory 1980a) and more recently still by the *Catalogue of the Mesolithic and Neolithic collections* (Burrow 2003). Grimes contributed a chapter on the prehistoric period in Wales to a volume celebrating 100 years of Welsh archaeology published in 1946 (Grimes 1946), and Grimes and Savory both contributed essays to a volume edited by Idris Foster and Glyn Daniel entitled *Prehistoric and early Wales* published in 1965 (Foster and Daniel 1965). More recently, Hubert Savory usefully summarized what was known of Neolithic Wales in 1980 (Savory 1980b). An important aspect of work by the National Museum reflected in all these publications is the identification and recording of chance finds. Over the past twenty years or so this has been formalized through the Portable Antiquities Scheme which has documented numerous important discoveries made through metal-detecting or which have been spotted during ground disturbance or erosion (Worrell et al. 2007).

The establishment of the Dyfed Archaeological Trust under the leadership of Don Benson in 1974 opened a new era for archaeological investigation in the region and a growing local involvement in commercial archaeology (Benson 1986). A number of early projects undertaken by the Trust focused on landscapes containing important Neolithic and Bronze Age remains, including Stackpole Warren (Benson et al. 1990) and the Glandy Cross area on the Pembrokeshire – Carmarthenshire border (Kirk and Williams 2000). The creation of a regional Sites and Monuments Record (SMR, now known as the Historic Environment Record or HER) for the area complemented and enlarged the National Monuments Record (the on-line version of which is known as Coflein) maintained by RCAHMW. The record has benefitted greatly over the past decade or so as results from the Cadw-funded project “Prehistoric Funerary and Ritual Sites” have been incorporated into the database (Cook 2006). It was a long-term project hitherto unparalleled in the remainder of Britain.

Over the last 30 years or so, discoveries arising from surveys and excavations undertaken as part of the planning process have also contributed much to the advancement of knowledge about the prehistory of the county. Whether small-scale building works, agricultural improvements, forestry planting, constructing coastal defences, enabling road schemes, or installing new infrastructure, excavations and associated watching briefs reveal new information about known sites and bring previously unknown remains to light. The largest such scheme in recent years has been the Milford Haven to Aberdulas section of the South Wales Gas Pipeline Project in 2005–06 which led to the investigation of fifteen substantial sites in Pembrokeshire alone (Barber and Pannett 2006; Walker forthcoming).

Field-based research has long been a feature of the archaeological landscape in Pembrokeshire. Building on the work of Peter Grimes and others mentioned above, Peter Drewett undertook a series of extensive surveys in the Preseli Hills during the mid 1980s, although little of it was published (Drewett 1987). In 2001 the present authors established a collaborative project known as SPACES (Strumble-Preseli Ancient Communities and Environment Study) with the aim of investigating settlements and ceremonial sites with particular reference to the use and meaning of Preseli bluestone at Stonehenge (Darvill and Wainwright 2002a; 2002b; and see Darvill et al. 2012a with earlier references). The project, still on-going, includes contributions from the RCAHMW, the Pembrokeshire Coast National Park, Bournemouth University, Bluestone Consultancy, and the Deutsches Archäologisches Institut in Berlin. Other research projects focused on the Neolithic and Bronze Age of west Wales that have started in recent years are also now yielding important results. A large team from half a dozen UK universities led by Mike Parker Pearson have been investigating possible bluestone quarries and associated sites on the north side of the Preseli Hills as part of the Stones of Stonehenge Project (Parker Pearson 2012, 261–91; Parker Pearson et al. 2015; 2015a; 2015b). Geological aspects of the bluestone sources have been thoroughly investigated by Richard Bevins and Rob Ixer (Bevins et al. 2014 with earlier references). Rock-art sites have been documented and investigated by George Nash and colleagues (Nash et al. 2011; 2013). And the megalithic monument at Garn Turne has been excavated as part of a wider project led by Vicki Cummings and Colin Richards that is investigating the dolmens of Britain and Ireland (Cummings and Richards 2014; 2015).

Advances in three areas not available to our antiquarian predecessors have particularly benefitted modern understandings and are key components of recent and ongoing research. First, palaeoenvironmental studies have provided a framework of the changing environments within which human settlement took place (J A Taylor 1980; Caseldine 1990; 2015). Second, scientific dating methods, especially radiocarbon dating, have provided an objective and independent chronology. And third, aerial photography and other forms of remote sensing have enabled us to see extensive remains of settlement that is not visible to us on the ground. Special mention may be made of the aerial photographs taken by Chris Musson (1994) and Toby Driver (2007) of RCAHMW which have revolutionised our understanding of early settlement and land-use across Pembrokeshire.

One important conclusion of recent research is that the distribution of recorded surviving Neolithic and Bronze Age monuments across the county is

not even. One study (Cook 2006) identified two bands across the county where monuments are slightly more dense than elsewhere. The first is from St David's Head to Preseli where the majority of sites are on land above 100m. The second is along the Ridgeway from Angle to Tenby which is regarded as a probable prehistoric trackway. These may be zones where monuments have survived better than elsewhere, or have been subject to greater archaeological attention and detailed recording, as opposed to actual differences in the density of ancient settlement. Only targeted survey work in those parts of the county which have been intensively cultivated and where sites are under-represented in the recorded distribution patterns will establish the truth of the matter. In the meantime, it must be remembered that the maps accompanying this chapter, compiled from data held by the Dyfed HER, reflect the distribution of recorded sites which is not necessarily the same as the pattern of prehistoric activity.

For those wishing to see the Neolithic and Bronze Age monuments at first hand, indispensable guides to the area are provided by Sian Rees (1992) and Paddy Figgis (2001). The background to prehistoric Wales has usefully been summarized by Frances Lynch and colleagues (Lynch et al. 2000) and Steve Burrow (2006; 2011), while a still wider view of prehistoric Britain is provided by Timothy Darvill (Darvill 2010).

ONE LAND, MANY LANDSCAPES

The basic structure of Pembrokeshire would have been familiar to those prehistoric communities whose lives are discussed in this chapter (Figure 2.4). In the north of the county is the Pencaer Peninsula and Strumble Head, from which St David's Head can be seen to the west on a clear day. Visible to the south is the Dale Peninsula and St Ann's Head, followed by the Cleddau Estuary and Linney Head, Castlemartin Burrows, and the sheer limestone cliffs of the southern coast.

The effect of the Irish Sea glaciations during the Pleistocene Ice Age can be clearly seen in the north of the county carving out the valleys, splintering the rugged hills of igneous and slaty rocks, and smearing both with glacial drift (Bowen 2005). Peat deposits have developed in many of the low-lying depressions left behind by the retreating ice-sheets, while blanket bog spread across parts of the uplands in Neolithic and Bronze Age times (Moore 1973). By contrast, the softer and flatter landscapes of sandstone and limestone in the south of the county are free of the acidic drift deposits and peat cover. They present

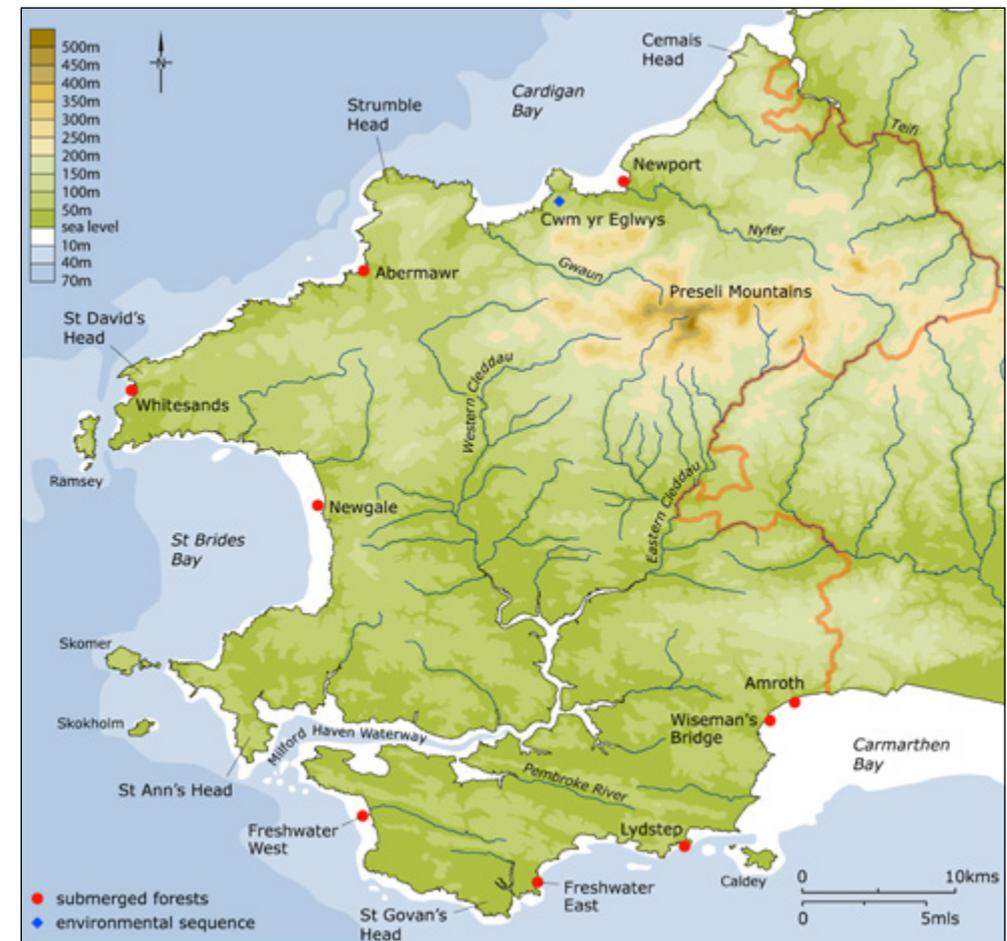


Figure 2.4. The topography and landscape of Pembrokeshire.

a more attractive proposition to farmers for arable agriculture (Bowen 1957), something that in recent times may well have eroded the remains of our ancient past and affected patterns of survival.

The whole county is characterised by rivers, streams, and springs. The most prominent is the River Cleddau, the two branches of which arise in the north of the county and flow separately south to join at Milford Haven where they form its magnificent estuary.

As previously mentioned, the influence of the sea is dominant and there are few parts of Pembrokeshire more than 15km from tidal water. But this has not

always been the case. Over the last 10,000 years or so relative sea level around the coast of south-west Wales has risen by some 60m, flooding what were coastal plains and valleys which are now under the sea. At around 8000 BC sea levels were some 25m lower than today so that the cliffs which currently fringe the coast would have been ridges overlooking flat marshy plains (Davidson 2002). Further rises between 8000 and 1000 BC had the effect of submerging low-lying coastal areas, robbing communities of valuable landscapes and changing the shape of the coast. Exposures of submerged peat deposits and fossilized tree trunks have long been recognized around the shores of the Irish Sea (Reid 1913) with abundant evidence still visible on a number of Pembrokeshire beaches including Amroth, Freshwater East, Newgale, Whitesands Bay, and Abermawr. Radiocarbon dates on peat and the remains of trees visible at low-tide show that these woodlands flourished during the third millennium BC (P Bennett pers. comm.) while trees at Borth were dated by dendrochronology 4185–3981 BC (Nayling 2002, 28). Winter storms in 2013–14 revealed very extensive areas of peat with tree stumps, remnants of old land surfaces, and scattered stone tools and animal remains at Newgale and many other areas.

Sea-level changes have undoubtedly caused the erosion and loss of early settlements along the coast and any consideration of the Neolithic and Bronze Age must take this into account. More significantly, these areas would have been crucial havens for boats plying the coast and venturing out into the open sea for fishing and trade. A convincing case has been made that coastal communities undertook open-sea travel well before 2000 BC when such journeys are evidenced by the remains of substantial plank-built boats from Ferriby on the Humber Estuary and the Severn Estuary (Wright et al. 2001). The Pembrokeshire coasts and estuaries invite the development of sea-faring skills, and it is a reasonable assumption that communities in Pembrokeshire developed boat-building and maritime skills at an early date. For them, the sea would have facilitated movements of people, goods, and raw materials. Navigation based on basic astronomy and observations of the heavens must have been sufficient for voyages into the open sea to form a normal part of life at least during the summer months. The main rivers were navigable to water-craft, and one or more of the three dug-out canoes from south-west Wales may well date to the period reviewed in this chapter (Fox 1926a, 150–51; Grimes 1931; McGrail 1978, catalogue numbers 13, 43, and A1).

Evidence for the vegetation of west Wales during the Neolithic and Bronze Age is visible through just a few snap-shots; much more work is needed before a

full picture can be reconstructed. The most systematic work is that undertaken by Seymour, who sampled, analysed, and dated 11m of peat deposits from a water-logged valley between Pwllgwaelod and Cwm yr Eglwys on the Pembrokeshire coast north of Preseli (Seymour 1985). The sequence covered 12,000 years from the end of the last Ice Age up to the Roman period and showed intense periods of activity represented by the clearance of natural woodland in the period 4000–3600 BC and again around 2000 BC.

Just outside the county, close to the Powys–Ceredigion border, Astrid Caseldine has published pollen analyses from two sites – Craig-y-Dullfan and Banc Wernwgan – which combined with other recent work in Wales shows a pattern that may be applicable to Pembrokeshire (Caseldine 2013). The sequence shows vegetation changes taking place at Banc Wernwgan around 4040–3710 BC immediately prior to a marked decline in the level of elm present in the woodland. Such elm-declines were once taken as indicators of forest clearance associated with the establishment of farming communities in Britain but are now recognized as the result of disease: the prehistoric equivalent of the devastating Dutch-elm disease so widespread in north-west Europe in recent decades. The sequence at Banc Wernwgan also demonstrates that Bronze Age pastoral activity was well established in the area by the end of the third millennium BC with a more marked human impact on the landscape by the mid second millennium BC. To the east, sampling of Llyn Llech Owain near Gorslas, Carmarthenshire, revealed evidence of woodland clearance at around 3635–3374 BC (LLO-259: 4725±50 BP), although oak, alder, and hazel continued to dominate the woodland over the following centuries (Walker et al. 2009).

Who exactly the occupants of Neolithic and Bronze Age Pembrokeshire were is also a topic that is slowly becoming clearer as the comparatively young field of molecular population genetics sheds light on the origins and admixing of recognizable populations across the world. Studies of DNA in modern populations in the British Isles suggest an essentially stable male genetic profile over the last 10,000 years or more with very little outside influence, while mtDNA and X-Chromosome variation suggests periodic influences on the maternal genetic heritage (Wilson et al. 2001; see also Capelli et al. 2003 on regional variations in paternal genetic histories). In west Wales Italo-Celtic Y-DNA predominates in modern populations (Hellenthal 2014) suggesting long-term connections along the Atlantic Seaways over the last 4000 years. In particular, genetic haplogroup R1b dominates in west Wales and, according to Oppenheimer (2010, 132 and fig. 6.2), results from an expansion of males from northern Iberia in pre-Neolithic times.

EARLY FARMERS IN PEMBROKESHIRE: 4000–3400 BC

Before 4000 BC Pembrokeshire was populated by small-scale communities living in a wooded landscape that was rich in the necessities of life. Fish and shell fish could have been readily obtainable from the rivers and sea. Deer, pigs, and massive cattle known as aurochs roamed the woods, and all around them would have been a plentiful supply of edible nuts, fruit, roots, and seeds. No houses are yet known

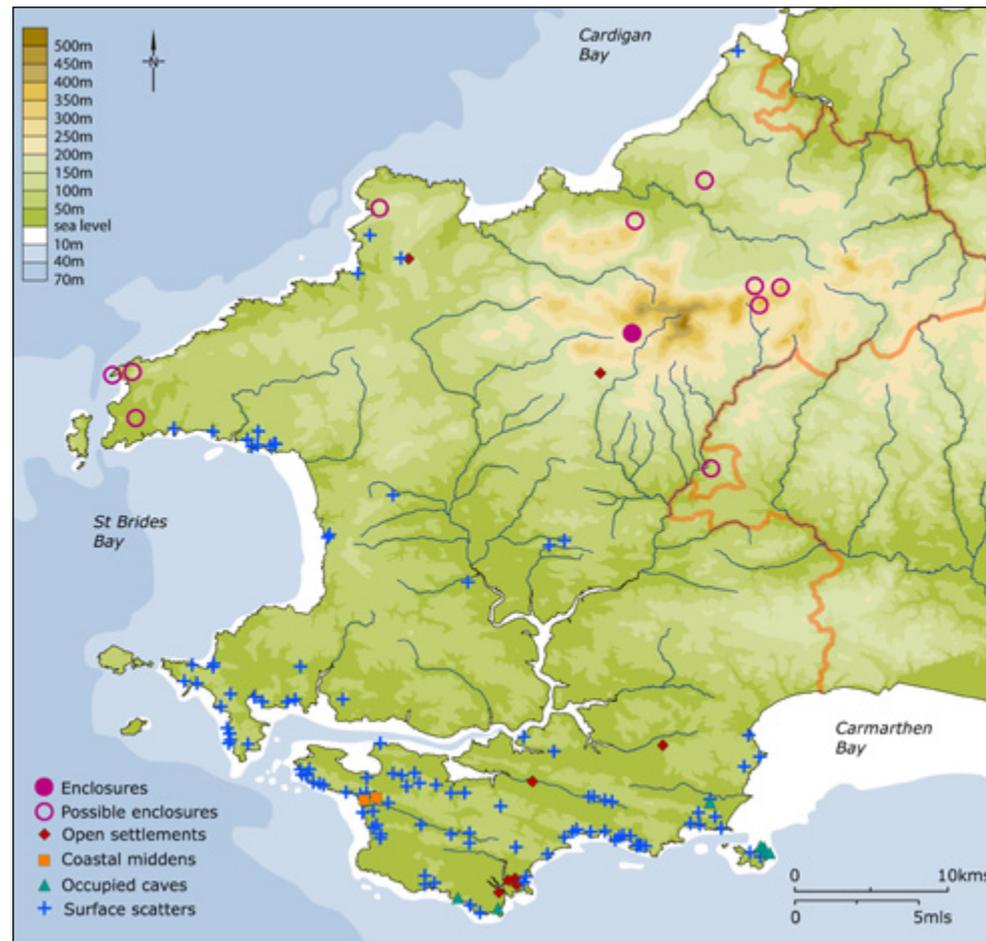


Figure 2.5. Distribution of fourth millennium BC open settlements, enclosures, possible enclosures, surface scatters, coastal middens, and occupied caves.
[Source Dyfed Historic Environment Record].

from this period, but signs of an organised society, well-connected to contemporary groups elsewhere in Britain and beyond, can be glimpsed. Shale beads made at or near Nab Head overlooking St Bride's Bay find their way over most of south Wales (David 2007). Quarries for the exploitation of metamorphosed mudstone in the sixth and fifth millennia BC have been found at Carn Menyn in Preseli (Darvill and Wainwright 2014). And there are hints that some of the timber posts and standing stones in the area may have been set up as simple monuments before 4000 BC. Certainly, selected places in the landscape appear to have been regularly visited over many millennia – they often referred to as “persistent places” – and it is notable how many monuments of the fourth and third millennia BC have yielded microliths and other worked flint indicative of earlier activity at the site.

It is widely recognized that in the centuries around 4000 BC a series of changes was set in train that fundamentally reshaped the lifestyle, economy, beliefs, identity and external relationships of those living in Britain, eventually leading to the establishment of fully-fledged farming communities. Archaeologically, these changes are represented by new kinds of material culture, including pottery and finely made stone and flint axes; the construction of stone and timber monuments as burial places and ceremonial centres; experiments in small-scale animal husbandry and crop cultivation; local modifications to the fabric of the landscape; and the presence of items and ideas traded with people elsewhere in Britain and the coastlands of the Western Seaways. Over the following two thousand years these pioneer farming groups indelibly carved their identity onto the land.

Considerable debate surrounds the mechanism and processes by which farming developed in Britain (Thomas 2013). The two competing explanations are migrations of pioneer communities from the continental mainland, and the acculturation of indigenous people through contact and trade. Neither explanation fits the available evidence from Pembrokeshire especially well, perhaps because of its maritime position and the long involvement of people living here with fishing (Clark 1976). Both processes may have played a part: slow acculturation amongst existing populations through increased contact with people living to the south and south-west in western France and Iberia coupled with some small-scale population movements prompted by alliance structures and marriage patterns is better supported by available evidence. And rather than focusing only on issues such as subsistence practices, Ian Hodder directs attention to the cognitive aspects of change, especially the adoption of world-views that encouraged people to manipulate nature and establish new relationships with the world around through alternative belief systems and new cosmologies (Hodder 1990). It

is an important consideration, and Colin Renfrew adds yet another dimension by associating the spread of farming across Europe with the expansion of proto-Indo-European languages from a homeland in Anatolia and the Middle East (Renfrew 1987, 68; 1996); a proposition that finds support in recent applications of Bayesian modelling to phylogenetics (Heggarty 2014). The Celtic language family that, through Brythonic, ultimately spawned Welsh, emerged fairly early in the regional development of proto-Indo-European languages and while relatively restricted in its occurrence in historic times was spoken over much of central and north-west Europe in the period covered by this chapter (Renfrew 1987, 68 and 225–33).

Farming and subsistence

Despite the fact that many sites of the fourth millennium BC across Britain have yielded animal bone assemblages, carbonized seeds, plant remains, traces of fields and ploughing, and equipment such as querns and sickles, very little evidence for the basic farming practices and subsistence strategies of the period have been found in Pembrokeshire. It can reasonably be assumed, however, that traditions seen elsewhere across western Britain and Ireland would have been represented (see Darvill 2010, 47–130 and Burrow 2003, 27–29 for general overviews). Emmer wheat was the main crop grown at Gwernvale, Powys, around 3980–3660 BC (Britnell 1984). Domestic animals represented at Coygan Camp near Laugharne, Carmarthenshire, included sheep and cattle whose remains were found in a pit dated to 3980–3630 BC (NPL-132: 5120±95 BP) alongside sherds of heavy-rimmed plain bowl pottery, struck flints, and charred hazelnut shells (Whittle et al. 2011, 534; Wainwright 1967). Whether marine resources contributed much to the diet of people in the fourth millennium BC has been a matter of considerable debate with evidence from south-west Wales being used to support the suggestion that early farming communities rejected earlier traditions and avoided eating fish (Richards and Schulting 2006).

Settlements and enclosures

Secure evidence of settlements dating to the fourth millennium BC is relatively rare in Britain as such sites leave little by way of surface evidence and are hard to identify. Most of those known are found by chance during the investigation of later sites and

monuments, and, in recent decades, through discoveries made during development-prompted recording and investigation. Several kinds of settlement can be recognized: open sites, walled enclosures, causewayed enclosures, and occupied caves, although it should not be assumed that occupation, whether temporary or permanent, was the only activity represented at these. Figure 2.5 shows the distribution of certain and probable recorded settlement sites and enclosures in Pembrokeshire.

Open settlements

One of the most extensive open settlements came to light at Rhos-y-clegyrn, Pencaer, during the investigation in 1962–68 of a simple standing stone (Lewis 1966; 1974). In fact the standing stone proved to be the remains of a stone pair (see below) that sealed a well-defined old ground surface within which were the remains of at least seven structures. All probably had turf or cob walls. Details of the structures, best interpreted as seasonal dwellings built and used by transhumant communities, may be summarized as follows:

Structure 1: roughly circular, overlain by structure 3, associated with hollows and postholes. A pebble rubber and a flint pebble with flakes removed were found inside.

Structure 2: roughly circular with timber uprights and a stony floor.

Structure 3: rectangular in plan internally with a rounded exterior. Well preserved walling, postholes and an intact floor with flint flakes and a scraper.

Structure 4: roughly circular with a hard floor and a possible entrance.

Structure 5: rectangular in plan, 2m wide with walls in shallow foundation trenches. The floor had been repaired with stones and clay. A concentration of microliths was found in the walling material, probably residual material introduced with turf dug from over an earlier Mesolithic settlement; no microliths were found on the floor.

Structure 6: well-preserved floor and walling.

Structure 7: oval in plan with associated flint and rhyolite flakes.

Not all the structures were contemporary – Structure 3, for example, was built on top of Structure 1 – and direct dating is problematic as there was little by way of cultural material. The stratigraphy of the site clearly indicates that the settlement is earlier than the stone pair, and the well-developed soil between the two occupations suggests that the huts are earlier by a considerable margin. It is a site that deserves further investigation, not least in the light of recent discoveries across the English Channel at Lillemer, France, where substantial Neolithic structures built of mud brick have been identified (Laporte et al. 2015).

In the south of the county some kind of open settlement was represented at Site A on Stackpole Warren where portions of four pottery vessels, worked flint including a leaf-shaped arrowhead, and a flake from a greenstone axe were found scattered through the buried soil (Benson et al. 1990, 185).

More recently, two open settlements have come to light through archaeological recording of construction works. Excavations in advance of the A477 Sageston-Redberth Bypass in 2001 revealed extensive evidence of Neolithic activity that included part of a roundhouse, two wind-break like structures, and domestic hearths (Page 2002). Seven radiocarbon dates obtained from charcoal samples suggest two phases of activity, one in the late fourth millennium BC and a second in the early second millennium BC (Whittle et al. 2011, 538–599). The early dates are fairly consistent and relate to the fill of a pit 3640–3130 BC (Wk-10153: 4656±67 BP); a spread of burnt material 3500–3020 BC (Wk-10156: 4553±62 BP); the fill of a posthole, one of several in a row, 3950–3640 BC (Wk-10158: 4965±57 BP), and the fill of a posthole forming one of a pair 3700–3370 BC (Wk-10159: 4791±57 BP). Disappointingly, there was a complete absence of material culture to flesh out details of how the site was used.

The second seemingly open settlement was discovered by chance at Tufton, Parc-y-Wern, during a watching brief in advance of the construction of a new slurry pit. This work revealed a shallow pit filled with burnt quartz and charcoal that gave a radiocarbon date of 3640–3520 BC (Hall and Sambrook 2013, 163).

Surface scatters of flint artefacts and flint and stone working waste may indicate the presence of settlement sites even when more concrete traces are absent. Altogether, more than a hundred such sites have been recorded in Pembrokeshire, nearly half of them before the First World War (Cantrill 1915). Most can be dated by the presence of distinctive tools and weapons such as leaf-shaped arrowheads, scrapers, and broken axes. As Figure 2.5 shows that most of the recorded examples lie in the southern and western parts of the county where they are generally associated with good soils and access to the coast.

Coastal middens result from periods of occupation on what was then the coast, although it must be remembered that some will have been lost through erosion and marine inundation (Figure 2.5). At Bosherton, an extensive shell midden associated with occupation debris that included stone and flint tools represents a good example of such a site (RCAHMW 1925, sites 107 and 110). Tenby Museum has a fine collection of material that includes a leaf-shaped arrowhead from Giltar Point, Tenby. Investigations prompted by storm damage at this site were undertaken in the late nineteenth century by Edward Laws and in 1927 and 1929 by Arthur Leach. As well as spreads of burnt stone and numerous struck flints and hammerstones, both found shells representing periwinkles, mussel, limpets, whelk, cockle and oyster (Leach 1932). Had the deposits been sieved it is likely that fishbones would have been recovered as well, but even the evidence of crustacea shells stands in direct opposition to the idea noted above that Neolithic people avoided seafood much as Milner and others have suggested and tried to reconcile (Milner et al. 2004). At least some of the surface scatters around Solva, Whitchurch, belong to the earlier Neolithic and also relate to coastal occupation (Grimes 1932). It is unfortunate that none of these coastal sites have been investigated in recent decades to modern standards.

Enclosures

A scatter of hilltop enclosures bounded by stone walls constructed in a distinctive way that involved joining natural outcrops are known right across western Britain from Cornwall to Cumbria (Oswald et al. 2001). Notably excavations at two sites in Cornwall – Carn Brea and Helman Tor – revealed extensive evidence for occupation during the earlier fourth millennium (Mercer 1981; 1986, 50–4). Although no certain examples of such monuments are known in Pembrokeshire there are at least nearly a dozen candidates that deserve further investigation (Figure 2.5).

The best known is at Clegyr Boia, a prominent flat-topped carn near St Davids (Figure 2.6 A). The site has been investigated on at least two occasions, in 1902 (Baring-Gould 1903) and again in 1943 (Williams 1953). In its present form the stone wall running around the edge of the hilltop is probably of later prehistoric date, a view confirmed by two radiocarbon determinations: 760–380 BC (BM-1109: 2370±29 BP) from the interior and 350 BC – 400 AD (BM-1110: 1950±116 BP) from the entrance passage (Burleigh and Hewson



1979). However, it is possible, although by no means certain, that this occupation involved the refurbishment of an earlier enclosure (Vyner 2001). What is clear is that Neolithic occupation, enclosed or not, spread over the central part of the hilltop, with evidence for two timber-framed houses, a fire pit, and a midden. Houses are relatively rare finds in Britain and having two together is unusual (Darvill 1996a, 85 and 108). Both were sub-rectangular in plan: House 1 was 6.7m by 2.1m, and House 2, partly sealed below the wall on the north-west side of the hill was 4.6m by 3m. A good quantity of Neolithic pottery was found, the largest such assemblage from Wales. Most of it represents carinated bowls that on stylistic grounds belong to the first half of the fourth millennium BC and shows strong similarities with contemporary material in southern Ireland (Peterson 2003, 124). The site has also produced flint flakes, flint tools including scrapers, and the butt of a polished stone axe of petrological Group VIII sourced to south-west Wales.

Another possible walled enclosure of the fourth millennium BC, more convincing than Clegyr Boia, is on Carn Ingli overlooking Newport Bay (Figure 2.6 B). Never excavated, little is known about it, although the ruinous ramparts appear to join natural outcrops and enclose an area of about 4ha that embraces two adjacent carns. The rampart is pierced by twelve openings in a manner fairly typical of the walled enclosures in western Britain (Driver 2007, 122–124). Traces of circular house foundations lie within the walled area, but again further work is needed to determine the age and character of the site.

Other possible early walled enclosure sites in Pembrokeshire include the inland forts at Foel Drigarn, Garn Fawr, and Carn Alw, as well as coastal sites at Clawdd y Milwyr and Castell Coch (Vyner 2001, 85). In all cases these sites were occupied or re-occupied in later prehistoric times and only excavation will determine whether the surface traces suggestive of earlier phases do indeed date back into the fourth millennium BC.

Causewayed enclosures, also known as causewayed camps or interrupted ditch systems, are large earthwork enclosures built in the centuries after 3700 BC (Whittle et al. 2011). Most are defined by low banks flanking ditches that were dug as a series of elongated pits separated by narrow causeways: hence the term causewayed enclosures. Over 100 examples are known in Britain (Oswald

Figure 2.6.-Walled enclosures from the air. A. Clegyr Boia, looking south-west. B. Carn Ingli, looking north.
 [© Crown copyright: RCAHMW. A: D12006-0584. B: 905521-12]



Figure 2.7. Aerial view of the causewayed enclosure at Banc Du, New Inn, looking east with the landscape under a light cover of snow on 20 January 2004. [© Crown copyright: RCAHMW. D12006_1319]

et al. 2001) and similar enclosures are known on the continent in France, the Rhineland, and southern Scandinavia (Klassen 2014). Much debate has surrounded their interpretation (Oswald et al. 2001, 120–131) although on balance they are probably best seen as settlements, either temporary or permanent, which also acted as meeting places and exchange centres.

In Wales, aerial photography has been the principal method whereby, over the past 20 years, six or seven confirmed and possible causewayed enclosures have been discovered in a region where previously the monument type was unknown (Driver 2009); two lie in Pembrokeshire (Figure 2.5). Of these, the first to be confirmed and dated was Banc Du in north Pembrokeshire investigated as part of the SPACES project.

Banc Du lies north of the New Inn crossroads. It is a prominent flat-topped south-facing promontory facing Cerrig Lladron in the western part of the Preseli uplands at about 334m OD (Figure 2.7). There is a cragline on the south-east side and steep slopes to the south and west sides. It overlooks the source of the Afon Syfynwy to the south-east and affords extensive views to the south and

west. The site was discovered by Chris Musson during aerial reconnaissance for the RCAHMW in 1990. Further photography by Toby Driver of RCAHMW in 2002 prompted surface checking which revealed the presence of earthworks. It appears to have been built against the cragline to the east. There is an inner earthwork, defining an area *c.*200m by 150m with stretches of visible bank and external ditch, both of which have visible causeways (Darvill et al. 2003). On the south side, the line of earthworks is doubled. The outer earthwork defines an overall area some 300m by 230m. In 2012 a high resolution geophysical survey by a team from the Deutsches Archäologisches Institut in Berlin revealed a third ditch circuit with a diameter of about 45m around the highest part of the hill top (Darvill et al. 2012a). Such three-circuit enclosures are rare in Britain and this is the only example known to date in Wales (Figure 2.8). A single narrow trench was cut across the north side of the inner circuit in 2005 (Darvill et al. 2005, 22–3; 2007). It revealed a low earth and stone bank, some 4m wide. This had a large slate slab at its inner edge, a large stone at its outer face, and two substantial postholes some 2m back from the outer face. Directly outside this

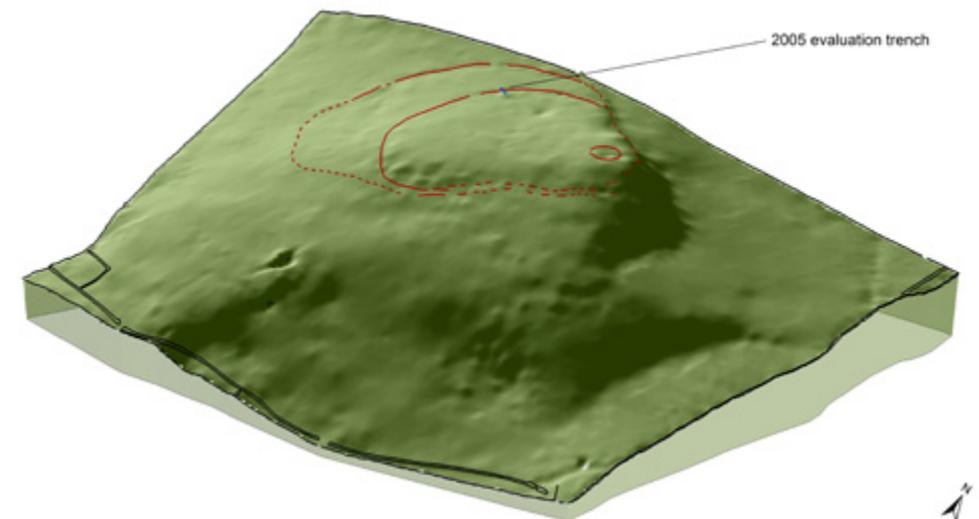


Figure 2.8. Terrain model of Banc Du, New Inn, showing the lines of the main ditches and the position of the 2005 excavation. [Plot created by Vanessa Constant, SPACES. Copyright reserved].



*Figure 2.9. Aerial view of the possible causewayed enclosure at Dryslwyn, looking north. The ditches are showing as cropmarks.
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timber-framed bank was a large U-profile ditch 2.5m wide and 1m deep. This had a series of stony primary fills and had been recut on at least one occasion. Some of the fills were rich in charred plant material, but no pottery or stone tools were recovered. The chronology of the site, suggested by statistically modelling a series of radiocarbon dates, shows that the ditch was dug in 3610–3515 BC and recut in 3105–2915 BC. The sequence of fills in the recut continued until about 2860–2490 BC (Whittle et al. 2011, 526–7).

A second possible causewayed enclosure in Pembrokeshire was tentatively identified through aerial photography north-east of Dryslwyn in the Nevern valley (Driver 2014, 163. Figure 2.9). Elsewhere in Wales a double ditched causewayed enclosure at Womaston in Powys has been radiocarbon dated to the period 3600–3400 BC (Jones 2009). The sparse cultural material includes some sherds of early Neolithic pottery. Other possible and certain causewayed

enclosures have been identified in south-east Wales at Norton, Corntown, and Flemingston, Glamorgan (Burrow et al. 2001; Driver 2009), and Caerau Hillfort, Cardiff (Pitts 2014; Davis et al. 2015). No doubt more will be found through aerial photography and ground survey in due course.

Cave occupation

At a quite different scale, a few of the caves in the limestone cliffs in the south of the county provided shelter during the Neolithic period (Figure 2.5). Ogof Govan is now only accessible by a rock climb, but Neolithic pottery, worked flints, and animal bones were found associated with a hearth near the entrance (Davies et al. 1969, 13–14). Similarly Ogof Morfran is only accessible by ladder down a sheer sea-facing cliff 16m above the modern high water mark. An excavation here yielded early Neolithic pottery bowls in a hearth. In prehistoric times, before erosion caused by rising sea level, the cave would have been accessible from natural talus slopes below the cliff (Davies 1975, 38). Finally, at Nanna's Cave on Caldey Island fragments of early Neolithic pottery were found on a platform outside the cave in a mixed deposit that also included Roman and later material (Nederveelde 1977, 24). Like the structures at Rhos-y-clegyrn, the use of these caves is probably best seen in the context of seasonal or transhumance settlement systems. More permanent features of the contemporary landscape seem to have been the megalithic monuments.

Megalithic tombs

Early farming groups across much of Atlantic north-west Europe built impressive monuments of earth and stone to house, celebrate, and memorialize their dead. Different types were built in different areas at different times. Over the last century or more a great deal of time and effort has been devoted to figuring out the sequence of monument types and the connections that they represent, and work on the predominantly large-stone monuments – literally “mega-liths” – of west Wales has contributed significantly to these wider discussions (Grimes 1936; Daniel 1950; Darvill 1983; Lynch 1972a; 1976; 2011; Burrow 2006). The picture that emerges is one of regional diversity in which distinctive local types of monument are interspersed with more widespread

classes representing much broader cultural traditions. Recent excavations suggest that the use of individual monuments was often fairly short-lived, rarely more than a century or so, but that monuments were sometimes remodelled and expanded in a way that continued the idea of persistent places in the landscape and led to what have become known as “multi-phase” monuments (Corcoran 1972).

Approximately 80 megalithic tombs have been recorded to date in Pembrokeshire (Daniel 1950, 198–206; Barker 1992), a density comparable only to Anglesey and the Cotswolds. The majority lie in the northern half of the county (Cook 2006, 9–11 and fig. 1), including the iconic site of Pentre Ifan, Nevern, now in the Guardianship of Cadw and promoted as a tourist attraction. Many other megalithic tombs survive in the landscape in various states of completeness; sadly, more than 20 are known to have been destroyed since their recognition by antiquarians and travellers (Barker 1992, 50–55). In 1830, for example, a cromlech at Ffynnon Druidion near St Nicholas was destroyed by labourers who found a stone axe and adze (Laws 1888, 19). Similarly, major clearance between 1905 and 1909 at Eithbed near Maenclochog destroyed three megaliths, two stone circles, and an enclosure (Done Bushell 1911).

Despite the prominence of megalithic tombs in the Pembrokeshire landscape, antiquarian and later investigations have been surprisingly few: Coetan Arthur (Baring-Gould et al. 1899, 130); Garn Wnda (Fenton 1810, 18); and Cerrig-y-Gof, Newport (Fenton 1810, 554–5). By contrast, six megalithic tombs have been excavated in Pembrokeshire since 1900: Bedd yr Afanc in 1939 (Grimes 1939b, 258); Pentre Ifan in 1936 (Grimes 1949; 1960); Carreg Coetan Arthur in 1979–80 (Rees 2012); Carreg Samson in 1968 (Lynch 1975); Trefael Stone in 2010 (Nash 2011; 2013); and, most recently, Garne Turne in 2012–13 (Cummings and Richards 2014; 2015).

The choice of siting for megalithic tombs must have been an important decision influenced by a number of factors including cosmology and personal attachments. Sitings close to springs, streams, and the heads of river systems were very popular. The River Cleddau, for example, is a major waterway in Pembrokeshire and its eastern arm rises from a spring in eastern Preseli below Foel Drigarn. Mountain, a now-ruinous megalithic tomb, stands above the spring with traces of a mound and several extant uprights each 2m–3m long; it must have been a fine monument in its day, and its position carefully chosen (Lynch 1972a, 81–2, fig. 9). Cummings and Whittle (2004) have attempted to devise methods of recording views from the tombs in order to form a judgement

as to why a particular siting was chosen. The results, unsurprisingly, show that Pembrokeshire tombs favoured views of the sea and of mountains. With some justification, their views have been criticised (Fleming 1999; 2005), together with those of Christopher Tilley (1994) who likewise set out to show that significant numbers of megaliths in south-west Wales were sited and designed on prominent natural features in accordance with cosmological perceptions.

Not all of the structures and monuments loosely referred to as megalithic tombs are of the same date, purpose, or cultural connections. Although many certain and possible sites scattered across the county can no longer be classified, representatives of four main classes can be recognized: dolmens, long barrows, passage graves, and gallery graves.

Dolmens

The most distinctive, and probably the earliest megalithic tombs in south-west Wales comprise structures generally known as “dolmens”, a term that simply means a raised stone (Figure 2.10). Three main kinds of dolmen representing varying degrees of complexity can be recognized (Figure 2.11), all united by an interest in lifting a massive stone out of the ground and suspending it in the air in a manner once romantically described by Jacquetta Hawkes as giving the “impression that the capstone is virtually floating above the burial chamber” (Hawkes 1973, 223; and see Whittle 2004). It is tempting to suggest an evolutionary sequence in the form of recorded dolmens from simple to developed, but given the poverty of dating evidence for these structures such a proposal would be premature.

Structurally, the simplest dolmens have become known as “propped rocks”: great slabs of rock prized out of the ground so that one end is raised and fixed in position by an upright block of stone. Examples are known around the coastlands of the Irish Sea, especially in south-west England (Darvill 2004a, 47–8; Bender et al. 2007, 83), the south Pennines and southern edge of the Yorkshire Dales (Shepherd 2013), and the Cavan Burren area of Ireland (Burns and Nolan 2016). Spread widely across the county (Figure 2.10) the most impressive example is Garn Wnda near Llanwnda (Barker 1992, 32). Here a massive slab of dolerite is supported on its downhill side by a pointed upright. The space under the slab is deep and apparently rock-cut (Figure 2.11 A). Excavations by Richard Fenton early in the nineteenth century found “quantities of red and black ashes mixed with particles of what seemed to be decomposed burnt bones and small fragments of very crude pottery, which I found in the hollow below.” (Fenton 1810, 18).

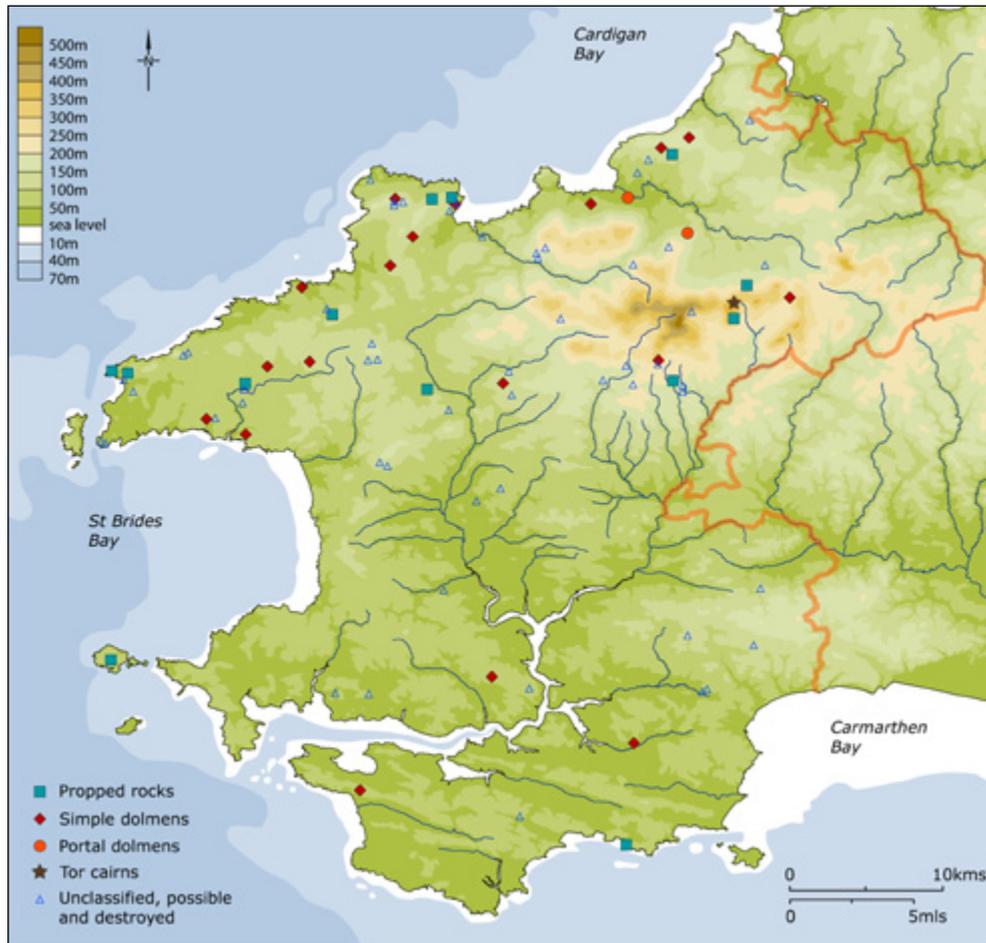


Figure 2.10. Distribution of recorded dolmens in Pembrokeshire. Propped rocks, simple dolmens, and portal dolmens. [Source: Dyfed Historic Environment Record].

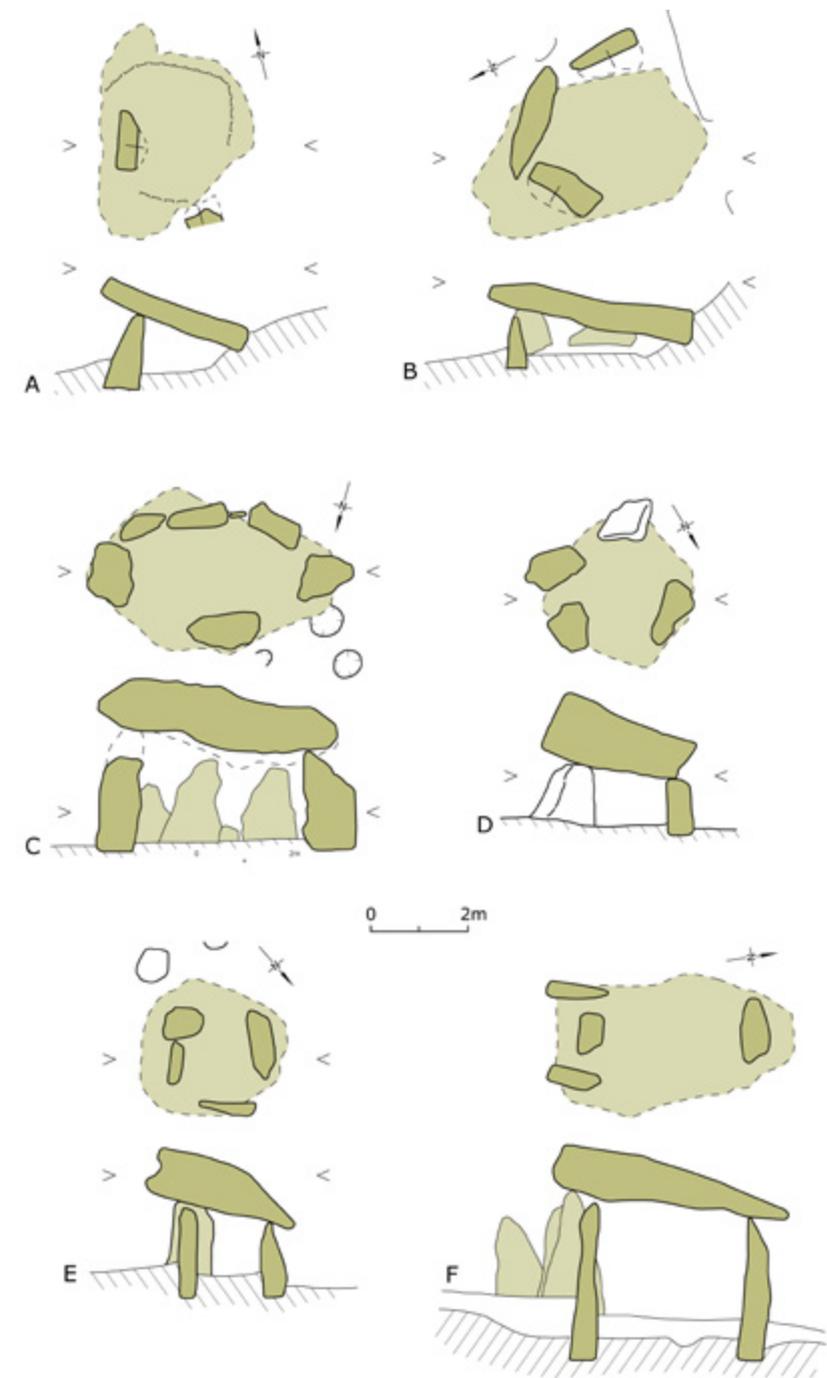


Figure 2.11. Dolmens in Pembrokeshire. Propped Stones: A. Garn Wnda, Llanwnda; B. Kings Quoit, Manorbier; C. Carreg Samson, Mathry. Simple dolmens: D. Llech y Dribedd, Nevern. Portal domens: E. Cerreg Coetan Arthur, Newport; F. Pentre Ifan, Nevern. [After: Barker 1992: figs. 35, 46, 39, 19, 22, 25 and 46]

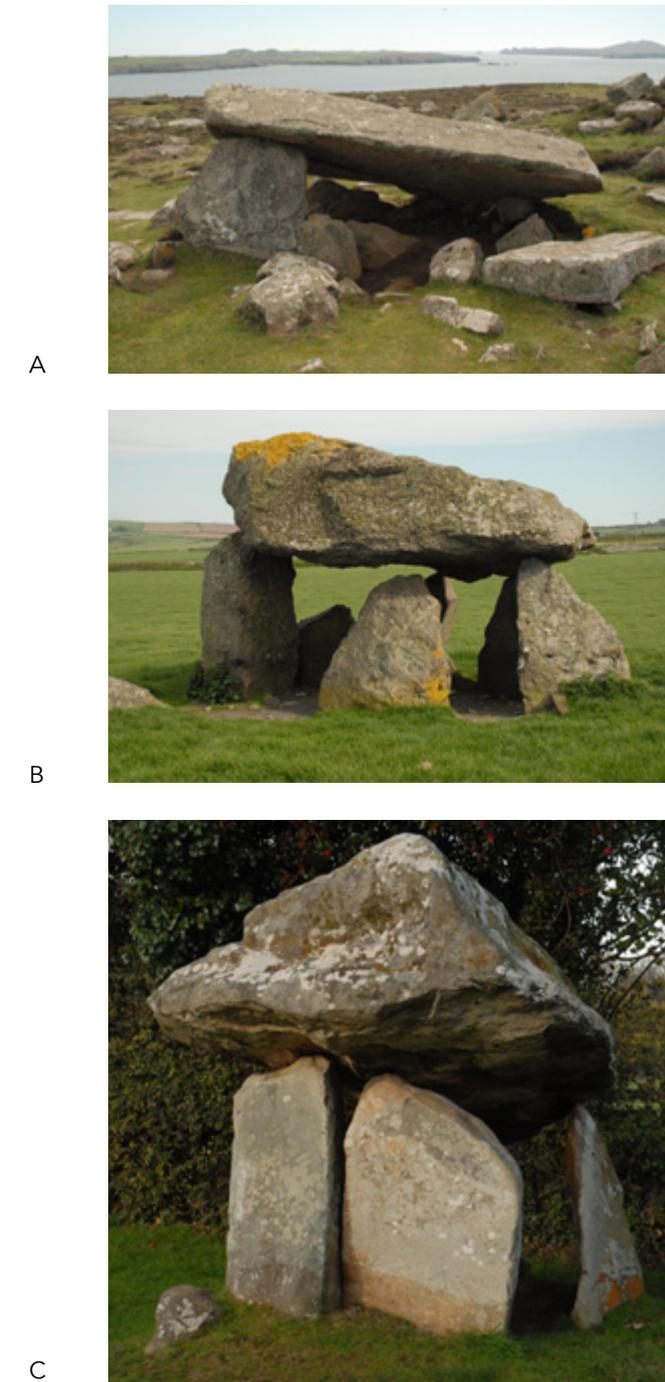
Coetan Arthur, St Davids, may also be considered a propped rock (Figure 2.12 A). It lies in an impressive setting on the cliffs of St David's Head and is visible from some distance away both from land and sea. The stone 3.6m by 2.4m is supported on one side by an upright about 1.5m high with several other slabs that perhaps once edged the central slab resting on the ground around about. It was explored in 1898 but the report states that nothing was found (Baring-Gould et al. 1899, 130). Early suggestions of a surrounding cairn, traces of a façade, and a passage to the west (Daniel 1950, 202) are not supported by recent fieldwork (Barker 1992, 36).

On the south coast, a similar monument is represented at King's Quoit, Manorbier, the great pointed capstone of Old Red Sandstone measuring some 5.1m by 2.6m, raised at its north end and supported by two or three blocks (Barker 1992, 38–9. Figure 2.11 B). It lies on a ledge near the end of a headland only 5m from the edge of a cliff with the sea below facing inland across a small sheltered bay. A concern with the movements of the bright star Vega and the setting and rising of the circumpolar star Deneb in the skyscape above the horizon at the back of Manorbier Bay has been suggested as one possible explanation for the siting of this unusual monument (Pritchard 2015).

Recent work on Skomer Island has identified a possible propped rock in a prominent skyline position on the north-eastern side of the island, the large stone slab measuring 2.1m by 1.9m associated with a pair of orthostats (Barker et al. 2015). Other monuments in the propped rock tradition have been noted in north Pembrokeshire, for example at Carn Sian on the Preseli ridge (Darvill et al. 2004, fig. 8). The massive block of rhyolite on Carn Alw propped on stumpy blocks and surrounded by a low bank may also belong to this tradition (Darvill 2011, 135 and fig. 2; Mytum and Webster 1989).

All these propped rocks seem to embrace the idea of emphasizing a natural rock or boulder or outcrop within the landscape. It is a theme also expressed in what must be regarded as a “tor cairn” at Carn Bica towards the eastern end of the Preseli ridge (Figure 2.10). Here natural spreads of clitter and scree seem to have been augmented and modified to create a skirt of stone around the dominant natural carn at its centre. Such structures have been noted on Bodmin Moor, Cornwall, sometimes with a visible outer kerb (Johnson and Rose 1994, 35) but this is first example to be identified in south-west Wales.

Figure 2.12. Dolmens in the landscape. A Coetan Arthur, B Carreg Sampson, Mathry; C Carreg Coetan Arthur, St Davids; Newport.
[Photographs by Timothy Darvill. Copyright reserved].



Slightly more elaborate are the “simple dolmens”, essentially boulders or glacial erratics fully lifted out of the ground and supported on orthostats. In some cases the raised stones have been shaped through flaking and motifs drawn from the repertoire of cup-and-ring style rock-art, usually cup-marks, have been recognised on the top surface of some simple dolmens. Examples are again found in the coastlands surrounding the Irish Sea, including south-eastern Wales (Darvill 2004a, 48) and Pembrokeshire (Figure 2.10). The best known in Pembrokeshire is Carreg Samson, excavated by Frances Lynch in 1968 (Lynch 1975). It stands at the head of the creek at Abercastle with extensive views of Cardigan Bay to the north. The most distinctive feature is the great capstone which appears to have been present on the site before the monument was built (Figure 2.12 B). A large pit at least 8m long, 5m wide and 0.8m deep found under the monument probably resulted from extricating the stone from the ground; the pit appeared to have been roughly backfilled. A microlith was found in the upper fill of the pit and the six tapering uprights used to support the capstone were set in the top of the pit (Figure 2.11 C). The massive capstone weighs in the region of 25 tons and rests on three of the uprights, creating a polygonal space beneath. There was no evidence for a covering cairn; a low platform of stone rubble probably surrounded the central structure. Even so, the monument would have taken considerable effort to build and Colin Richards (2004) has calculated that between 10,000 and 15,000 worker-hours would have been needed. On the ground below the capstone were sherds from a single Neolithic bowl (Figure 2.14 A) and a few small fragments of cremated bone. The bowl has been compared by Alison Sheridan with Armorican Middle Neolithic II vessels from Brittany and Normandy and has been used to support the idea of south to north communications along the Western Seaways (Sheridan 2010, 194–5).

Somewhat larger than Carreg Samson is Garne Turne near Wolfcastle which possesses the biggest capstone known on any dolmen in Britain. It is estimated to weigh around 80 tons. Excavations by Colin Richards and Vicky Cummings as part of a project looking at dolmens on the coastlands of the Irish Sea provide clear insights into how this monument developed (Cummings and Richards 2014; 2015). As now commonly recognized, the massive capstone was dug out of the ground leaving behind a large extraction pit. The stone itself seems to have been roughly shaped, and debitage and hammerstones associated with this activity were found in association with charcoal that provided a radiocarbon dates of 3790–3660 BC (SUERC-43883) and 3760–3640 BC (SUERC-43884). Intended to be balanced on five or six uprights, the

excavators consider that the whole structure collapsed during its initial construction although no secure evidence for this has been produced and its demise might well have been somewhat later. Certainly, a stone structure appears to have been standing when a V-shaped forecourt, similar to that at Pentre Ifan discussed below, was added later. This phase of construction was dated to the mid third millennium BC by two radiocarbon dates of 2464–2210 BC and 2618–2470 BC. Another radiocarbon date of 800–547 BC in association with iron slag points to a later use of the site. During the excavation, a smaller dolmen was located near-by and partly investigated (Cummings and Richards 2014).

Other simple dolmens that can be recognized with a reasonable degree of certainty in Pembrokeshire include a range of sites in the Nevern Valley discussed by Lynch (1972a) amongst them Llech y Dribedd, Nevern (Barker 1992, 17–18. Figure 2.11 D); Trelyfaint, Nevern (Barker 1992, 18–19); and Mountain, Mynachlog-ddu (Barker 1992, 26). Others more widely scattered include Carn Wen, Llanwnda (Barker 1992, 27); Treffynnon, Llandeloy (Barker 1992, 34); St Elvies (Barker 1992, 35); the Devil’s Quoit, Angle (Barker 1992, 38); and the Hanging Stone, Burton (Barker 1992, 36–7). Mention may also be made of the rather well-preserved example at Gwal y Filiast, Llanboidy, just over the county boundary in Carmarthenshire (Barker 1992, 8–9).

More elaborate still are the so-called “portal dolmens”. These have an H-shaped setting of upright stones forming the focus or “front” of the structure, one or two further uprights behind, and a large capstone balanced on the uprights (Figure 2.11E and F). The capstones are typically set at a rather jaunty angle, highest over the portal and sloping downwards and backwards. There is no evidence that the stone settings were ever covered in a mound, although they were demonstrably surrounded by a low stone platform. Portal dolmens are found widely across Ireland (where they are known as portal tombs), in western Cornwall, on the Cotswolds, and in parts of west Wales (Darvill 2004a, 49–52; Kytmanow 2008). In Pembrokeshire they are confined to the north of the county, focused on the Nevern Valley (Figure 2.10). The best known example, and a type-site for the class as a whole, is Pentre Ifan at the head of the River Nevern with commanding extensive views over the Nevern Valley to the north-west (Figure 2.1). Descriptions and illustrations of this celebrated monument since the early seventeenth century have firmly established its status as an icon for Pembrokeshire and Welsh heritage (Hawkes 1973, 222–3).

As seen today, Pentre Ifan is dominated by its massive wedge-shaped capstone estimated to weigh more than 16 tons. It is supported on three of the

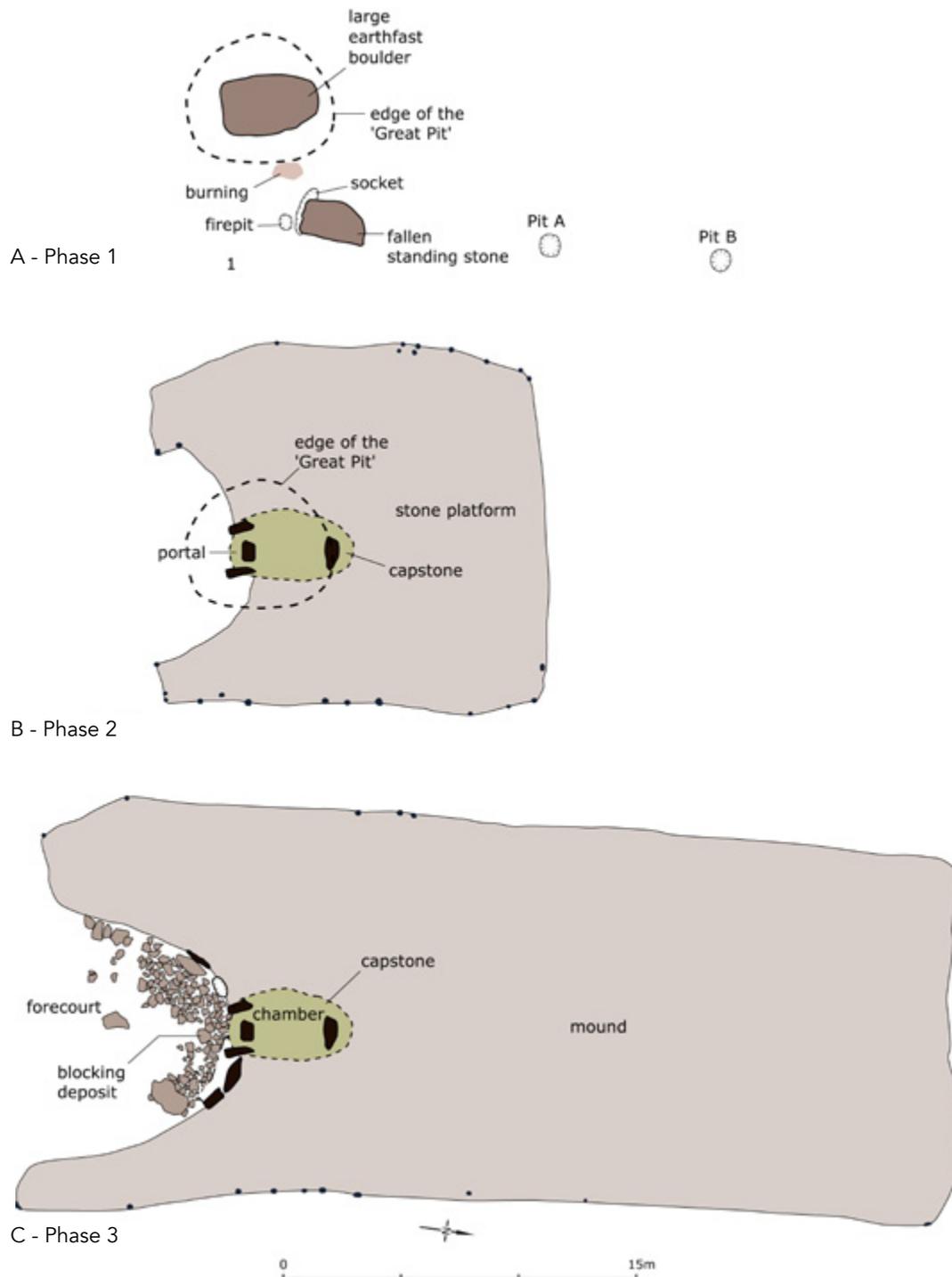


Figure 2.13. Pentre Ifan, Nevern. Site phasing.
[After Lynch 1972: figs. 3-5 with additions]

four uprights underneath, and is tilted in a way that is characteristic of portal dolmens throughout their known distribution. The front of the monument is elaborated by a curving façade of four upright stones. Excavations undertaken by W F Grimes in 1936–7 and 1958–9 (Grimes 1949; 1960) revealed something of the complexity of the monument and its long history. Further research by Frances Lynch (1972a, 70–5) suggests that the site is a multi-phase megalithic monument comprising at least three main phases (Figure 2.13).

Phase 1: Standing stone. The earliest feature on the site appears to be a standing stone formed of a hog-backed granite slab 2.9m by 1.7m set in an oval socket. To the south was a firepit containing evidence of burning and it can be assumed that the stone stood adjacent to a large part-buried stone that in later phases would become central to the structure of the monument. The standing stone had been pushed over before the portal dolmen was built as it was sealed below the cairn of this later structure. West of the Standing stone was a small area of burning: an oval hollow filled with a charcoal-rich soil containing two flint flakes. Two large pits, A and B, lay north of the standing stone. Both were nearly 1m across and had been filled with unweathered stones soon after being dug.

Phase 2: Portal dolmen. The focus of this monument was the large stone that still dominates the monument. It was probably on the site and visible to Neolithic people as a part-buried stone or “grounder” during Phase 1. A pit 6m by 5.3m more or less underneath the stone probably resulted from liberating the stone from the earth (as seen above at Carreg Coitan and widely represented at dolmens across western Britain and Ireland). The H-shaped portal setting comprises two outer dolerite uprights each 2.3m tall. It has sometimes been claimed that massive central slab carries a faint cup-mark, but there is no clear evidence of it (cf. Barker 1992, 24). The only cultural remains were a few sherds of plain Neolithic pottery (Figure 2.14 B), flint flakes, and a triangular arrowhead. Burrow (2006, 112–3) has suggested that the portal stone must have been put in place before the capstone was manoeuvred into position as this massive stone could not have been moved without dismantling the chamber. No human remains were found in the excavations and Burrow’s suggestion introduces the possibility that there never were any burials or if there were, they were introduced into the chamber by reaching through the narrow gaps in between the portal slab and side walls and have subsequently been destroyed by acidic soils.

Phase 3: Long barrow. Probably around 3600 BC the portal dolmen at Pentre Ifan was expanded to form an altogether larger monument, a long barrow, typical of the age and found very widely across north-west Europe (Darvill 2004a, 67–88). A similar pattern of activity has been recorded at Dyffryn Ardudwy, Cardiganshire, some 180km to the north (Powell 1973). At Pentre Ifan the portal setting became the central feature within a larger curved façade with the addition of two stones on either side of the original portal setting to create an impressive forecourt. The gaps between the stones of the façade were filled with dry-stone walling. Grimes’s excavations revealed slight traces of a trapezoidal cairn of boulders about 40m long by 8m wide at the southern end but it is uncertain whether this covered the dolmen in this phase. The cairn was surrounded by a slight ditch and edged by evenly spaced stone-holes along part of its south side suggesting that originally it was bounded by a frame or peristalith. At the end of the life of the monument the forecourt at the southern end of the cairn that was defined by the façade was carefully blocked with rows of tightly wedged pitched stones.

Pentre Ifan is a large monument and as such is slightly atypical. More representative is the impressive yet comparatively modest Carreg Coetan Arthur excavated by Sian Rees in 1979–80 (Rees 2012). This site lies near the coast overlooking the Nevern Estuary in north Pembrokeshire (Lynch 1972a, 69–70). The tomb comprises of four upright stones, which may have been dressed, a large capstone resting on two of them, and a paved forecourt (Figures 2.11 E and 2.12 C). The space below the capstone had been ransacked long ago but still contained sherds of Neolithic and Beaker pottery, as well as modern material and cremated bone. Careful excavation revealed three phases to the development of the site, and the radiocarbon dates from Carreg Coetan Arthur constitute the most comprehensive chronology for a portal dolmen in Britain.

Phase 1: Pre-monument activity. Across the old ground surface below the monument was a scatter of abraded sherds of Neolithic bowls, cremated bone, and charcoal-filled pits. The area had clearly been a focus of activity over several decades if not more and charcoal from one area of burning gave a radiocarbon date of 3780–3380 BC (CAR-392: 4830±80 BP). A charcoal sample from the old ground surface itself, associated with Neolithic pottery, gave a date of 3620–3020 BC (CAR-391: 4560±80 BP).

Phase 2: Construction of the portal dolmen and forecourt. As it survived, the portal setting facing to the south-east comprised the portal stone and a single flanking

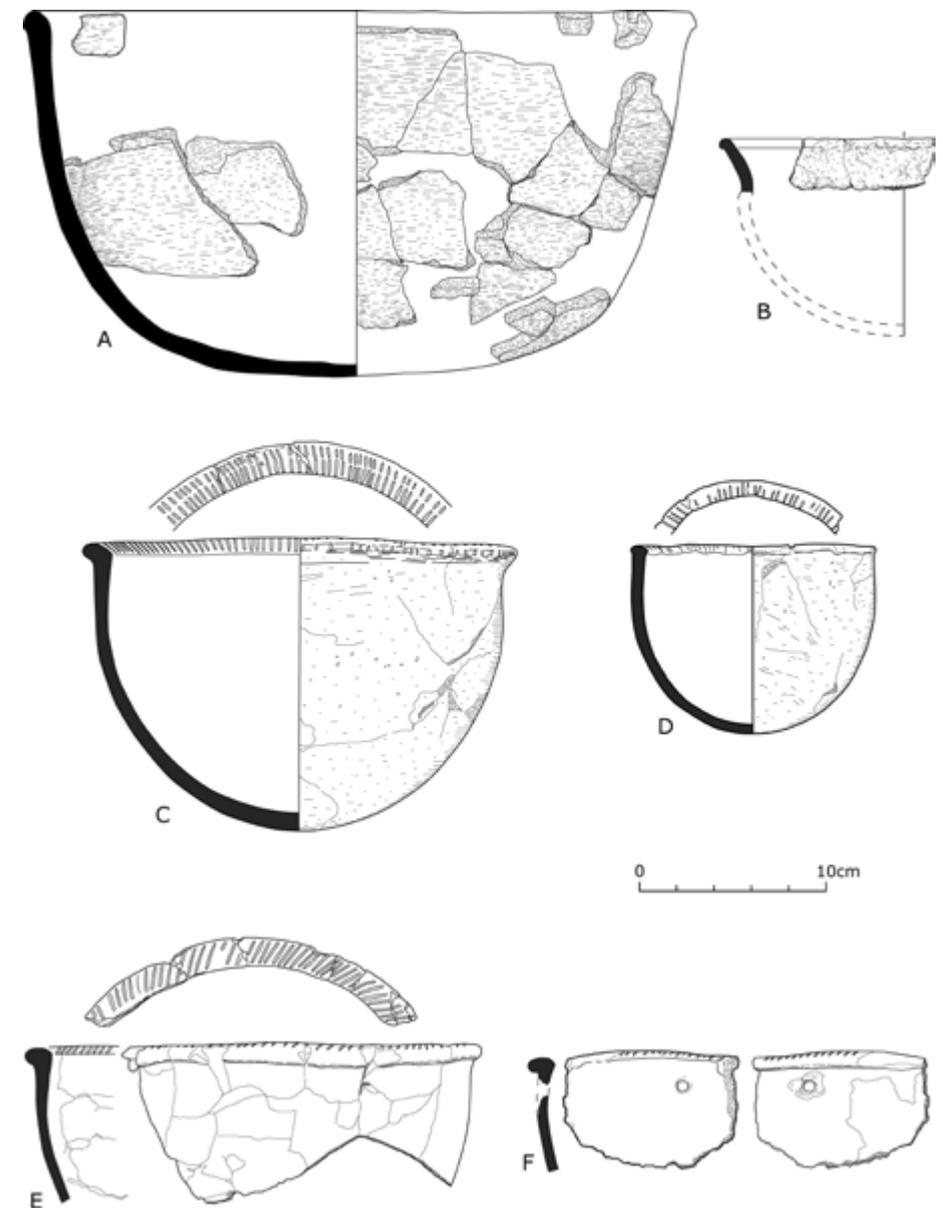


Figure 2.14. Pottery from excavated dolmens in Pembrokeshire. A. Carreg Samson; B. Pentre Ifan; C–F. Carreg Coetan Arthur. [A. after Lynch 1975: fig. 5; B. after Grimes 1948: fig. 6; C–F. Rees 2012: figs. 29, 30 and 31]

stone; the second flanking stone was missing and had probably been robbed in antiquity. The locally sourced igneous boulder used for the capstone measures 3.3m by 3m by 1.1m thick. A low cairn or platform was probably constructed around the central setting although the remnants were too disturbed to allow a detailed reconstruction. The area in front of the portal appears to have been kept clear of stonework thereby forming a shallow forecourt. A charcoal sample from the fill of a stonehole for one of the orthostats gave a radiocarbon date of 3910–3650BC (CAR-394: 4700±80 BP) while a sample of cremated bone from within the monument gave a date of 3090–2900 BC (UB-6751: 4361±36 BP).

Phase 3: Construction of a ring of stones that represented either the blocking of the forecourt or provided a frame or peristalith edging a cairn. No traces were found of the latter but on the basis of the stone ring it would have been circular and about 10m across. A charcoal sample from blocking material over the forecourt is 3360–2900 BC (CAR-393: 4470±80 BP) suggesting the original use of the monument had ceased by the end of the fourth millennium BC. Overall, this sequence compares well with what is known of other portal tombs in Wales, Cornwall, and Ireland. Moreover, a considerable quantity of Neolithic plain bowl style pottery was found (Figure 2.14 C–F) together with flint knives and scrapers suggesting considerable activity around this monument during the early fourth millennium BC.

How exactly these various kinds of dolmen worked, and what they were used for, remains problematic. Although scant remains of burials were found at Carreg Coeten Arthur and Carreg Samson these could have been inserted any time after the central stone settings were built as the spaces below the capstones remained open and accessible. It is more likely that these were not tombs in the conventional sense but rather symbolic structures that both represented aspects of the world views of the communities that built them and acted as physical markers in a landscape.

Long barrows

Long barrows traditionally comprise elongated rectangular or trapezoidal mounds of earth or stone covering timber or stone-built chambers containing multiple disarticulated burials, but these are rare in south-west Wales (Ashbee 1984; Lynch 2011. Figure 2.15) The conversion of Pentre Ifan from a classic portal dolmen

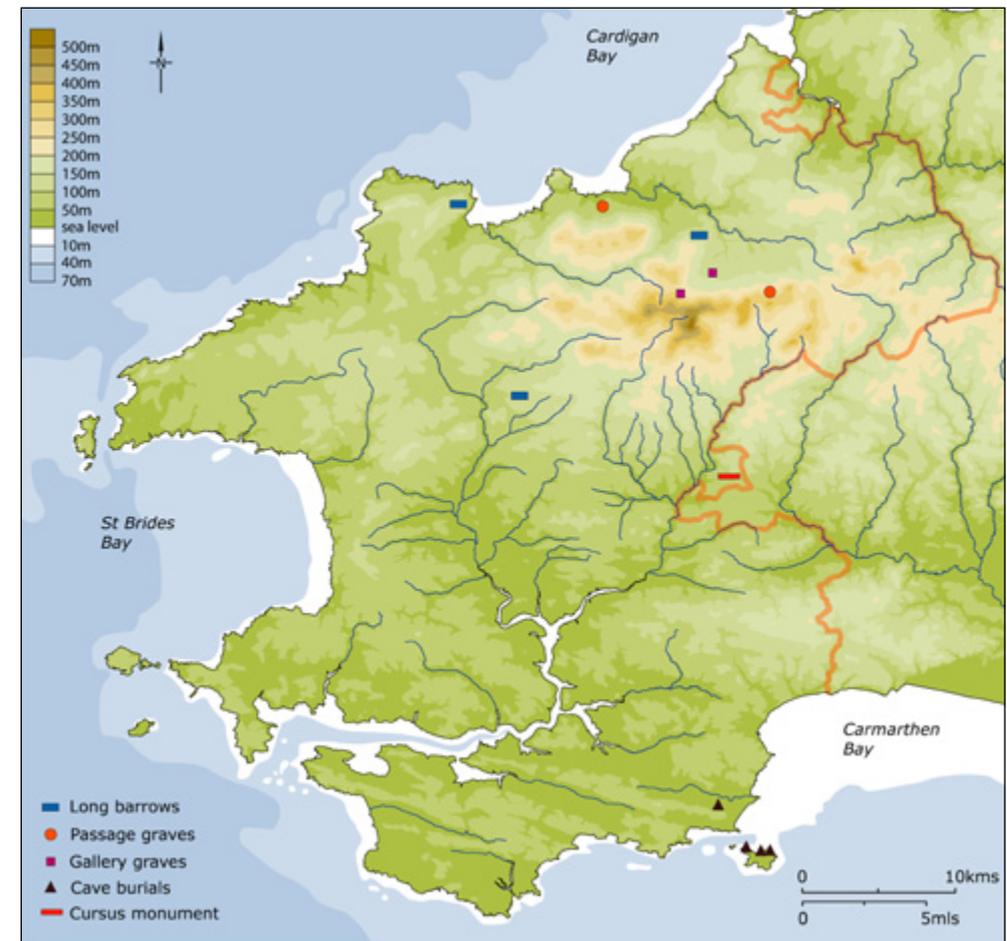


Figure 2.15. Distribution of recorded long barrows, passage graves, gallery graves, cave burials, and cursus monuments. [Source: Dyfed Historic Environment Record].

into a long barrow has been discussed above (Figure 2.13 C), and finds parallels elsewhere around the Irish Sea basin (Corcoran 1972; Powell 1973). Other long barrows in Pembrokeshire include Parc y Llyn, Ambleston, seemingly a simple terminal chamber in the western end of a mound some 15m long (Barker 1992, 31–2); Penrhiw, Llanwnda, now heavily disturbed and partly rebuilt but originally a simple terminal chamber in the eastern end of a long mound (Daniel 1950, 200; Barker 1992, 32); and perhaps also Colston, Little Newcastle (Barker 1992, 28).

Passage graves

Round mounds covering one or more central or radial chambers containing multiple burials are a widespread feature of Atlantic north-west Europe through the fourth, and early third millennia BC, starting with small simple examples and ending with massive developed passage graves such as those of the Boyne Valley in Ireland or Anglesey in north Wales (Herity 1974). It is surprising that only two possible examples have so far been recognized in Pembrokeshire, and even these are slightly anomalous (Figure 2.15).

Cerrig-y-Gof, Newport, is a complex burial site consisting of five small box-like chambers arranged radially within a round mound 17m across, each chamber possibly being accessible via a short passage from the outside of the mound (Lynch 1972a, 81; Barker 1992, 21–22). Richard Fenton dug into all of the chambers and came upon charcoal, “pieces of urns of the crudest pottery, some particles of bone and a quantity of black sea pebbles” (Fenton 1810, 554–5). Early descriptions suggest that standing stones were in the vicinity of the mound but the site is now ruinous and hard to interpret. Accepting the basic plan originally published by Barnwell (1872) and later substantiated by Grimes (1936, fig. 29) and Lynch (1972a, fig. 8), there are obvious similarities with the Mull Hill Circle on the Isle of Man across the Irish Sea to the north (Gale et al. 1997) and also with the multi-chambered passage graves of Normandy such as Fontenay-le-Marmion across the Celtic Sea to the south (Daniel 1960, 57–8). As such, the site may well form part of a wider distribution of monuments influenced by movements through the Irish Sea and beyond, as discussed extensively by Alison Sheridan (2003; 2004).

A possible simple passage grave on the north slope of the Preseli ridge near Carn Alw was surveyed as part of the SPACES project in 2003 (Darvill et al. 2003, 8 and fig. 5), although its form and date have not been verified through excavation and other interpretations of the features represented are possible.

Gallery graves

One final group of megalithic monuments comprise the gallery graves or *allées couvertes* known on the continent from Germany in the east through the Paris Basin to Brittany in the west (L’Helgouach 1965, 255–300; Schierhold 2012); they are somehow connected with the wedge tombs of Ireland (O’Brian 1999, 9–13; Jones 2007, 219–40) so examples in south-west Wales are not unexpected.

Dating to the later fourth and third millennium BC these monuments comprise elongated stone and wooden chambers with lateral or terminal entrances within a cover-mound not much bigger than the chamber. An inaccessible cell at one end of the chamber is sometimes present. Two possible examples can be identified in Pembrokeshire: Bedd yr Afanc and Banc Llwydlos (Figure 2.15).

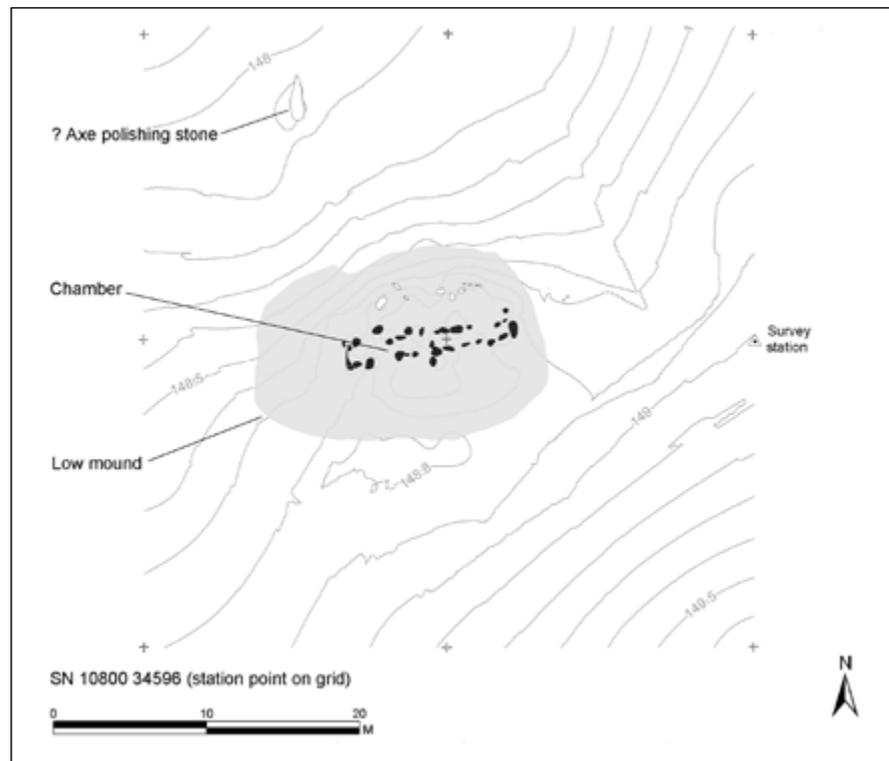
The site of Bedd yr Afanc, Meline, near Brynberian has an unusual siting on a low rocky knoll on the northern edge of Brynberian Bog which skirts the northern perimeter of the Preseli Hills (Figure 2.16 A). First recorded in the later nineteenth century, the monument was planned and provisionally interpreted by W F Grimes as a wedge-shaped grave comparable to sites in southern and eastern Ireland (Grimes 1936, 128). In the summer of 1939 Grimes excavated much of the chamber area and cut sections through the surrounding mound. This work was never fully published, although interim statements and later interviews suggest that the chamber was a long gallery-like structure, closed at the western end, with the constituent orthostats linked by dry stone walling. There were no finds of any kind (Grimes 1939b, 258; Barker 1992, 39–40).

A search of Grimes’s archive held by the RCAHMW in Aberystwyth brought to light a plan of the excavations which shows the position of the trenches in relation to the orthostats forming the chamber, and the edge of the mound. A topographic survey of the site was made in August 2003 confirming the overall rectangular form of the monument and providing additional detail about the mound and its setting (Figure 2.16 B). A possible axe polishing stone or polissoir to the north of the barrow was mapped as part of the survey. Geophysical surveys (magnetometry and resistivity) were carried out as part of the SPACES programme in 2003. This work suggested that the site could be seen as part of the passage-grave tradition with a small chamber perhaps 2.2m across at the western end of a 10m long passage (Darvill et al. 2003, 6–7). In retrospect, reinterpretation as a gallery grave seems more likely, especially in view of a second example 2.5km to the north-east. This site at Banc Llwydlos near Bwlch Gwynt is aligned roughly north to south with a chamber some 14.2m long and between 2.4m and 3.6m wide (Murphy and Wilson 2012). Both monuments are quite distinct from the portal dolmens and, unlike them, have remote upland settings.

Overall, the majority of megalithic tombs in Pembrokeshire can be identified as dolmens, although other kinds of monument are clearly present. All suggest extensive contacts around and along the Western Seaways both to north and south. Geographically, there is a concentration of megalithic tombs in the north of the county and their sitings are usually close to springs and water. The



A



B

available radiocarbon dates and associated material culture tell us that most of these megalithic tombs were being constructed in the early to middle fourth millennium BC at the same time as the settlements and enclosures discussed above. Indeed, these tombs were part of complicated and well-structured patterns of landscape organization. They may have been resting places for the dead, but they were also tombs for the living. The massive capstones on many examples betray a great interest in natural stones by these communities. Rock-art has been noted at a number of sites, always simple cup-marks (see below), the addition of which could have created quite a noisy spectacle.

Finally, attention must be drawn to the large number of Neolithic tombs and settlements where microliths of Mesolithic type have been found. This is almost certainly due to Mesolithic settlement in the county being more extensive than had previously been thought and that the microliths should be considered residual in later contexts. Nevertheless, one must keep an open mind on the matter given our increasing knowledge of sophistication in Mesolithic society and further research may well shed light on the linkages between Neolithic farmers and their Mesolithic predecessors.

Cave burials

In addition to the relatively few burials found at megalithic tombs, human remains of Neolithic date have been discovered in several caves in south Pembrokeshire (Figure 2.15). At Little Hoyle the remains of around 17 people were buried in an infilled chimney which connected the cave to the surface. Radiocarbon dates obtained from four individuals show that these interments were made between 3950 and 3100 BC (OxA-3303: 4660±80 BP; OxA-3304: 4930±80 BP; OxA-3305: 4750±75 BP; OxA-3306: 4880±90 BP). They suggest several burial episodes in a natural burial chamber (Hedges et al. 1993, 151). Human remains of the same age have also been found in Nanna's Cave and New Cave on Caldey Island. From Nanna's Cave two radiocarbon dates were obtained from human remains spanning the period 3500BC to 3030 BC (OxA-7739: 4560±45 BP; OxA-7740: 4520±45 BP). Neolithic artefacts were obtained from the cave albeit not directly associated with the burials. Human remains from

Figure 2.16. Photograph and plan of *Bedd yr Afanc, Meline*. (After Darvill et al. 2003: fig. 4).

Ogof-yr-Benlog on Caldey Island were dated to 3630–3350 BC (OxA-7743: 4660±45 BP) (Schulting 1998). Similar examples have been found in other parts of Wales suggesting the widespread use of natural caverns for communal burial and emphasizing the importance of such places to these communities.

Cursus, ceremonial enclosures, and pits

Cursus monuments are long, narrow ditched enclosures with parallel sides loosely associated with ritual and funerary activity dating to the mid fourth millennium BC. They are distributed widely across Britain but their function is unknown (Harding and Barclay 1999; Loveday 2006). One possible cursus monument has been recorded at Llandissilio on the border between Pembrokeshire and Carmarthenshire as a result of aerial photography (Gibson 1999, 139; Cook 2006, 21. Figure 2.15). The site, which is over 700m long, lies close to the monument complex at Glandy Cross which comprises the Meini Gwyr embanked stone circle, a cove, round barrows, and standing stones as well as a stone-working area concerned with the manufacture of rhyolite axes and other implements (Grimes 1939c; 1963, 141–3; David and Williams 1995; Kirk and Williams 2000).

Broadly contemporary with cursus monuments are range of other smaller enclosures and settings, of which two possible examples were recognized on the South Wales Gas Pipeline across the southern part of the county (Darvill forthcoming). At Scurtle, Wiston, a section of curvilinear ditch with steep sides and a flat base, defined an arc about 9m across the open ends. Facing towards the southwest it is rather reminiscent of a ‘cove’ (Burl 1988). The fill of the ditch included a deposit of carinated bowl pottery, charcoal, worked flints and hazelnut shells dated to 3780–3640 BC (SUERC-54698: 4925±29 BP). Rather different was the structure found at Middle Bastleford, Rosemarket, which comprised a roughly rectangular enclosure 20m by 15m defined by a series of slightly irregular ditches. Near the centre was an oval pit containing carinated bowl pottery, a substantial assemblages of worked flint, and charred plant remains including oak and hazel fuelwood, hazelnut shells, charred grain and remains of fruits from hawthorn, apple, pear and whitebeam. A hazelnut shell provided a radiocarbon date of 3900–3660 BC (SUERC-54570: 4968±30 BP) and charcoal from the same context was dated 3780–3640 BC (SUERC-54571: 4931±30 BP). Although the enclosure boundary itself is undated it conforms well with the kind of monument that Loveday refers to as a small long enclosure (2006, 60).

One of the most widespread group of monuments of the fourth millennium BC are pits and pit clusters. These comprise single pits, pairs, small groups of three or four, representing a visit to a significant place. Where pit-digging events recur at intervals it can result in the development of a significant cluster of pits which can sometimes be confused with occupation sites (Thomas 2012); in other cases the clusters are arranged as arcs, horseshoes, or circles. Ceremonial pits usually contain small quantities of material cultural sometimes carefully placed on the bottom and a side of the feature. Their placement in the landscape often reflects an interest in a natural feature such as a rock outcrop, hill, spring, or vista across a river valley or coast. Pit clusters are surprisingly rare in Pembrokeshire, although small groups were found in association with the ceremonial monuments at Middle Bastleford and Wiston during the construction of the South Wales Gas Pipeline (Darvill forthcoming). Larger clusters have been recorded just outside the county, for example at Llanilar (Briggs 1997) and Llandysul (Murphy and Evans 2007) in Ceredigion. A fine example of a single ceremonial pit was excavated at Coygan Camp, Laugharne, just across the county boundary in Carmarthenshire, adjacent to a distinctive rock outcrop (Wainwright 1967). The pit contained a block of sandstone, broken pottery, worked flints, a few fragments of bone, charcoal, and hazelnut shells that provided a date of 3980–3630 BC (NPL-132: 5120±95 BP). Work on the South Wales Gas Pipeline in Carmarthenshire also revealed three substantial pit clusters and a handful of single pits along the Towy Valley (Pannett 2012; Darvill forthcoming).

Cup-and-ring rock-art

Rock-art appears in Britain around 4000 BC, perhaps even earlier. Simple cup-marks and cup-and-ring motifs represent the oldest recognized tradition in Britain (also known as the Galician style) and panels containing these motifs appear in a variety of contexts across the northern part of the county (Figure 2.17). Decorated earthfast boulders are known at Penrhyn Byr (Darvill and Wainwright 2003a, 259); on a boulder set atop a low stone cairn or platform south of Carn Alw on the north side of the Preseli ridge (Darvill et al. 2003, 10); on a boulder on Carn Ingli Common (Darvill and Wainwright 2003a, 258); on a large slab of metamorphic rock at Caefai Bay Caravan and Camp Site near St Davids where at least six cup-marks in a circle surrounding a deeper one can be seen (Murphy 2007); and on rock outcrops in the vicinity of Garn Turne (Nash

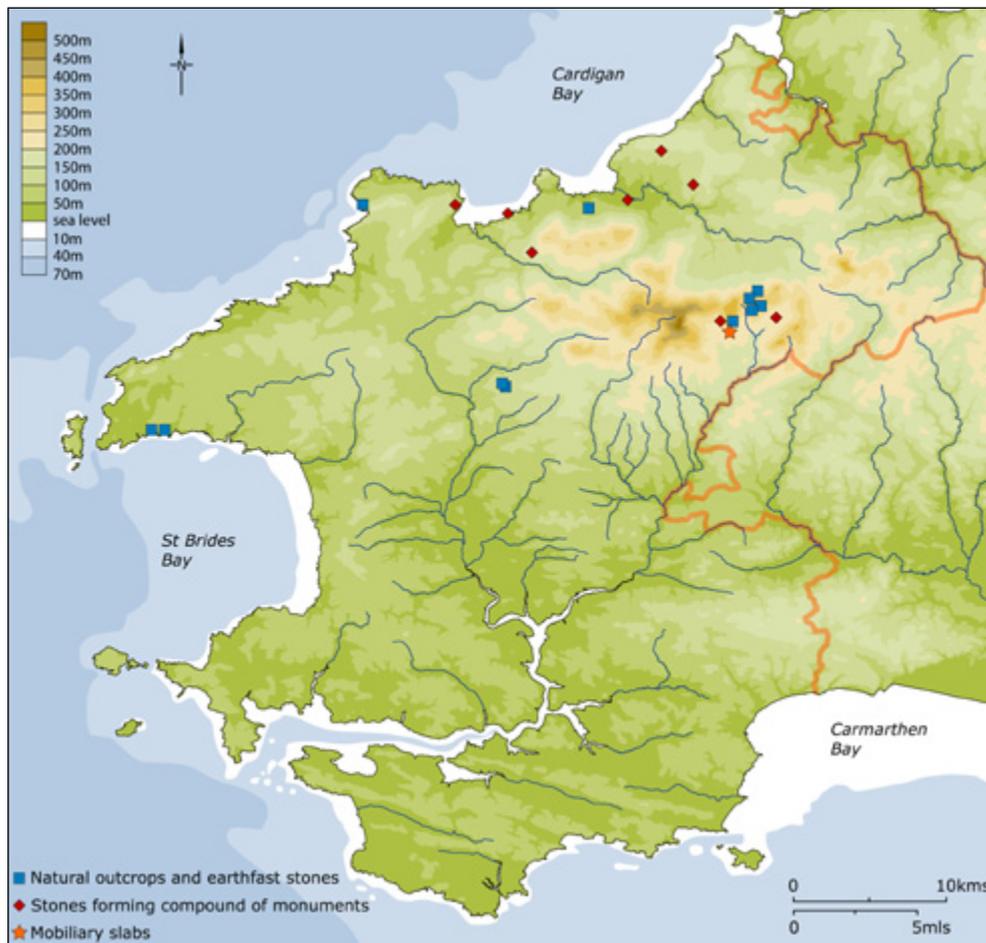


Figure 2.17. Distribution of recorded cup-and-ring style rock art in Pembrokeshire.
[Source: Dyfed Historic Environment Record].

et al. 2005, 15–16). At St Non's Well near St Davids a single cup-mark on a stone beside the spring at the heart of this holy well shows a widespread interest in water sources at this time (Bennett-Samuels and Morgan Evans 2008).

Cup-marks are also present on the capstones of megalithic tombs. The simple dolmen at Trellyffaint in the Nevern Valley carries 35 cup-marks (Barker 1992, 18–19) and there are smaller numbers at Carreg Coetan Arthur, Garne Turne, and Garn Wen (Darvill and Wainwright 2003a; Nash et al. 2005). As noted above, the cup-mark sometimes claimed on the front of Pentre Ifan cannot be

found (Barker 1992, 24). The capstone of the dolmen at Garngilfach has two rather unusual triangular-shaped motifs in the top of the capstone (Darvill and Wainwright 2003a, 258). The standing stone at Trefael discussed below is rather exceptional in having at least 75 cup-marks (Nash et al. 2011; 2013) although its origin either as an earthfast boulder, the capstone of a now-lost dolmen tomb of some kind, or both at different times remains unclear. Indeed, the wider question of whether the motifs were present on stones prior to their selection for use in building monuments, or were added after the monuments had been built, is open for debate.

Early standing stones

The evidence from Pentre Ifan discussed above shows very clearly that single standing stones start to be constructed early in the overall sequence of monument building in Pembrokeshire. That stone (Stone IX) was 2.9m by 1.7m and lay next to a fire-pit and what may be postholes (Grimes 1949, 13–14. Figure 2.13 A). Another potentially early standing stone also discussed above is the Trefael Stone in the Nevern Valley first recorded by Grimes (1930, 277) and later considered by Lynch to be the capstone from a destroyed burial chamber (1972a, 79). The stone is a piece of local dolerite and is unusual in that one face is decorated with at least 75 cup-marks. The view that the stone was originally part of a dolmen was further promoted following excavations in 2010–12 (Nash 2011; 2013), although where the original monument might be remains unclear and there is no direct evidence for such a suggestion other than the general shape of the stone and the presence of cup-marks. What the excavations showed was that the stone was set in a socket and surrounded by a low stone cairn or platform. Numerous pieces of white quartz were concentrated around the stone along with two large perforated shale beads resembling those of Mesolithic date from Nab Head overlooking St Bride's Bay. When exactly the stone was set up, and where it originally came from remain unresolved, although surveys in the area revealed the presence of several other standing stones as well as a cemetery area to the west that included a number of ring-ditches visible on geophysical surveys, a stone-lined cist, and a late Neolithic cremation associated with sherds of Grooved Ware (Nash 2013).

How many other standing stones are quite so early is far from clear, but the erection of such simple monuments is a very long-lived tradition and is discussed in further detail later in the chapter.

Pottery, flint, and stone

Flint and other kinds of fine-grained stone continued to be worked throughout the fourth millennium BC for the manufacture of tools and weapons in much the same way as in earlier times. Pottery by contrast was a Neolithic innovation and was used in Wales from about 4000 BC.

Three sites in Pembrokeshire have produced good collections of early Neolithic pottery: the settlements at Clegyr Boia and Stackpole Warren Site A, and the tomb of Carreg Coetan Arthur. At Clegyr Boia about 500 sherds were recorded, many of considerable size and in an unabraded condition. They were mainly from large carinated bowls, the fabric of which had been tempered with calcareous material, probably crushed sea shells, that when eroded leaves a corky-textured ceramic (Williams 1953; Peterson 2003, 124). At Stackpole Warren Site A the four vessels all shared a distinctive sandstone-tempered fabric from a source that possibly lay some distance from the site (Benson et al. 1990, 209). Similar bowls were recovered from Carreg Coetan Arthur where seven fabrics were represented, mainly rock-tempered wares made in the local area. Four carinated vessels and four modified carinated vessels had soft porous fabrics contained voids that, like those from Clegyr Boia, are thought to result from the erosion of calcareous material suggesting that the pots originate in an area of limestone bedrock (Rees 2012, 111–18; cf. Darvill 2004b).

Early Neolithic flint assemblages are characterised by fine retouch and flaking in common with those from the rest of Britain. In Pembrokeshire poor quality beach flint was employed to manufacture a tool kit that included leaf-shaped arrowheads, scrapers and knives. Carreg Coetan Arthur in particular produced a fine range of flint tools (Rees 2012, figs. 35–38).

In western Britain fine grained metamorphic and igneous rocks of various lithologies were exploited from surface outcrops. At Mynydd Rhiw, Gwynedd, adits were dug into hill-slopes to follow desirable seams of rock (Houlder 1961), and much the same seems to have been happening from the sixth millennium BC onwards on Carn Menyn in Preseli (Darvill and Wainwright 2014). What was being made from stone extracted from these early quarries is not yet fully known, but from the early fourth millennium BC igneous and metamorphic rock all along Europe's Atlantic seaboard was being exploited for the manufacture of stone axes of various kinds. The process involved producing roughouts at the quarry sites and then taking these away, back to settlements perhaps, for finishing and polishing.

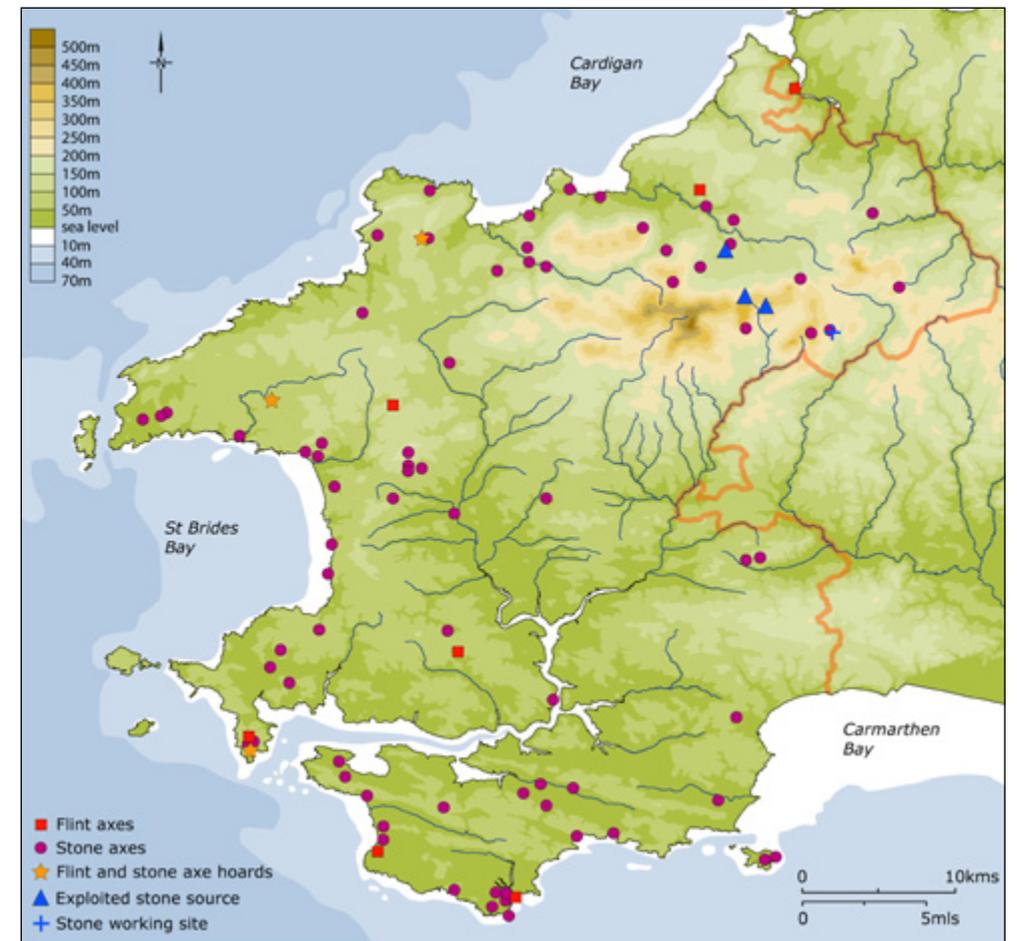


Figure 2.18. Distribution of recorded stone and flint axes, axe hoards, and known or suspected axe-production sites (with CBA Petrology Committee numbers where assigned). [Source: Dyfed Historic Environment Record].

Around 100 unperforated stone axes have been found in Pembrokeshire to date (Houlder 1988). The majority come from the south of the county and along the fringes of the Preseli ridge (Figure 2.18). About one-third of known axes can be traced to their source outcrops by examining the stone in thin section and comparing it with samples from recognized sources. Most of the axes from Pembrokeshire were made of local stone, and three main sources or “Groups” have been identified (Stone and Wallis 1951; Shotton 1972; Houlder 1988; Darvill 2011).

Group VIII: Defined in 1941 as a light-coloured, compact, fine-grained, igneous rock that in thin-section consisted of an even and finely-textured micro-crystalline mosaic of quartz and possibly feldspar with scattered, irregular non-homogeneous accumulations of leucoxene, best classified as a silicified tuff (Keiller et al. 1941, 63). The definition was based on three specimens from Keiller's excavations at Windmill Hill, Wiltshire, but by 1951 (Stone and Wallis 1951, 122–6) five further examples had been thin-sectioned (including two more from Windmill Hill) and the proposal made that the source lay amongst the volcanic material from the Llanvirn series of Lower Ordovician rocks outcropping on Ramsey Island and around Mountjoy on the adjacent mainland near St Davids. The main distribution of Group VIII axes focuses on south-west Wales (Darvill 1989, fig. 7; Burrow 2003, fig. 28) and in Pembrokeshire examples have been found at Llangolman, Whitesands Bay, Castlemartin Burrows, St Govan's Head, and Caldey Island. Houlder's (1988) listing of sampled implements from Wales itemised 66 examples in Group VIII rock, including 56 axes, while the national distribution map based on 119 find-spots in the same volume showed a wide spread of finds across Wales and southern England (Clough and Cummins 1988, 272). A few axes of this rock have been found as far afield as Hampshire, Dorset, Gloucestershire, and Wiltshire, illustrating something of the wider connections between Pembrokeshire and the downlands of central southern Britain.

At more or less the same time as the distribution of Group VIII products was becoming clear, Andrew David and George Williams identified two production sites in south-west Wales (David and Williams 1995). Both were discovered through fieldwalking and explored through test-pitting and small-scale excavation. At Glyn-y-Fran, Llanfyrnach, finds from fieldwalking included retouched flakes, seven complete or fragmentary axe roughouts, and hammerstones. Worked flint was also found. The second site at Glandy Cross, Carmarthenshire, lay west of a cluster of ring-ditches, henges, a stone circle, and standing stones best interpreted as a regional ceremonial centre of the third millennium BC (Kirk and Williams 2000). Fieldwalking brought to light more than 200 pieces of stoneworking debris, including retouched flakes, axe roughouts, and hammerstones. In both cases the rock type being worked was identified in the hand specimen as rhyolite, which thin-sections and chemical analysis matched to material previously identified as Group VIII. Both sites were believed to be the result of working either glacially deposited erratics or blocks of stone transported to sheltered locations from the parent outcrops some distance away. Chemical analysis of 12 rock samples from Glyn-y-Fran and Glandy Cross by Olwen

Williams-Thorpe at the Open University suggested that the likely source of the erratics was within or near the Preseli Hills, most probably the outcrops at Carn Alw on the north side of the Preseli ridge, but this has since been called into question and discredited (Bevins and Ixer 2013).

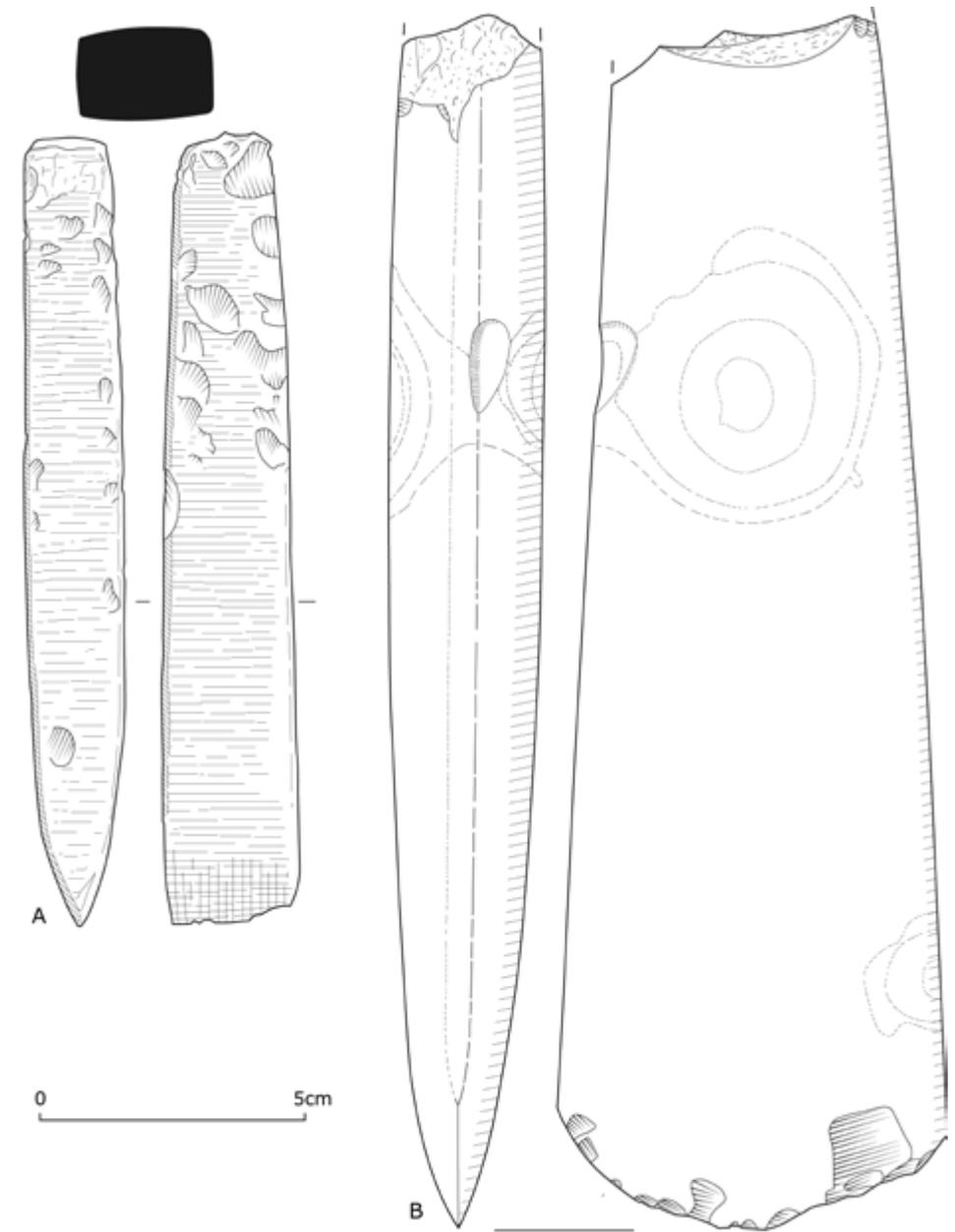
Groups XIII and XXIII: This complicated series of rock types has been the subject of much discussion since H H Thomas identified the link between outcrops on the Preseli Hills and some of the so-called "bluestones" at Stonehenge, Wiltshire (Thomas 1923; and see below). In the first report of the South-Western Group of Museums and Art Galleries Sub-committee on the petrological identification of stone axes just one of the types of stone identified by Thomas was singled out for attention and referred to as "Presely Stone": a "beautiful and distinctive rock" with white or pinkish spots composed of irregular crystals and crystal growths of oligoclas-albite feldspar generally classified as spotted dolerite, popularly referred to at the time as Preselite (Keiller et al. 1941, 64–5). As well as being used in large blocks for pillars at Stonehenge, there was also evidence that axes and shaft-hole implements were made of this same rock, the main sources of which were identified as Carn Menyn and Carrig Marchogion on the eastern end of the Preseli ridge. Reporting the discovery in 1944 of a Preselite axe-hammer found at Fifield Down, Wiltshire, J F S Stone provided an important review of other findspots of this material in Wessex (Stone 1950). In 1951, Preselite was formerly defined as Petrological Group XIII, and eight axes, a macehead, and an axe-hammer catalogued (Stone and Wallis 1951, 128–9). Two of the axes listed were from County Antrim in Ireland (Keiller 1936), although later reclassified as ungrouped dolerite and greenstone (Evens et al. 1962, 219). Ironically, recent work by the Irish Stone Axe Project has suggested that some of the porphyritic dolerite axes found in Ireland may in fact be related to Group XIII and derived from the same source, although further analysis is needed to confirm this (Cooney and Mandal 1995, 973; 1998, 175). By 1972 no less than 20 identifications of Group XIII material had been made amongst samples studied in south-west England, the majority being pieces of rock rather than recognized implements (Evens et al. 1972, 246). At about the same time Professor F W Shotton examined a number of large stone axes from north-west Pembrokeshire and in so doing defined Group XXIII as a spectrum of dolerites outcropping between St David's Head in the west and the Preseli Hills in the east. Geologically these sources ranged from graphic pyroxene granodiorite (XXIIIa) through to quartz dolerite (XXIIIb), a spread which embraced the spotted dolerite / Preselite (Group XIII) as the spotted *facies* within the

broad petrological and geographical range of Preseli dolerites, thus recognized as Group XXIII (Shotton 1972). The distribution maps published by Cummins (1979; 1980; Clough and Cummins 1988, 276 and 282) emphasized the extensive if thin scatter of petrologically identified Group XIII/XXIII products across Wales and southern and eastern England; a complete axe from Watcarrick in Eskdalemuir, Dumfriesshire, Scotland (Truckell 1953; Livens 1961, 70) remains something of an outlier. Moreover, detailed reviews of the various dolerites represented at Stonehenge and in Preseli by Richard Bevins and Rob Ixer have effectively called into question the overall integrity of axe Group XIII/XXVIII (see below).

The current position regarding the petrological study of Neolithic axes is deeply unsatisfactory. Not only are less than half of the axes in Wales unattributed to their petrological source but in north Pembrokeshire no relevant extraction sites have been identified for some of the well-recognized Grouped implements. Any carn which was of suitable igneous rock was a potential source of axe material, and extensive multi-disciplinary geological and archaeological studies are required to check both the lithologies and the evidence for use in prehistoric times. What we do know, however, is that the products of these quarries, the stone axes themselves, circulated in a complicated way that probably had a lot to do with gift exchange between communities (Darvill 1989; Bradley and Edmonds 1993).

Not only did axes produced in Pembrokeshire end up in the hands of people geographically far removed, but stone and flint axes from other parts of Britain ended up in Pembrokeshire (Figure 2.18). A Group I axe from Cornwall was found at Camrose, a Group XI axe from the Lake District was found at Hendre, Meline, and flint axes from southern or eastern England have been found at Newhouse, Bathfield, and Pentre Langwm. An unground example from Newport Beach (Pembrokeshire County Museum PM.A80.1) suggests that rough-outs as well as finished pieces were being moved about. And imported flint and stone axes were sometimes given special treatment and occasionally deposited as hoards. Five flint axes with ground blades were reported in the nineteenth century from near the destroyed tomb of Ffynnon Druidion, St Nicholas, although all have since been lost (Figgis 2001, 17).

Figure 2.19. Flint and stone axes imported into southwest Wales. A. Scandinavian axe from Brownslade Burrows, Castlemartin; B. Crudwell-Smerrick type axe from near Hayscastle. [After A: Wheeler 1929: fig. 19; B: Saville 2004: fig. 1]



Still more distant links may be represented by finds of exotic axes. An unusual brown-coloured flint chisel with side facets found at Brownslade Burrows, Castlemartin (RCAHM 1925, 66, no. 150; Wheeler 1929, 56. Figure 2.19 A) was probably imported from Scandinavia. Likewise, a beautifully crafted marbled flint axe found near Hayscastle is a long-distance import probably made from banded flint of the kind found in Denmark (Saville 2004. Figure 2.19 B). It is a good example of an increasingly well-recognized group of flint axes, the so-called Crudwell-Smerrick Type, with a high-gloss polished finish, symmetrical form, near-straight convergent edges, side facets, and a semi-circular butt. They are interpreted as high status, prestige artefacts and the discovery of this example fairly near the coast supports the idea that they were traded over long distances perhaps as part of gift-exchange practices by communities along the Atlantic Seaboard.

Some locally made axes must also be considered as prestige items. Shotton (1972) recognized a scatter of large, well-made axes some up to 30cm long. They are thought to have been made from rock that outcrops in north-west Pembrokeshire, although their distribution extends across central and south Wales and across the Severn into southern England.

The material culture of the early Neolithic farmers was very different to what had gone before, with their enclosures, tombs, standing stones, rock-art, domesticated plants and animals, pottery, and polished flint and stone axes. Nevertheless, the evidence is accumulating for strong links between Mesolithic and Neolithic communities and nowhere is this better represented than in Pembrokeshire. But it did not remain static, and, as already glimpsed above, from around 3400 BC onwards there are notable changes in the construction and use of monuments alongside the emergence of new cultural traditions.

LATER NEOLITHIC: 3400–2500 BC

Communities living in Pembrokeshire through the later fourth and early third millennia BC maintained their distinctive identity, building on earlier traditions while also forging new connections with areas to the south and east. Pottery styles current in the area changed from carinated vessels and plain bowls to a range of heavily decorated impressed wares. The associated lithic industries also changed, especially the form of tools and weapons and the appearance of shaft-hole implements such as maceheads, battle-axes, and axe-hammers (Figure 2.20

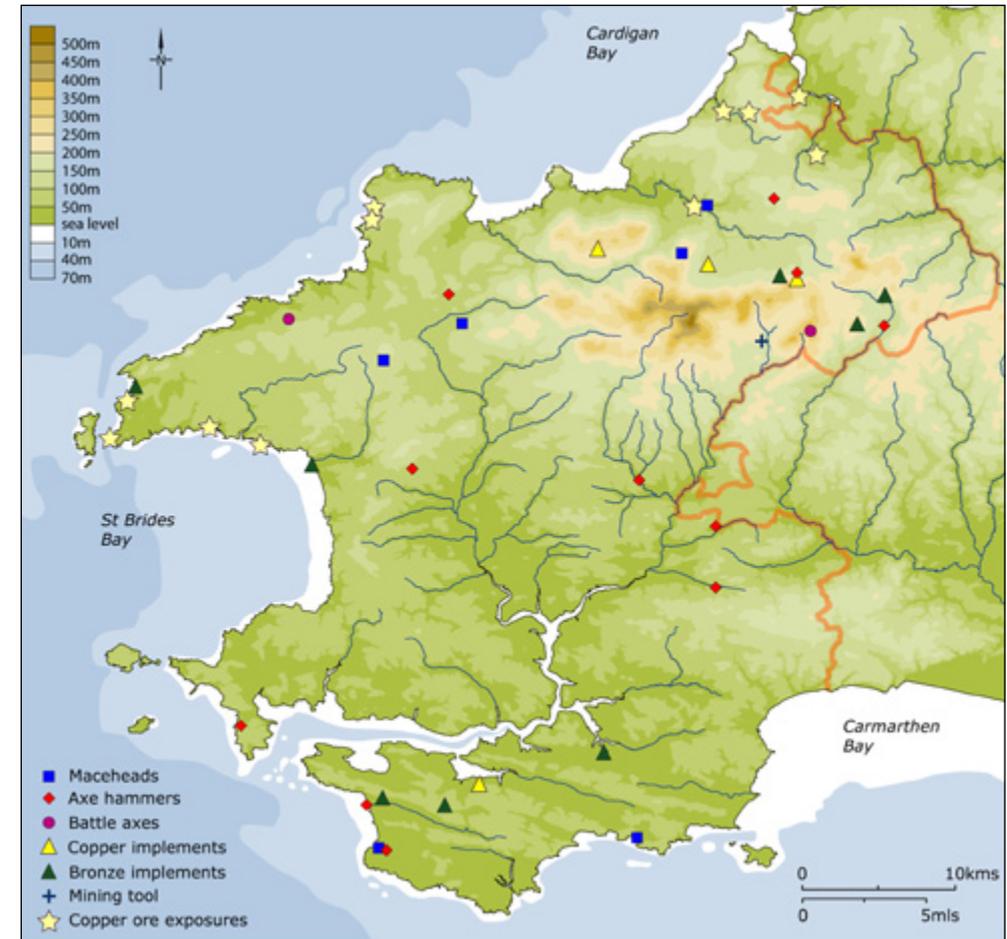


Figure 2.20. Distribution of perforated stone implements, early metalwork finds (copper/bronze and gold) and the location of outcrops containing copper ore. [Source: Dyfed Historic Environment Record].

and Figure 2.21). Behind these changes in material culture there was probably a shift in the pattern of social organisation and the adoption of new styles of monument. Elsewhere, Darvill (2010, 131) notes two trends shaping the structure of society at this time: the decline of monumental megalithic tombs designed for collective burial and an increase in signs of social ranking.

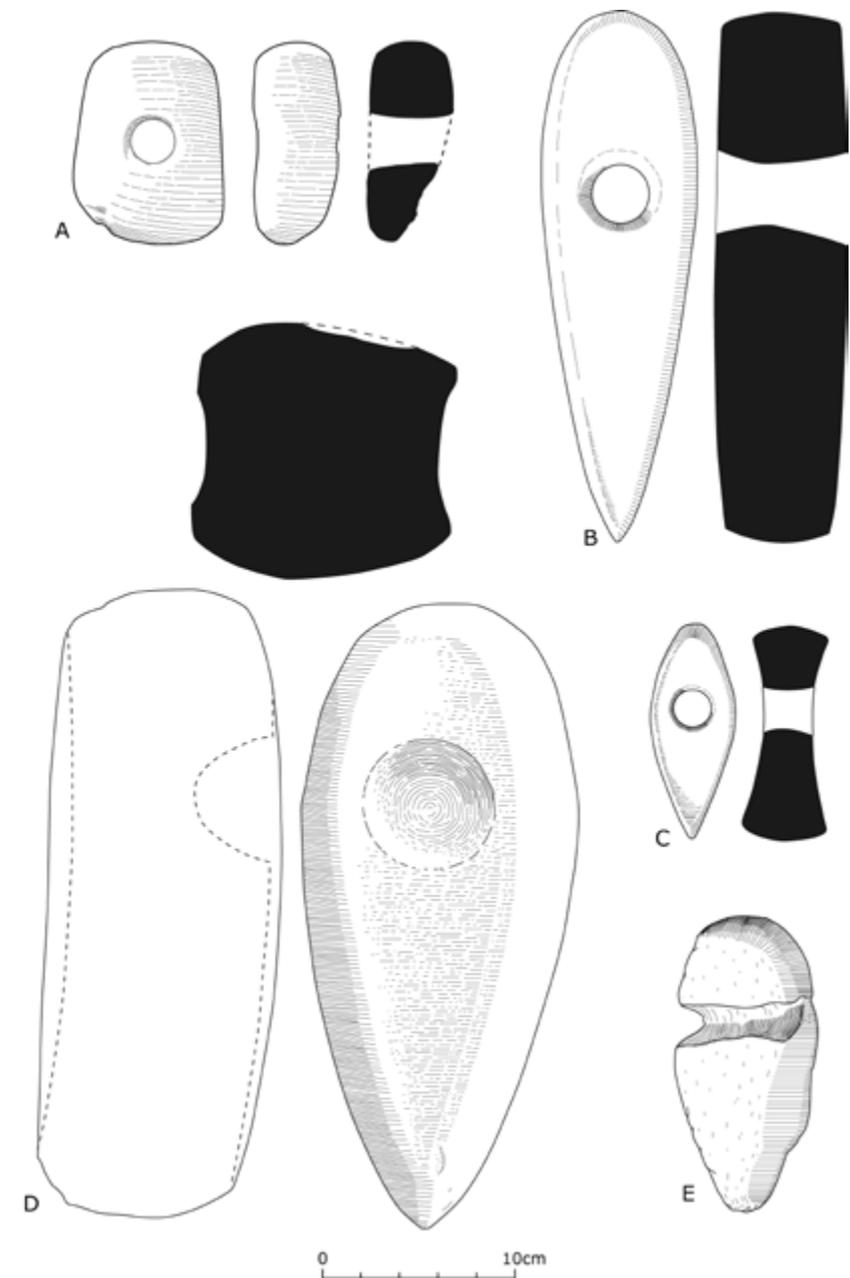
There is little evidence for climatic or environmental change during the period. The former remained warmer and drier than today, with occasional natural

catastrophes having a major impact. Mike Baillie has recognised a widespread reduction in tree-growth at 2911 BC that he tentatively attributes to rogue environmental conditions caused by a comet passing close by the earth, while a later interruption in tree growth around 2354 BC may be attributed to raised water levels at the time or perhaps the consequences of volcano Hekla-4 erupting on Iceland (Baillie 1999, 36–8; 63; and 146–9). Volcanic eruptions, such as those of Mount Hekla, put large amounts of volcanic ash into the atmosphere, some of which has been found as tephra in peat bogs that were open at the time (Hall et al. 1994). Such events would inexplicably have darkened skies in Pembrokeshire over several years and may have caused people living at the time to question the intentions of their deities and beliefs.

Pottery and material culture

After 3400 BC the round-based Neolithic bowls became coarser with more elaborate rim forms and a great deal of impressed decoration (Gibson 1995; Ard and Darvill 2015). Called Peterborough Ware after the site where it was first recognised this pottery has been recorded at a handful of sites in Pembrokeshire including the cave at Daylight Rock, Caldey Island (Lacaille and Grimes 1961, fig. 5). By 3000 BC the dominant pottery across much of Britain was Grooved Ware. It originated in northern Britain and consists of flat-based vessels with an extensive and no doubt symbolic decorative style. Grooved Ware has recently been recorded at Steynton near Milford Haven on the South Wales Gas Pipeline Project (Darvill forthcoming). Two pits were excavated, one was dated to 2890–2660 BC (SUERC-54661: 4185±29 BP) and 2570–2450 BC (SUERC-54662: 3966±29 BP), the other to 2880–2570 BC (SUERC-54659: 4138±29 BP) and 2880–2570 BC (SUERC-54660: 4120±29 BP). Hazelnut shells and burnt bone were present alongside the Grooved Ware (Barber et al. 2014). On the same scheme a site west of Westfields, Rosemarket, revealed a contemporary

Figure 2.21. Perforated stone implements of the late third and early second millennium BC from Pembrokeshire. A. Pestle macehead from Cilgwyn Cromlech, Newport; B. Battle-axe from Llanfyrnach; C. Battle-axe from Llanrhian; D. Part-made axe-hammer from Gronde, Cilymaenllwyd; E. Grooved maul from Mynachlog Ddu [After: A. Burrow 2003: fig. 50.2; B. Savory 1980: fig. 13.309; C. Savory 1980: fig. 13.331; D. Wheeler 1929: fig. 41.7; E. Savory 1940: op. p.248].



pit cluster, but no Grooved Ware. All the recorded pits had fills that included charcoal, burnt stones, and small quantities of worked flint; one also had a small quantity of burnt bone. Hazelnut shells in separate pits provided dates of 2839–2470 BC (SUERC-57286: 4034±30 BP) and 2860–2470 BC (SUERC-57287: 4079±30 BP). Grooved Ware has also been found in excavations at the Trefael chamber tomb near Newport but its context is uncertain (Nash et al. 2013), at the portal dolmen of Carreg Coetan Arthur (Rees 2012, 118), and at Stackpole Warren Site B (Benson et al. 1990, 199–202).

Typically early Neolithic weapons such as leaf-shaped flint arrowheads and laurel-leaf spear points were no longer made after 3000 BC and were replaced by hollow-based, triangular, and transverse forms. Igneous and metamorphic stone continued to be exploited for axes with the addition of a range of perforated tools, primarily maceheads in ovoid and pestle forms (Roe 1979). In Pembrokeshire these tool types are mainly represented by stray finds with little or no context. For example, a pestle macehead made of Preselite rock (Group XIII) was recovered from ploughed land about 100m east of the Cilgwyn Cromlech near Newport (Burrow 2003, 229. Figure 2.21 A), but what its connection, if any, was with the cromlech is completely unknown. From Castlemartin Burrows comes a single transverse arrowhead amongst a collection of flints of various dates (Burrow 2003, 228).

Settlements

Little direct evidence for settlement in Pembrokeshire during the first half of the third millennium, 3000–2500 BC, has been recorded, all of it in the southern part of the county (Figure 2.22). We may suspect, with good reason, that the poverty of evidence is because it has not yet been found rather than its absence.

At Site B on Stackpole Warren, sherds of Grooved Ware representing at least two vessels were found in a buried soil horizon that included traces of surfaces and hearths (Benson et al. 1990, 199–202). Amongst the earliest features were the remains of a small burnt mound followed by a post-built structure with a central hearth that could be the remains of a house, although the date of these features is far from certain. Although modest, this is the kind of evidence for small farmstead-type settlements found across many parts of Britain at this time.

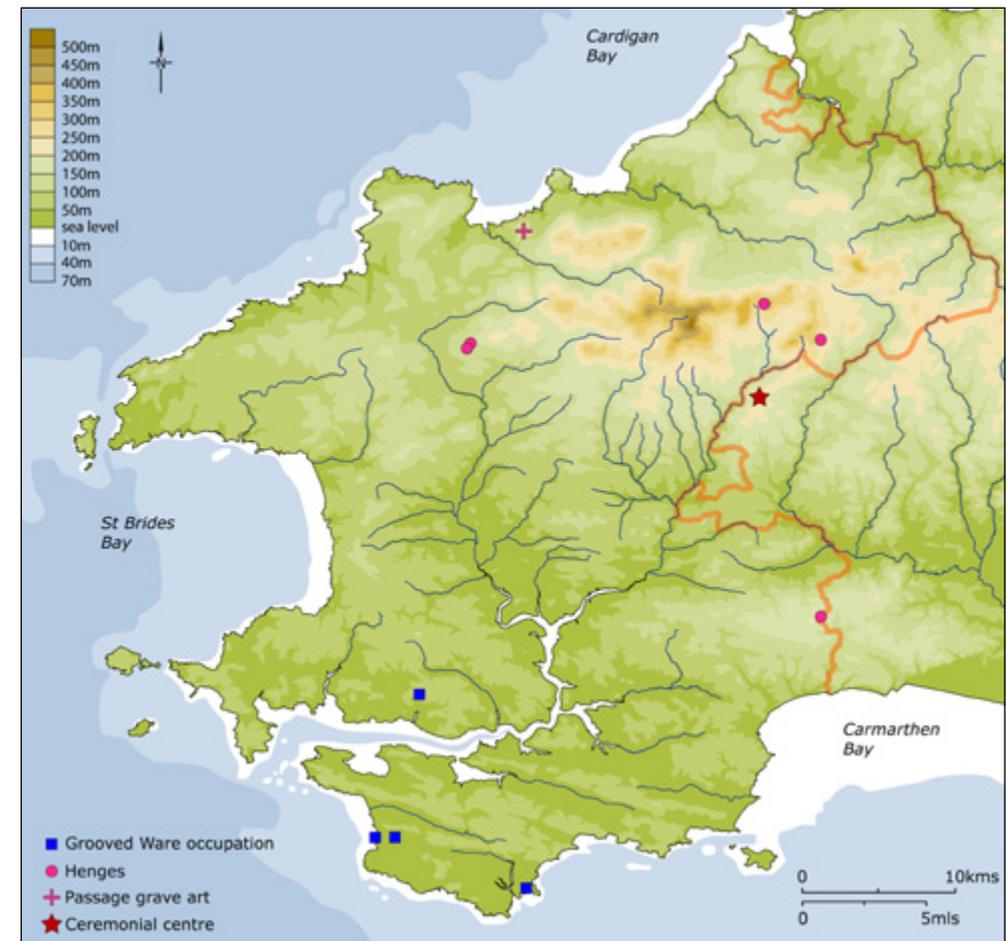


Figure 2.22. Distribution of recorded settlements and ceremonial sites of the early third millennium BC. Occupation areas (Peterborough and Grooved Ware associations); passage grave art; henges; ceremonial centre at Glandy Cross. [Source: Dyfed Historic Environment Record].

Megalithic tombs and burial monuments

Traditional megalithic tombs, the dolmens and long barrows, declined in significance through the later fourth millennium BC. No new examples were built after about 3300 BC, and existing structures were blocked-up and were no longer used for burials. At Pentre Ifan, rubble was carefully piled into the forecourt with large stones pitched inwards towards the chamber effectively sealing access to the front of the monument (Grimes 1949, 13). Garne Turne in north Pembrokeshire, seemingly had a forecourt added in the middle of the third millennium BC (Cummings and Richards 2014) suggesting that the tomb was still in use at that time, but it was the last phase of remodelling. The only site where there is a secure indication of when the initial blocking up of the monument occurred is Carreg Coetan Arthur where charcoal from within the blocking material over the forecourt was dated to 3360–2900 BC (CAR-393: 4470±80 BP).

Passage graves were very rare in Pembrokeshire during the early fourth millennium BC and their construction and use did not continue later. This contrasts with the situation in north Wales where a series of large developed passage graves were built on Anglesey and along the north Wales coast as far east as the River Mersey. These impressive monuments, amongst them Bryn celli ddu and Barclodiad y Gawres on Anglesey, included within their construction stones that were richly ornamented with passage grave art (Shee Twohig 1981, 93–106). Such monuments were also built in large numbers after 3200 BC across the Irish Sea in the Boyne Valley and across the northern half of Ireland, sometimes in cemeteries such as at Newgrange, Knowth, and Dowth in the Bend of the Boyne north of Dublin (O’Kelly 1982; Eogan 1986). Similar tombs are also known in Orkney (Davidson and Henshall 1989).

The apparent lack of developed passage graves in Pembrokeshire is supported by the general absence of rock-art in the passage grave style from the area (Shee Twohig 1981). However, an unusual gatepost stone at Penwaun (Maen Dewy), Fishguard, carries a series of zig-zag motifs that might possibly be related to passage grave art, although in later times it certainly served as a route marker and boundary stone and carries a series of scratched crosses made by pilgrims (Comeau 2009, 241 and fig. 9; Edwards 2007, P16. Figure 2.22).

Richard Bradley and Bob Chapman proposed the emergence of a series of passage-grave-using polities across the British Isles during the early third millennium BC, with interactions between communities living in each (Bradley and Chapman 1986). Although Pembrokeshire seemingly lacks developed passage graves that

did not mean it was isolated, only that communities living here were part of quite different networks of connected polities. In these the tradition of placing burials in collective tombs was rare and instead the focus lay on emphasizing the individual with graves sometimes covered by small round cairns or barrows.

Henges and new ceremonial monuments

Henges, conventionally defined as circular ceremonial enclosures defined by earthworks comprising a bank and internal ditch (Atkinson 1951; Wainwright 1969) began to be built in Britain and Ireland from about 3000 BC; research over the last 60 years or so has revealed something of their variety in form and character. Early examples, sometimes known as formative henges (Burrow 2010), typically have a ditch outside the bank. Classic henges appear after about 2800 BC, become widespread across Britain, and soon develop a number of regional variations including, on the coastlands of the Irish Sea basin, henges defined only by banks (Burl 1969, 15; 1997, 13, class IC and IIC). Harding and Lee (1987, 320–7) list one probable henge in Pembrokeshire, while Cook (2006, 13–15) lists four dubious sites in the county. Gibson (2012) takes a critical view of such monuments across Wales as whole, and, rather unhelpfully, considers most of the possible Pembrokeshire examples as embanked enclosures rather than a regional style of henges as a whole. Strangely, he accepts the later prehistoric enclosure at Castell Mawr near Eglwysrwr as a classic henge (Gibson 2012, 117; but cf. Mytum and Webster 2003) although on what basis is unclear.

Unscrambling the evidence in published listings, it seems that no certain formative henges are currently known in Pembrokeshire, but there are several good candidates for classic Class I henges and examples of Burl’s Class IC, mainly in the north of the county (Figure 2.22). An example of the former was found below the Carn Menyn Cairn in the central sector of the Preseli ridge (Darvill et al. 2012a, 31) and is discussed in detail below. The monument occupies a significant position on the site of an earlier standing stone and effectively encloses the source of the spring that fed a glaciofluvial channel now known as The Stone River which runs downslope into the Gors Fawr bog below.

Class IC henges, enclosed only by a bank and with a single entrance, can be suggested at Ffynnon Delyn, Crymych (Cook 2004; Gibson 2012, 109) and Ffynnon-Newydd, Nantgaredig, where the enclosure was about 60m across with an entrance flanked by a pair of standing stones (Gibson 2012, 109; Williams

1984). Just across the border in Carmarthenshire, Meini Gwyr in the heart of the Glandy Cross complex is a fine example of a Class IC henge with its single entrance enhanced by standing stones (Grimes 1939c; Kirk and Williams 2000; Briggs 2012). It lies on a ridge overlooking the Eastern Cleddau. The low circular bank is 36m in diameter, within which was a circle of 17 stones defining a ring 18m across that is set along the inner slope of the bank. Two stones survive. There was a narrow stone-lined entrance through the earthwork opening to the west, in front of which was a pit containing charcoal. In a hearth on the south-east side of the bank were sherds of a food vessel (Grimes 1938; 1939c). Magnetometry and resistivity surveys of the site in 2002 as part of the SPACES project revealed that Meini Gwyr is a more complicated than first thought with a ring of pits or stone sockets underneath the bank (Darvill and Wainwright 2003b, 26–30). The site would clearly repay further work to enable the structural sequence to be established and the key phases dated.

Also in Carmarthenshire, investigations along the line of the South Wales Gas Pipeline revealed a previously unknown Class II henge at Vaynor Farm, Llanddowror, overlooking a tributary of the River Taf. The interior had a diameter of about 17m with 12 regularly spaced pits around the inner lip of the ditch (Barber and Pannett 2006, 88–91; Darvill forthcoming).

Although the number of sites dated to the early third millennium BC in Pembrokeshire is relatively few, the overall distribution is interesting. Settlement sites consistently lie to the south with ceremonial sites to the north. On the interface, in the upper reaches of the Eastern Cleddau is the ceremonial centre of Glandy Cross (Figure 2.22) with its associated henge, stone circles, cove, standing stones, ring-ditches, and stone-working areas (Kirk and Williams 2000).

CHALCOLITHIC AND EARLY BRONZE AGE: 2500–1600 BC

From 2500 BC the processes of opening up the landscape for farming and animal husbandry quickened pace with increasing evidence for land divisions, fields, and paddocks. The climate became more continental, warmer with dryer summers, reaching a peak around 1500 BC when average summer temperatures were perhaps two or three degrees warmer than today.

Culturally, the population of south-west Wales was probably fairly stable, but those living here adopted a succession of pottery styles and associated material culture that reflected changing fortunes, relationships with surrounding

communities, and the re-creation of local identities (Burrow 2012). Two broad phases can be recognized through preferred pottery usage: Beakers, followed by food vessels and collared urns. These provide insights into the chronology of activity at recorded sites and monuments, although it is recognized that their currency overlaps a little. This was also the time when metal first appeared in west Wales, and when the axis of trade and exchange shifted from a focus on the coastlands of the Irish Sea Basin towards stronger connections eastwards with communities in southern Britain.

Economy and land-use

Pollen diagrams from across Britain show that after about 2500 BC there is greater evidence of forest clearance than ever before and, coupled with the evidence of charred plant remains, it is apparent that the later third millennium really marks the start of extensive farming in Britain (Stevens and Fuller 2012). Plough-marks have been recorded at a number of sites, and there is evidence that wheat and barley were grown fairly extensively. Cattle, sheep, and pig remained the main domesticates kept at this time, although wild animals including aurochs, red deer, roe deer, wild horse, wild boar were hunted, and gathered foodstuffs included acorns, blackberries, barberries, sloes, crab-apples, haws, and hazelnuts (Smith et al. 1981, 189–92).

Stone and metal

Stone was significant to communities living in south-west Wales since at least the end of the last Ice Age. Whether for producing beads and ornaments, shaping into axes and prestige exchange items, or lifting great blocks high into the air, stone was important. But some kinds of stone were more important than others and after 2500 BC there were three in particular that were of very special importance: Preseli stone, especially the dolerites, that had been used for making axes in the fourth and early third millennia BC was sufficiently valued after 2500 BC for more than 80 blocks of it to be transported to Stonehenge in Wiltshire; copper-rich lodes whose metal content was extracted for use in the manufacture of axes and various other kinds of tools, weapons, and prestige objects; and native gold and gold-rich lode whose metal content was extracted for making prestigious personal ornaments.

Implements made of Preseli dolerite include maceheads, battle-axes, and unperforated axes (Stone 1950). A research team from the Open University examined 24 artefacts out of the 28 assigned to Preseli dolerite (Group XIII). Eight conformed very well to the defined petrological group (Williams-Thorpe et al. 2004; 2006) and showed a distribution in Wales and southern England, including some from the Stonehenge and Avebury area. In Pembrokeshire an axe-hammer of Preseli dolerite, well-made with smooth polished surfaces, slightly convex sides, and hour glass perforation was found in a cairn on Crugiau Dwy, Pentregalar, Llanfyrnach (Nash-Williams 1927; Savory 1980a, 128. Figure 2.21 B). A miniature battle-axe of quartz dolerite, beautifully made and finished with hour-glass perforation, was found in 1805 in the material thrown out from a large cist beneath a barrow known as The Beacon, Llanrhian. The cist apparently contained traces of bone (Savory 1980a, 128. Figure 2.21 C). The discovery of a large axe-hammer at Grondre, Cilymaenllwyd, with an incomplete perforation shows the local manufacture of at least some of these distinctive shaft-hole implements (Wheeler 1929, 137–8. Figure 2.21 D).

It is unclear when exactly metal items first appeared in Britain, although it was probably soon after 2600 BC (Needham 2012; Bray 2012). The earliest metal objects were simple flat axes, daggers, and halberds made of copper from Ireland. Examples from Pembrokeshire include a copper flat axe of Grotown / Milton Moss type from Cwm Gwaun in the Fishguard area (Lodwick and Besly 2006, 173), a halberd of Pistill Dewy type from Hundleton in the south of the county (Lodwick 2004, 125; Needham et al. 2015, S2), and a second halberd of Pontrhydygroen type from Carn-y-bont Quarry, Newport (Ó Ríordáin 1936, fig. 57.2; Wheeler 1929, fig. 45, 3; Needham et al. 2015, S2. Figure 2.23 A). All are stray finds but serve to emphasize the widespread cultural connections that local communities enjoyed at this time.

The addition of tin to copper to make bronze in the later third millennium BC opened up new technical possibilities and reveals increasing contacts with continental Europe. Early bronze objects in Pembrokeshire are relatively rare; increasingly they are found by metal detectorists but one has a good archaeological context and was associated with a burial. This was at Corston Beacon cairn near Hundleton where a splendid Butterwick type 3-rivet bronze dagger datable to the period 2300–1900 BC was found with a male inhumation in an elaborately constructed cist (Fox and Grimes 1928; Gerloff 1975, 44; Cressey and Sheridan 2003, 58. Figure 2.23 D). All other discoveries are stray finds, including fine flat axes from Whitechurch (Figure 2.23 B) and Llanfyrnach (Figure 2.23 C). The

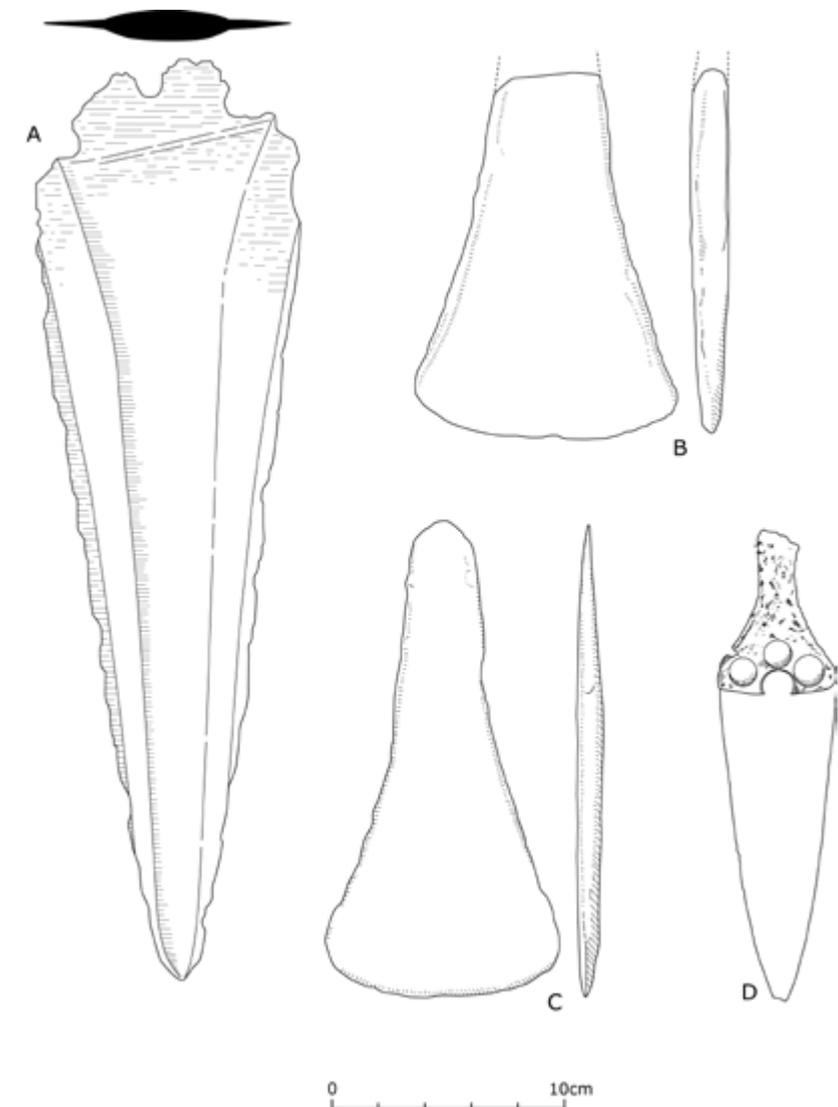


Figure 2.23. Copper and bronze tools and weapons of the late third and early second millennium BC from Pembrokeshire. A. Copper halberd from Carn-y-bont Quarry, Newport; B. Bronze flat axe from Whitechurch; C. Bronze flat axe from Llanfyrnach; D. Bronze dagger from Corston Beacon, Hundleton. [After: A. Wheeler 1929: fig. 45.3; B and C. Savory 1980: fig. 17.107 and 114; D. Savory 1980: fig. 17.331]

example from Pen-lan-fach to the north-east of Moel Trigarn is said to have been found in association with a perforated stone axe-hammer (Nash-Williams 1929), but details are scant.

Welsh copper ores were being exploited within a few centuries of Irish copper items being introduced into Britain. Copa Hill, Cwmystwyth (Timberlake 2001; 2003; 2014) is one of the earliest mines so far known, and is part of a cluster of copper extraction sites in the central Wales orefield. Working began before 2000 BC, albeit initially on a small scale. Modified beach pebbles were used as hammerstones at these early mines, suggesting that the lodes were being exploited by communities living on the coast of west Wales. No early mines have yet been found in Pembrokeshire although small localized ore deposits are known, especially around the coast, and some could have been worked (Green et al. 1996. Figure 2.20). A grooved maul found near Mynachlog-ddu, immediately below Carn Menyn (Savory 1940), has a flattened butt, relatively pointed end, and is encircled by a deep, broad groove (Figure 2.20 E). Made of ophitic dolerite, nearly 1.8kg in weight, it fits comfortably into the typology of early mining hammers proposed by John Pickin (1990; and cf. Turek 2011, 394–5).

Gold, initially also from Ireland, was used for lunulae, sun-discs, button caps, and a series of items variously referred to as earrings or tress-rings that are in fact rolled-up disc-headed pins (J J Taylor 1980; and cf. Fitzpatrick 2011, 131–7). The best-known early source of Welsh gold is at Dolaucothi, just over the border in Carmarthenshire (Burnham and Burnham 2004). But, while there is abundant evidence for mining in Roman times the prehistoric origins of the workings have yet to be explored in detail. Alluvial gold from central Wales was however worked in the second millennium BC and was the raw material used in the production of the Banc Ty'nddøl sun-disc found in 2002 adjacent to the Copa Hill Copper Mine at Cwmystwyth in Ceredigion (Timberlake 2004).

Beakers and Beaker Culture

There can be little doubt that the quest for copper and gold had profound effects on societies living in west Wales during the late third millennium BC, and must also have had a significant impact upon the social and cultural landscapes of the time. It is probably no coincidence that after 2500

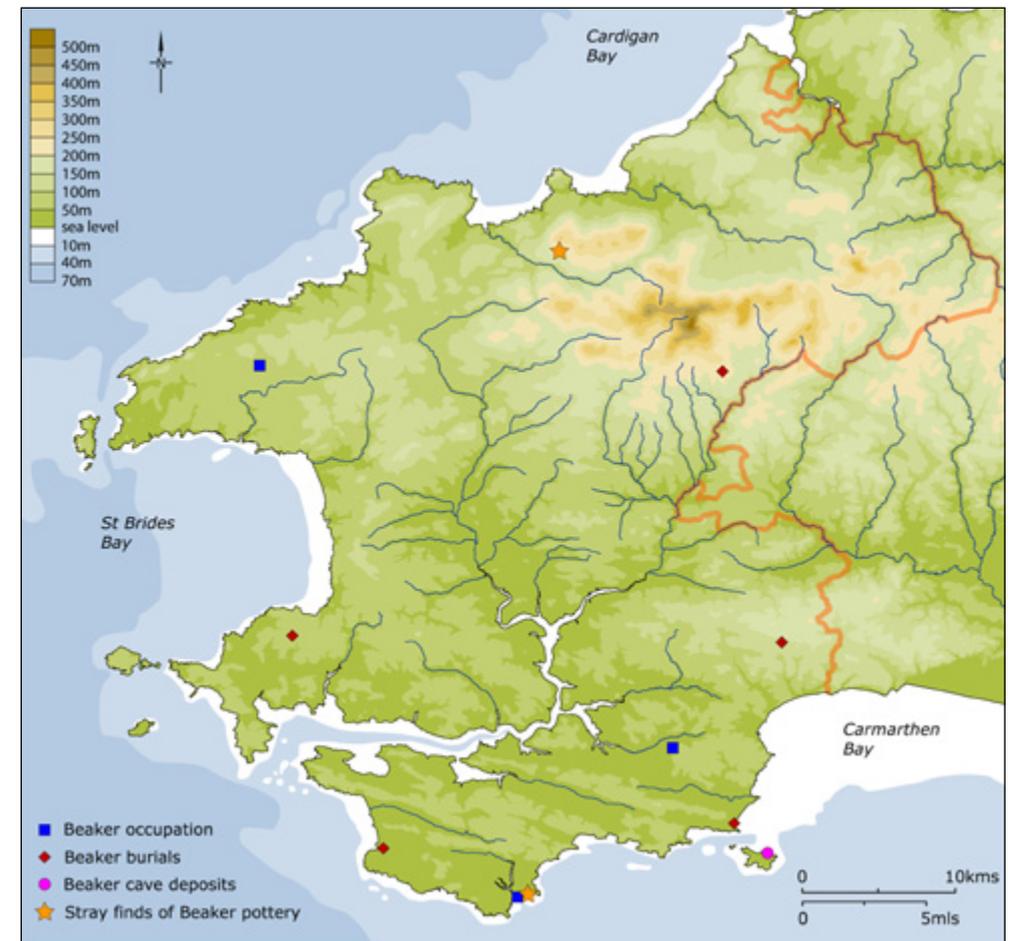


Figure 2.24. Distribution of recorded settlements, cave deposits, and burials of the later third and early second millennium BC associated with Beaker pottery, and other dated sites of the period without cultural material. [Source: Dyfed Historic Environment Record].

BC most of the British Isles were drawn into a much broader set of cultural spheres characterized archaeologically by distinctive continental pottery styles: Corded-ware cultures to the east and Beaker cultures to the south and west. Britain sits more or less on the boundary between the two, and while its communities were certainly influenced by both it was the Beaker cultures that dominated (Needham 2005).

These distinctive new cultural traditions first find expression in the archaeological record as a range of ceramic vessels known as Beakers: finely finished red-coloured vessels with carefully executed impressed decoration. One of the reasons why similar pottery is found over such wide areas is that people were moving around. Scientific studies of indicator isotopes from human bones and teeth at different stages in their lives show that they were travelling within Britain and, occasionally, into Britain from the continent (Parker Pearson et al. 2016). One of the earliest recorded collections of Beakers in Britain was found in a burial at Boscombe Down, Wiltshire, along with the remains of five adults, a teenager, and one or two children, all of whom were male and all of them probably grew up in west Wales (Fitzpatrick 2011, 32).

New kinds of metal objects representing prestige items – daggers and personal ornaments – gained widespread currency during the early second millennium BC. Flint daggers, barbed and tanged arrowheads, stone battle-axes, whetstones and fire-making kits for travellers entered the repertoire, and burials containing such items were sometimes lavish. Figure 2.24 shows the recorded distribution of Beaker Culture sites in Pembrokeshire; although few in number they are widely scattered.

The earliest Beakers have a distinctive bell-shaped profile, a low carination, and extensive cord-impressed or comb-impressed decoration. They are sometimes known as Maritime Beakers and have a wide, mainly coastal distribution from western Spain to northern Scotland. Stuart Needham has argued that these represent items used to signal membership of a circumscribed and rather exclusive cultural identity (2005, 209). Some of the earliest in Britain come from the grave of the Boscombe Bowmen, already referred to because of their apparent connection with west Wales, and who died between 2500 and 2340 BC (Fitzpatrick 2011, 8–61). Only slightly later is the Amesbury Archer who was buried 2400–2200 BC some 6km east of Stonehenge, Wiltshire (Fitzpatrick 2011, 65–165). This individual was an adult male 35–45 years old who was born in Alpine Europe and who might have travelled to Stonehenge on a pilgrimage perhaps to relieve pain in a badly damaged left knee. Over 100 items were found in his grave including five early low carinated beakers, three copper knives, a variety of items made of flint, stone, bone, shale, antler, and a piece of iron pyrites. All of this paraphernalia was essential equipment for a traveller in life or in the after-life (Darvill 2010, 170). One item, a red-coloured perforated stone bracer, probably originated in west Wales, perhaps from a deposit of Cambrian age mudstone (Fitzpatrick 2011, 105), although whether the man himself ever visited the area is not known.

Several early Beakers have been found in Pembrokeshire, all of them from coastal areas. Two reconstructable vessels, and sherds from perhaps half a dozen more, from Pen y Bont, St Davids, can be assigned to the early horizon although not the very earliest phase (Murphy 2006, Figure 2.25 A and B). They were found in a pair of small pits or scoops sealed below a later round barrow. The small collection of vessels from Site J at Stackpole Warren also belongs to this early horizon, and five of the seven decorated vessels have very fine horizontal lines variously made with a notched comb or twisted cord (Benson et al. 1990, 211–22). Both finds indicate settlement in the area. By contrast a single sherd of Beaker from inside the portal dolmen at Carreg Coitan Arthur near Newport may also be from an early Beaker, although it is too small to be sure, and suggests a continuing interest in these already ancient monuments (Rees 2012, 118).

By 2200 BC the initial flush of enthusiasm for Beaker identity had passed as the culture that embraced them became more mainstream in what Needham described as “instituted culture” (2005, 209). Middle period Beakers include a wide range of weakly carinated, long-necked, short-necked, and S-profile forms. The most substantial settlement of the Beaker period in Pembrokeshire belongs to this horizon and was excavated in 1972–79 at Stackpole Warren Site A in the south of the county (Benson et al. 1990). It was found in an area of blown sand that in some cases demarcated the various periods of settlement. As in so many other cases in Pembrokeshire, the earliest activity on the site dates to the Mesolithic period and there are traces of Neolithic presence as well. The first big impact though is represented by plough-marks within a series of small embanked fields dated to the end of the third millennium BC. Within Site A there were three probable roundhouses of which the earliest (Roundhouse 500), was a slightly oval post-built structure about 6m by 5m associated with a spread of Beaker pottery representing more than 45 vessels (Benson et al. 1990, fig. 4). Smaller yet broadly contemporary assemblages were recorded at Stackpole Warren Sites B and C. More recently, excavations in advance of the A477 Sageston-Redberth Bypass (Page 2002) revealed extensive evidence of Neolithic occupation (see above) as well as activity that on chronological grounds must date to the early or middle Beaker period. Charcoal from the fill of a posthole gave a date of 2400–1970 BC (WK-10154: 3761±56 BP) and charcoal from a small pit gave a date of 2900–2300 BC (WK-10157). There was a puzzling lack of material culture or any evidence for economy.

Two middle-period Beaker burials are known from Pembrokeshire. The first is a cist-grave found at Croft Quarries, Blaen-cil-coed, Ludchurch (Savory

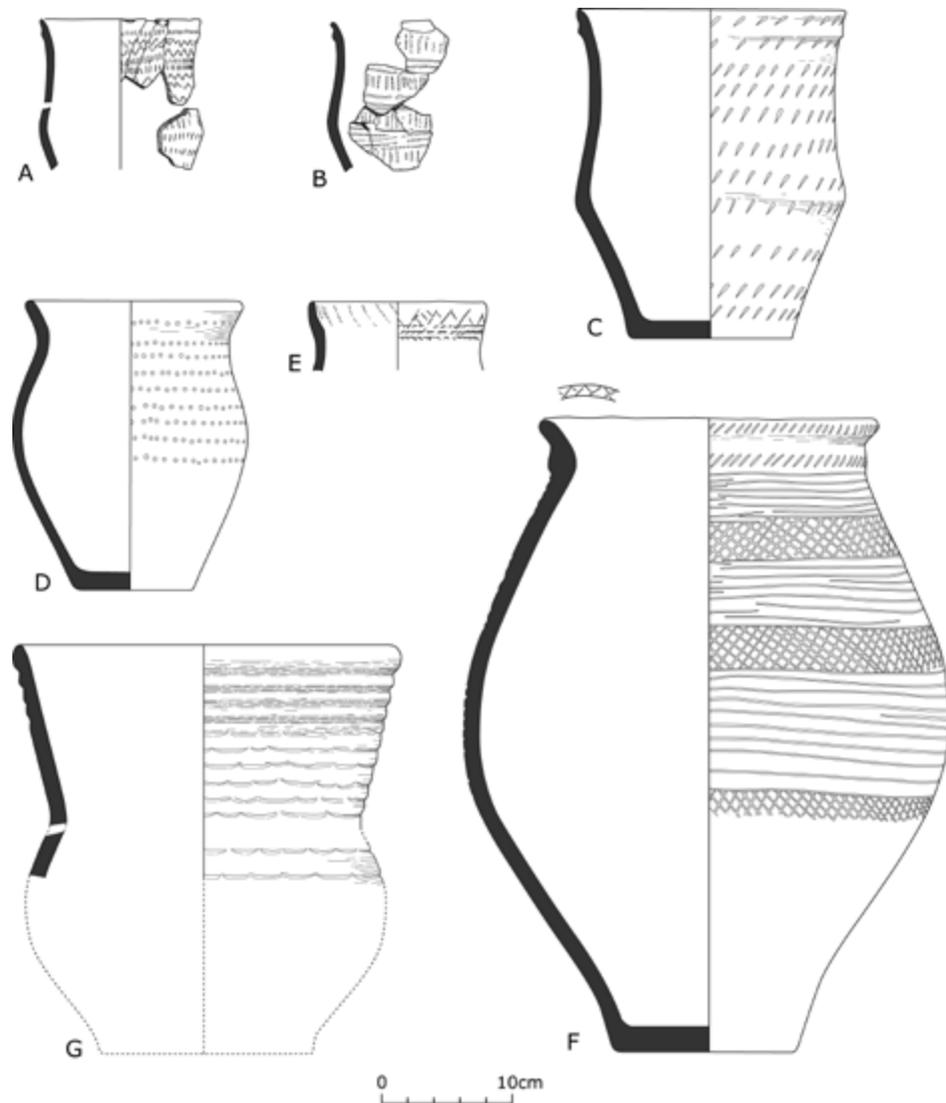


Figure 2.25. Beaker pottery from Pembrokeshire. A and B. Pen y Bont, St David's; C. South Hill, Talbenny; D: Ludchurch; E Parc Maen, Llangolman; F and G. Potter's Cave, Caldy Island [After: A and B: Murphy 2006: fig. 2; C and D Savory 1980: fig. 52.372 and 361; E. Marshall and Murphy 1991: fig. 9.1; F and G. Savory 1980: figs. 52.508 and 56.507].

1980a, 137 and fig. 52.361). A short-necked Beaker (Figure 2.25 D) accompanied a multiple burial comprising the fragmentary remains of a woman, a man, a youth, a newly born child, and a dog; surely a family burial. The second is from South Hill, Talbenny, (Fox 1942) where the excavation of a multi-period round barrow produced a tall mid-carinated vessel with finger-nail impressed decoration (Figure 2.25 C). The beaker, along with an unfinished barbed and tanged arrowhead, came from a small primary mound of clay and stones covering an apparently empty grave dug into the subsoil. Later burials were found in the mound showing that it served as a cemetery over several centuries. The remains of a short-necked beaker found inverted in a pit at Parc Maen, Llangolman, in 1981 may indicate the site of a truncated burial (Marshall and Murphy 1991. Figure 2.25 E).

From about 1950 BC Beaker culture had become a past-reference set of identities (Needham 2005, 210). Pottery from this phase is characterized by long-necked forms with flared necks, mid-bellied S-profile forms, and globular forms. Two vessels from Potter's Cave on Caldy Island belong to this late horizon (Figure 2.25 F and G), and in this connection it is interesting that they were deposited in a cave as part of a long-running pattern of episodic usage extending back into the fourth millennium BC (Lacaille and Grimes 1961, 36 and 38–40).

Post-Beaker cultures: users of food vessels and collared urns

After 1800 BC the distribution of activity in Pembrokeshire appears to expand markedly (Figure 2.26). The familiar and traditional Beaker pottery was complemented by, and eventually superseded by, new styles including food vessels and Irish bowls (Figure 2.27), collared urns (Figure 2.28), and cordoned urns. Miniature vessels of various kinds are sometimes found in association with these larger pots (Figure 2.29) and also have a story to tell. In Pembrokeshire, as in the rest of Wales, nearly all the known vessels in these various styles come from burials or ceremonial sites of some kind, but there are important exceptions.

Known settlements of the early second millennium BC are confined to the south of the county (Figure 2.26). At Site A on Stackpole Warren (Benson et al. 1990) one of the three recorded structures (Roundhouse 146) certainly belongs to this period. It was built of substantial timbers, was about 5m in diameter, and had a porched entrance opening to the north-east (Figure 2.30). The remains of more than 15 collared urns made in a variety of fabrics were scattered across

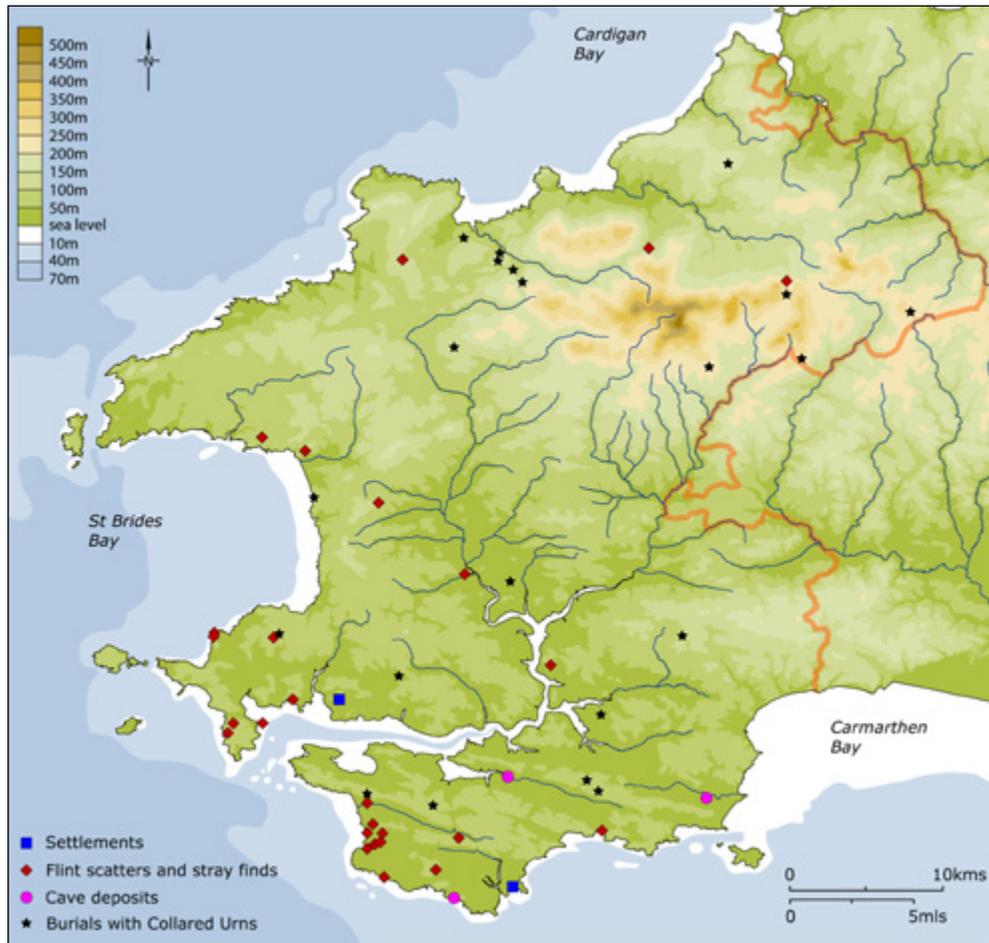


Figure 2.26. Distribution of recorded settlements, cave deposits, and burials of the early second millennium BC associated with food vessels and collared urns. [Source: Dyfed Historic Environment Record].

the floor of this house which had burnt down at the end of its life. Small assemblages of worked flint, animal bone, human bone, and plant materials were also recovered. The cereal grains were dominated by barley. Two radiocarbon dates from the destruction deposits of 2140–1700 BC (CAR-475: 3570±70 BP) and 1880–1460 BC (CAR-100: 3350±70 BP) date the house to the sixteenth or seventeenth century BC. Another structure (Roundhouse 491), slightly sunken and rather smaller at 4.5m by 2m, may have been contemporary as it contained

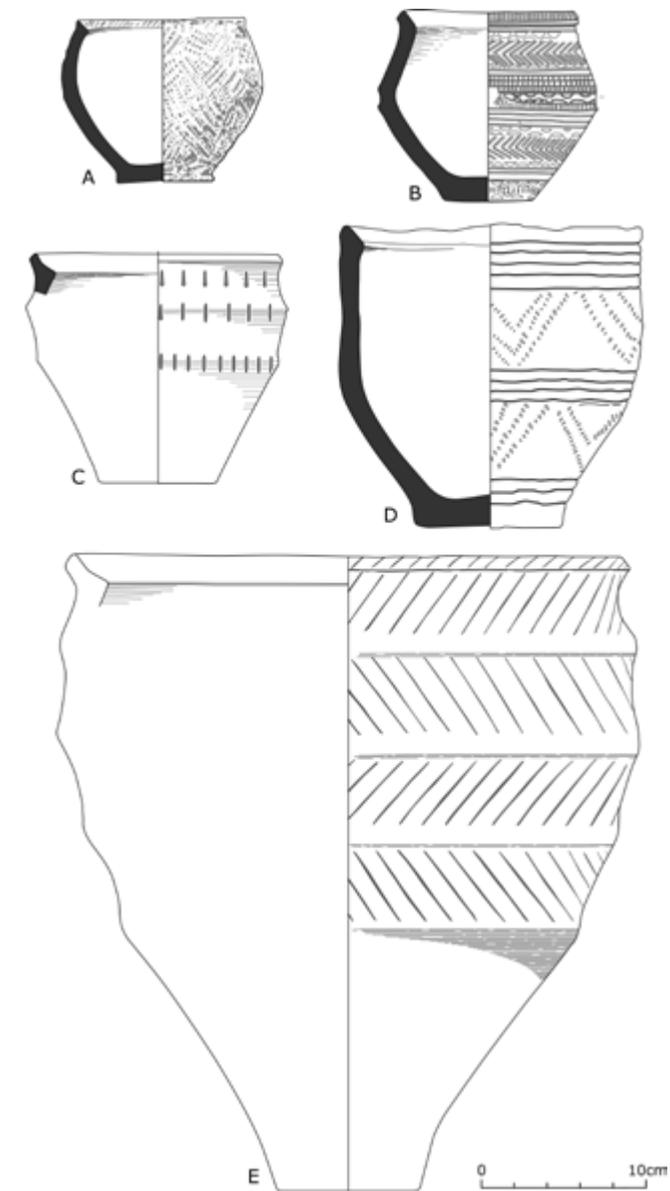


Figure 2.27. Food vessels from Pembrokeshire. A. Templeton, Narbeth South; B and C. Manorbier; D. Linney Burrows, Castlemartin; E. Fishguard. [After Savory 1957: figs. 9.7, 9.5, 10.2, 11.2 and 11.3].

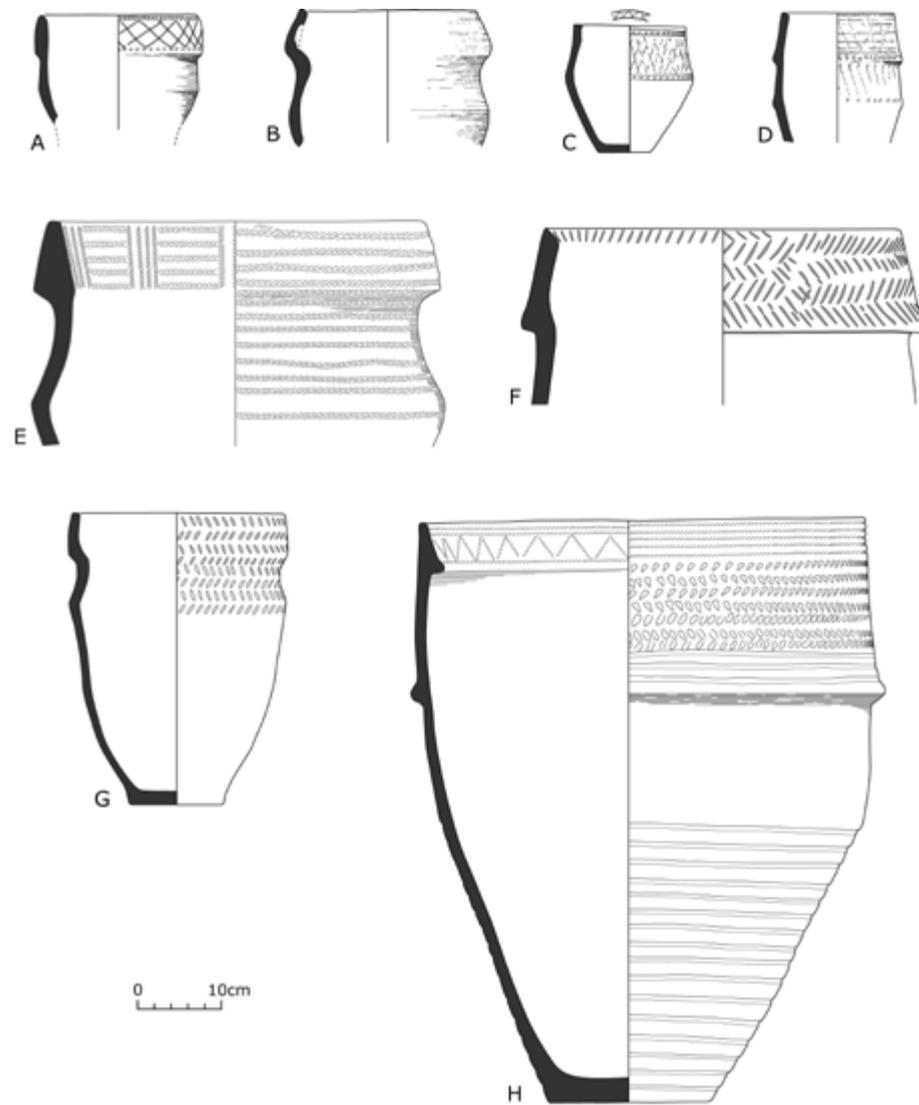


Figure 2.28. Collared urns from Pembrokeshire. A and B: Stackpole Warren Site A; C and D: Parc Maen, Llangolman; E: Carew; F: Fishguard South; G: Llanychaer; H: Templeton, Narbeth South. [After: A and B Benson et al. 1990: fig. 36.68 and 69; Marshall and Murphy 1991: fig. 9.2 and 3; Savory 1980: figs. 70.432, 62.410, 63.441 and 69.414].

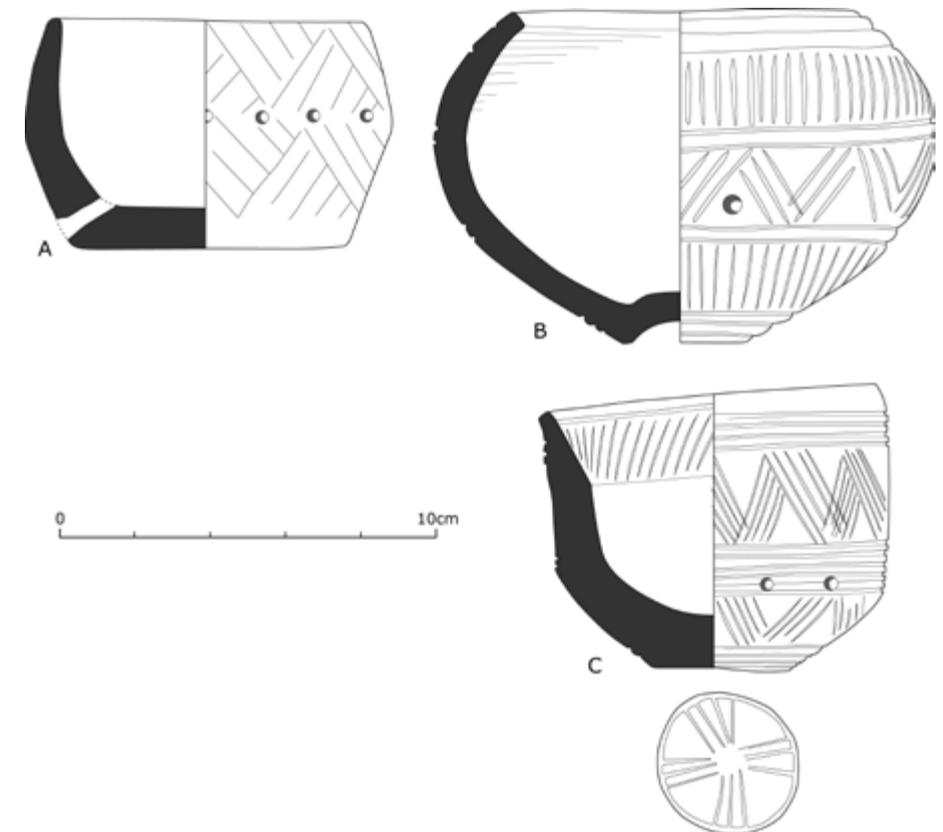


Figure 2.29. Miniature vessels from Pembrokeshire. A. Letterston; B. South Hill, Talbenny; C. Templeton, Narbeth South. [After Savory 1980: figs. 71.316, 372 and 414].

sherds of collared urn alongside residual Beaker pottery (Benson et al. 1990, 187). The good quality of preservation at this settlement arose because the whole area was inundated with blown sand deposits from around 1600 BC onwards (see below); it is one of very few settlements of this period so far known in Britain.

Excavations in 2004–5 in advance of a Liquid Natural Gas Installation on the northern side of the Milford Haven estuary at South Hook, Herbrandston, produced an assemblage of collared urn within a small pit (Crane and Murphy 2010, 121). The pit also contained burnt clay, stone, and grains of wheat and barley.

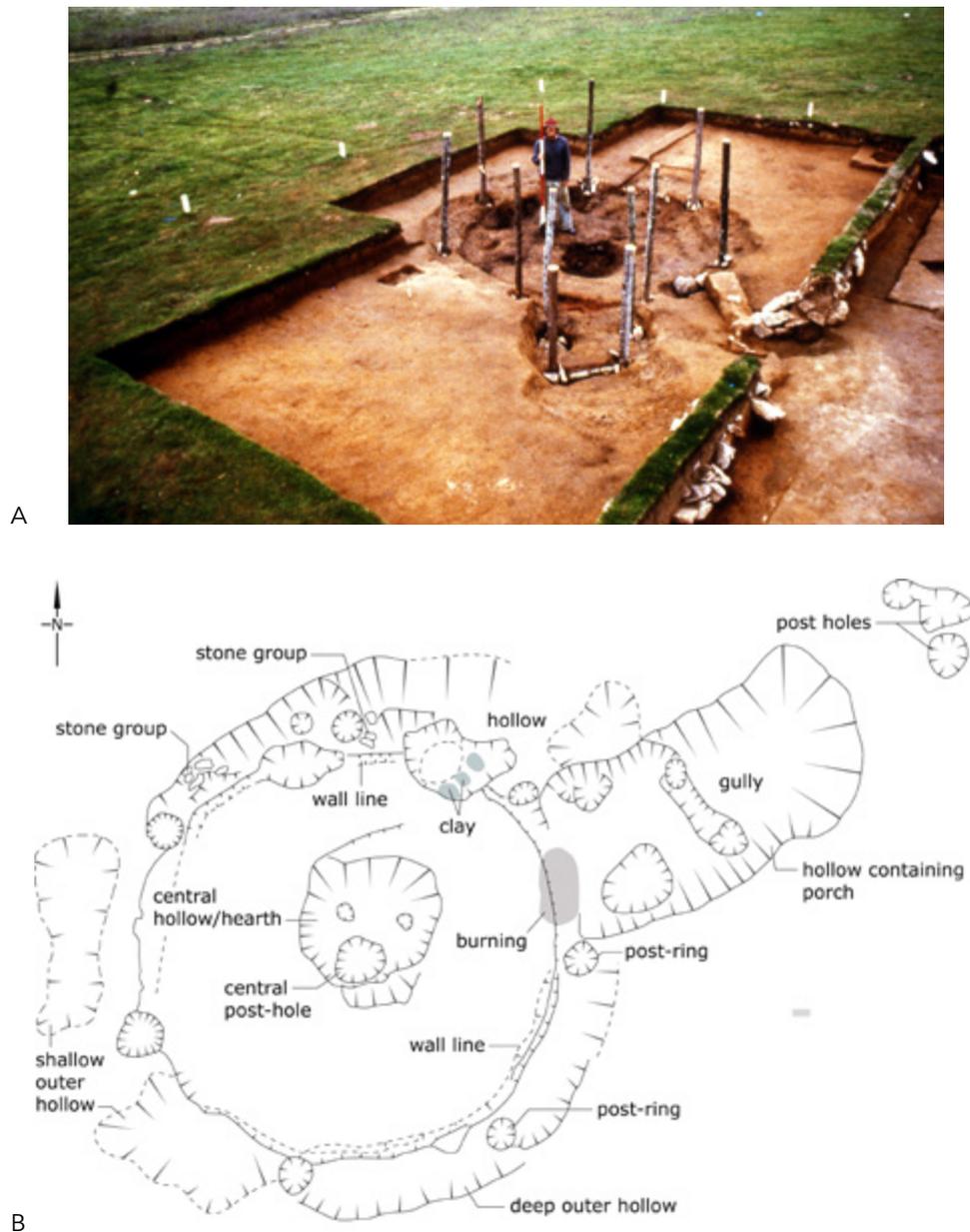


Figure 2.30. Stackpole Warren Site A, Roundhouse 146. A. View of excavated features looking north-east. B. Plan of excavated features. [After Benson et al. 1990: Plate 13(b) and fig. 5].

A radiocarbon determination of 2200–1960 BC (Beta-255069: 3690±40 BP) was obtained from a barley grain and one of three other shallow pits produced a date of 2010–1760 BC (Beta-255072) from a carbonised hazelnut. Analysis of charcoal from the pits showed that hazel and oak dominated the species, used for firewood, along with some hawthorn. Cereal remains from the site demonstrate that a variety of crops were being consumed during the early Bronze Age, including emmer wheat, possibly club wheat, and hulled barley. A microlith, cores, micro-burin and scrapers from the site, together with the Neolithic settlement evidence discussed above, indicate a familiar pattern to the long-term use of this place between 6000 BC and 2000 BC.

The wide distribution of burials associated with collared urns suggests that either settlement was more extensive than the few recorded occupation sites indicate, or that the landscape was heavily sectorised with occupation mainly on the coastal plain and a ceremonial focus for upland areas to the north (Figure 2.26). Longworth lists 27 collared urns from Pembrokeshire, all connected with burials (1984, 317–22), and many more have been found since his research was carried out. Savory (1980a, figs. 62–5) illustrates a good range of the material typical of the region. The fabrics of all the known vessels contain local temper and the decorative styles show regional variations which set them apart from those in the rest of Wales and illustrate the way in which local identities were expressed. Longworth's Primary Series collared urns make up 20–30 per cent of all collared vessels recorded, while vessels of his Secondary Series belong exclusively to the North Western Style and account for nearly 50 per cent of all recorded collared vessels (Longworth 1984, figs. 16 and 24). Cultural links northwards are also attested by the single cordoned urn recorded from Pembrokeshire. It was inverted below a stone slab in a secondary context within a round barrow on Kilpaison Burrows, Rhoscrowther, and contained a small collared urn within which were the cremated remains of a boy aged 11–12 years (Fox 1926b, 15–16, Burial CII). The main distribution of cordoned urns, regional variants of collared urns, lies in a broad swathe running from Northern Ireland across the Irish Sea to the Isle of Man, and then north-eastwards into southern and eastern Scotland (Waddell 1995, fig. 11.3).

Miniature vessels, also known as cups, pygmy cups, or accessory vessels, from Pembrokeshire are known exclusively from burials (Figure 2.29). Savory (1958) lists five examples, of which those from North Hill (Templeton), Cronllwyn (Llanychaer), and Pendre (Letterston) are bipartite forms with incised decoration, the example from South Hill (Talbeny) is globular with a foot-ring, while

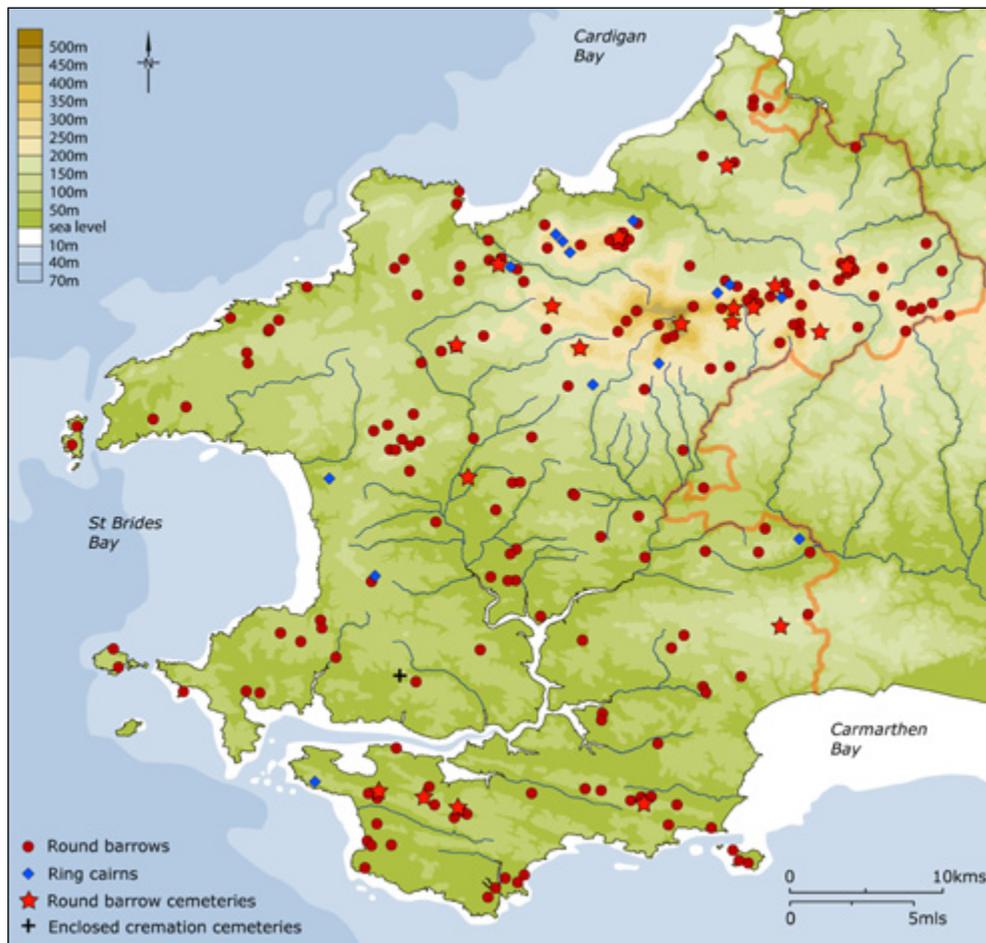


Figure 2.31. Distribution of round barrows, ring-cairns, fancy barrows, ring ditches, barrow cemeteries, and enclosed cremation cemeteries.
[Source: Dyfed Historic Environment Record].

the example from Hanton (Boulston) is unclassified because its whereabouts is unknown. No examples of the distinctive grape cups or Aldbourne cups typical of central southern Britain have been found in Pembrokeshire, but a cup from Meini Gwyr just over the county boundary in Carmarthenshire is especially interesting (Fenton 1860, 32–33; Laws 1888, 31; Savory 1958, 113, B3). Apparently found in a low mound or cairn together with a bronze dagger and another conventional bi-partite miniature vessel this unusual piece has vertical slots around the

body creating “a representation of a miniature Stonehenge” (Fenton 1860, 33). Longworth (1983) includes it within Class E (Narrow Vertical Perforations) of his classification of perforated-wall cups along with eleven others that form a distinct regional cluster in south-eastern England (Longworth 1983, fig. 20); the example accompanying a cremation in the very richly furnished Wilsford G8 bell barrow was found within sight of Stonehenge.

Round barrows

Round barrows are the most common burial monument across Britain during the later Neolithic, Chalcolithic, and early Bronze Age. Simple bowl barrows dominate during the fourth and third millennia BC, but after 2000 BC many more were built and new kinds developed, so-called “fancy-barrows” that include disc, saucer, bell, platform, pond, kerbed, embanked, and ring forms (Darvill 2013, 144–6). The study of round barrows in Wales has benefitted hugely from the results of a major national assessment of prehistoric funerary and ritual sites carried out by the Welsh Archaeological Trusts with funding from Cadw (Britnell 2013) and a regional summary has been published for Pembrokeshire (Cook 2006). For the first time, this project provides us with a reasonably reliable picture of the distribution of these monuments which were clearly very numerous. It is possible to estimate, for example, that between 3000–4000 round barrows were built in Wales between about 3400 and 1500 BC, of which around 160 lie in Pembrokeshire (Cook 2006, 16–19 and fig. 4). This should be regarded as a minimum estimate as many have undoubtedly been destroyed through cultivation, development programmes, and natural erosion.

When calculating the number of individual burials represented within round barrows it is important to note that many barrows served as long-term cemeteries and contain multiple primary interments as well as secondary and tertiary burials (Ashbee 1960, 69–94). Even so, the relatively low number of individual burials within barrows built over two millennia is noteworthy; 1500 in Pembrokeshire is a reasonable upper estimate but spread across the period over which they were built represents less than one burial each year! Accordingly, it is necessary to take into account the unknown number of barrows that have been destroyed, and also to assume that other types of burial ritual were being used during the period in question, the evidence for which has not survived. And, of course, new discoveries of previously unrecorded sites continue to be made.

The distribution of recorded round barrows (Figure 2.31) shows a slight concentration in the north of the county around the headwaters of the main river systems. Here they are mainly represented as stone cairns while on the softer rocks that dominate in the south of the county round barrows were typically built of soil and stone.

Round barrows vary very considerably in shape and size, factors that might reflect the status and wealth of the people placed in the barrow as well as the communities that built them. Moreover, connections between south-west Wales and other parts of southern Britain can be seen in the preferred styles of round barrows built during the early second millennium BC. As well as the ubiquitous bowl barrows there are several types of fancy barrow of the kind most often seen in central southern Britain, and elaborate cairns similar to those in south-western Britain (Lynch 1972b; Woodward 2000, 16–19). On Carn Ingli, for example, a very fine saucer barrow is known, while Cnwc Barrows includes what appears to be a classic bell-barrow. Another bell-barrow is known within the Frenni Fawr cemetery. Seven pond barrows of the kind normally found in Dorset and Wiltshire have been identified near Llanfyrnach in the north of the county (Poucher 2011). Pond barrows comprise a circular depression surrounded by a bank and their presence south of the Preseli ridge is interesting. The trial excavation of one revealed a ring of possible pits or postholes around the inner face of the bank. Likewise, kerb cairns of the kind well known in south-western Britain are represented by an example on Carn Ingli (Figgis 2001, 77–91).

Round barrow cemeteries comprising clusters of three or more barrows, ring-ditches, or ring-cairns are known across the county, many of them lie on hilltops and in highly visible places within the landscape (Figure 2.31). At Crugiau Cemmaes north of Eglwysrw four large extant barrows sit on a low hill with three other barrows and two possible barrows on undulating ground to the east and west (Murphy and Murphy 2015, 37). Excavations in the nineteenth century brought to light five collared urns, of which one survives in the Ashmolean Museum in Oxford (Longworth 1984, 317, no. 2038). The Frenni Fawr cemetery has five barrows, three on the hilltop and one lower down on either side. At least two of the barrows show tell-tale signs of having been opened, and it is known that Fenton dug into at least one to reveal a stone-lined cist containing an urn (Figgis 2001, 83). Perhaps the most well-known hilltop round barrow cemetery is the group of three enormous cairns on the summit of Moel Trigarn (Baring-Gould et al. 1900, 191; Darvill 1996b, 168–9). Each is around 25m in diameter and stands 3m high; surprisingly, none appear to have been excavated. Intervisible



Figure 2.32. Aerial photograph of Dry Burrows round barrow cemetery.
[© Crown copyright: RCAHMW. D12006_1292]

to the west is the cemetery of four large barrows on Foel Cwmcerwyn, the highest peak on the Preseli ridge. Fenton, observed by a large party from Picton Castle, excavated three of these barrows in 1806. Only the western-most mound yielded evidence of a burial, an inverted urn containing cremated bone (Fenton 1853; Figgis 2001, 81). In the south of the county the finest round barrow cemetery is at Dry Burrows (Figure 2.32). This comprises seven barrows that are clearly visible from the road between Hundleton and Angle. John Fenton, son of Richard Fenton the well-known Pembrokeshire antiquary, excavated several of the barrows in October 1871 and recorded cremation burials and cinerary urns.

Round barrows containing a cist covered by a large capstone are a familiar

feature of the archaeology of south-west Wales. Three were identified by Barker (1992, 59–60) at Carn Besi (Llandyssilio), Carreg Castell y Gwynt (Llanfynydd), and Crug y Deyrn (Trelech a'r Betws). The Carn Menyn Cairn discussed in detail below is another example, and about 40km to the south-west is the large round barrow on Corston Beacon overlooking Milford Haven which may be another. It was 20m across, 1.7m high, and contained a central cist edged by six slabs and covered by a domed capstone 2.7m long that was estimated to weigh two tons (Fox 1959, 21). Within the rectangular cist measuring 2m by 0.6m was the extended inhumation of an adult male accompanied by an early bronze dagger datable to the period 2300–1900 BC discussed above.

The results of investigations at round barrows by antiquarians in the nineteenth and early twentieth centuries provide tantalizing evidence for the richness and complexity of individual sites. The most productive of Fenton's excavations was of the Beacon Tumulus, Llanrhian, which he investigated on 3 August 1805 (Fenton 1903, 19–21 and Plate 1). He uncovered a stone cist 1.3m long, 0.75m wide, and 0.6m deep, covered by a large stone 2.7m long. The side walls of the cist was formed of large slabs and filled with fine earth with specks of bone. A miniature battle-axe of spotted dolerite was found some days later in material that had apparently been thrown out of the cist (Savory 1980a, 128 and fig. 13). The implement is beautifully made and finished with an hour-glass perforation and slightly convex sides. Another Pembrokeshire antiquarian, Edward Laws, investigated a barrow on land owned by Colonel Lambton at Brownslade Burrows, in the south of the county in 1880 (Laws 1882). This barrow contained a cist within which was a rare example of a crouched inhumation.

Excavations at three barrows forming a small cemetery at Letterston in north Pembrokeshire illustrates something of the complicated development of these sites and the very common situation that final appearances bear little relation to earlier stages (Savory 1948; 1962). Work at Barrow I found a roughly circular palisade some 18m across. Oak posts had been set in a slot some 0.3m wide to a depth of about 0.4m. Within the fenced area was an oval scoop filled with quartzite and limestone blocks and slight traces of burning. No evidence of a burial was found, although a barrow constructed with alternating layers of soil, sand, and clay to a height of at least 1.2m was built within the fenced area, the palisade serving to contain the edge of the mound.

Barrow II also started life as a fenced enclosure about 16m across, constructed from closely-spaced stout oak posts each about 0.3m in diameter. Roughly in the centre was a small pit 0.3m across and 0.5m deep refilled with clay and quartzite

blocks. Slightly north-west of centre, was a grave pit 0.7m across and 0.4m deep, in which lay an inverted collared urn containing the cremated remains of an immature adult accompanied by a plano-convex flint knife. The grave had been refilled with yellow clay and the remains of the funeral pyre that had probably stood over the mouth of the grave. A low mound of yellow clay some 3m in diameter and 0.3m high covered the grave. Soon after, a more substantial mound at least 2m high was built within the fenced area, the palisade forming the limit of the mound just as at Barrow I. Three secondary burials were later dug into the mound in the south-east quadrant. All were cremations deposited within collared urns set within stone-lined cists dug into the surface of the barrow; one was accompanied by an accessory vessel described above.

Barrow III was slightly different. The primary phase here was an embanked stone circle of fairly typical form (Lynch 1972b, fig. 1; Burl 2000, 178) with an outer diameter of about 20m, a flat paved interior space about 12m across, and an entrance that opened to the east. The bank was 4m wide at the base, 1m high, built almost entirely of small quartz boulders. Around the inner edge was a ring of c.20 widely spaced tangentially set well-spaced pillars. Two kinds of pillar were represented, slabs and blocks, all seemingly of local origin. The entrance on the east side was flanked by a pair of larger orthostats. A cremation burial, originally probably contained within a collared urn had been placed in a pit between the entrance portals, but was heavily disturbed by antiquarian investigations. A second pit lay directly east of the entrance at a distance of 12m and was found to contain fragments of quartz and a light scatter of oak charcoal. Sometime later, this hitherto free-standing monument was covered in a large turf mound revetted on the outside by a stone kerb. The mound was 32m in overall diameter and stood at least 1.5m high.

Sadly, very few round barrows in south-west Wales have been excavated under modern conditions. One exception is Parc Maen, Llangolman, in the north of the county where a large cairn was associated with detached standing stones (Marshall and Murphy 1991). Under the cairn was a random arrangement of postholes, a small standing stone, and charcoal filled pits, one of which gave a radiocarbon date of 2140–1690 BC (CAR-570: 3550±70 BP). There was no evidence for a primary burial under the cairn but sherds of collared urns suggest secondary cremation burials within and around the cairn. They include one complete vessel (Figure 2.28 C and D), the fill of which gave a radiocarbon date of 2110–1620 BC (CAR-495: 3490±80 BP), and sherds representing parts of at least five other vessels. Large quantities of quartz were found in the body of the

cairn and packed between the kerb stones. The use of crushed quartz is common in ritual contexts within burial and ceremonial sites in Pembrokeshire, and along the Western Seaways generally (Darvill 2002). It was also found in the barrow at Croesmihangel 6km to the north-west which also contained multiple cremations in collared urns (Nye et al. 1983) and is discussed further below along with a consideration of work at the Carn Menyn Cairn investigated as part of the SPACES project (Darvill et al. 2012, 31). A fourth barrow at Pen y Bont, St Davids, excavated in 1976, revealed a three-phase structure: a central deposit associated with cremation burials and the remains of an urn, a small primary cairn built over the central deposit, and finally, an earthen cover-mound (Murphy 2006).

Associations between round barrows and standing stones such as that at Parc Maen have been recorded at several other sites. On Kilpaison Burrows, Rhoscrowther, in south Pembrokeshire, for example, a mound with several secondary cremations in collared urns and a cordoned urn overlay the primary cremation burial of a young woman in a pit at the foot of a 1.2m high standing stone made of local conglomerate that had perhaps originally been free-standing and probably one of a stone pair (Fox 1926b, 7–12). Similarly, at Linney Burrows nearby, a food vessel was found with an inhumation in a cist under a small round cairn that was surmounted by a standing stone (Gordon-Williams 1926). The Linney Burrows cairn is of particular interest because it stood in the low-lying area near the coast that was be-sanded before the barrow was built. A stone cist with a large dolerite capstone discovered eroding from the cliffs at the Ram's Nose promontory, Whitesands Bay, in 2011 might be the remains of another burial of this period beside the coast (Meek 2013).

Overall, excavations at round barrows in Pembrokeshire emphasizes the complexity of ritual practices, the range of grave goods represented, and the multi-period construction and use of most sites. It is a pattern that bears comparison with evidence from elsewhere in Britain, but what is now needed is a modern excavation programme that provides a strong chronological and environmental context for these monuments across the region.

Enclosed cremation cemeteries

The deposition of cremations or inhumations under a round barrow was not the only burial custom in early Bronze Age Pembrokeshire: some burials are found within earthwork enclosures of various sorts (Figure 2.31). Ring cairns

comprising low, circular stony banks typically defining a flat central area up to 20m across are frequently recorded in field surveys, as for example at Carn Ingli Common in north Pembrokeshire. Some ring-cairns remained open, but others were later covered by round barrows as with the example at Letterston III described above. Ring-ditches are similar, but have a ditch defining the enclosure rather than a bank. Until recently none had been excavated in Pembrokeshire yet similar sites elsewhere in Wales are associated with burials, normally cremations (Lynch 1972b). In 2006 archaeological excavations undertaken during the construction of the South Wales Gas Pipeline revealed numerous Bronze Age cremations within a ring-ditch at Steynton near Milford Haven (Barber and Pannett 2006, 93–94). The ring-ditch enclosed an area about 12m across and contained burials representing more than 20 individuals including adults and children. Many of the burials were contained with food vessels or collared urns and have been dated to provide a secure chronological sequence in a way that is unique in Pembrokeshire and rare to Britain as a whole (Barber et al. 2014):

- A tripartite food vessel in a pit with a cremation and a date of 2040–1880 BC (SUERC 54672: 3605±29 BP). The cremated bones from the burial were of an adult over 36, an adolescent, two juveniles and an infant-possibly a family group.
- A tripartite collared urn from a pit with a cremation and dates of 2030–1880 BC and 1960–1770 BC (SUERC-54674: 3549±29 BP and SUERC-54678: 3588±29 BP)
- A tripartite collared urn with a cremation and dates of 1900–1690 BC and 1940–1750 BC (SUERC 54670: 3484±29 BP and SUERC 54671: 3522±29 BP)
- A tripartite collared urn with a cremation and dates of 1890–1630 BC (SUERC 54669: 3470±29 BP) and 1873–1630 BC (SUERC-54668: 3416±29 BP).

A second ring-ditch about 30m in diameter was recorded nearby, also associated with early Bronze Age pottery. And a rather similar cremation cemetery was excavated during construction of the A477 St Clears to Red Roses road improvement just over the border in Carmarthenshire (Barber et al. in prep.). This site produced at least 78 cremation burials associated with Bronze Age pottery, mainly collared urns.

Burnt mounds

Archaeologically, burnt mounds comprise oval or crescent-shaped accumulations of heavily burnt stones mixed with charcoal and soil. Typically they occur adjacent to water courses, sometimes in small clusters, and upon excavation are found to comprise a hearth or trough surrounded by a mass of discarded heat-shattered stone (Barfield and Hodder 1987; Hodder and Barfield 1991). Over 500 burnt mounds have now been found in Wales, principally in the west of the country from Pembrokeshire to Anglesey (Manning and Crane 1999; Williams 1990). More than 20 have been excavated in Pembrokeshire in recent years, including a dozen along the line of the South Wales Gas Pipeline (Barber et al. 2014, 94–96; Hart et al. 2014). Radiocarbon dates show that the earliest were constructed and used in the mid third millennium BC, although the majority belong to the first half of the second millennium BC. This fits fairly comfortably with the widespread use of similar sites, known as *fulacht fiadh* in Ireland, although still earlier examples dating back into the fourth millennium suggest the geographical origins of the tradition may lie on the western side of the Irish Sea (Hawkes 2014). As Figure 2.33 shows, recorded burnt mounds are mainly found in low-lying areas and river valleys in the south of the county.

One of the first burnt mounds to be investigated in Pembrokeshire was at Carne near Fishguard (James 1986). Charcoal from the burnt layer within this mound yielded an early radiocarbon date of 2460–2030 BC (CAR-292: 3790±70 BP) whilst the latest dump of charcoal at another nearby site showed usage down to 1890–1520 BC (CAR-496: 3400±70 BP). Another typical burnt mound was excavated at Robeston Wathen in south Pembrokeshire as part of the A40 Penblewin to Slebech Park road improvement scheme (Schlee 2013). It was sited by a stream, oval in plan, 18m by 13m and 1m thick, and formed of heat-shattered locally occurring gritstones and sandstones, mixed with humic material and charcoal. There was a wooden trough adjacent to the stream and a pit filled with charcoal and sealed with an arrangement of flat stones. Samples of burnt mound material from the mound provided radiocarbon dates of 1436–1266 BC (SUERC-28108: 3100±35 BP) and 1207–976 BC (SUERC-28109: 2890± 35BP) placing the site late in the tradition of building and using such structures, broadly contemporary with the settlement site at Canaston Bridge discussed below. Also in the south of the county a pair of burnt mounds, one either side of a stream, was found during construction works for the Bulford

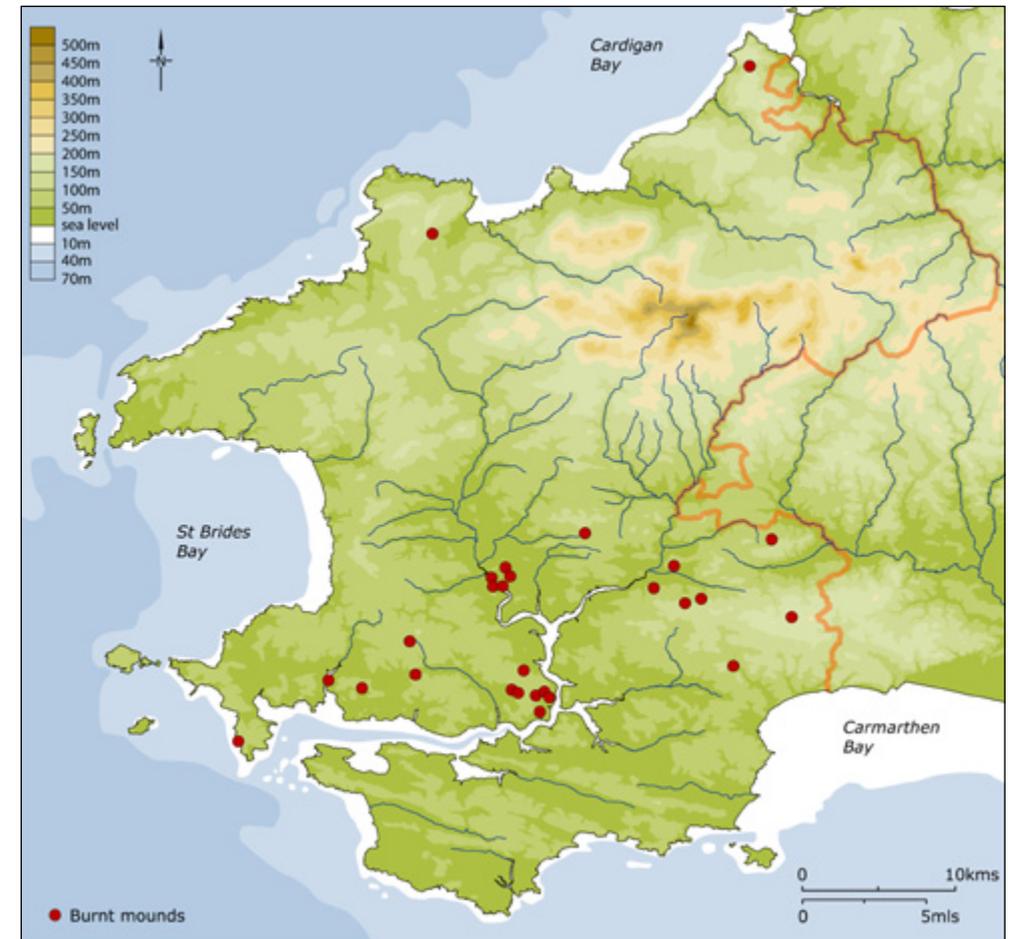


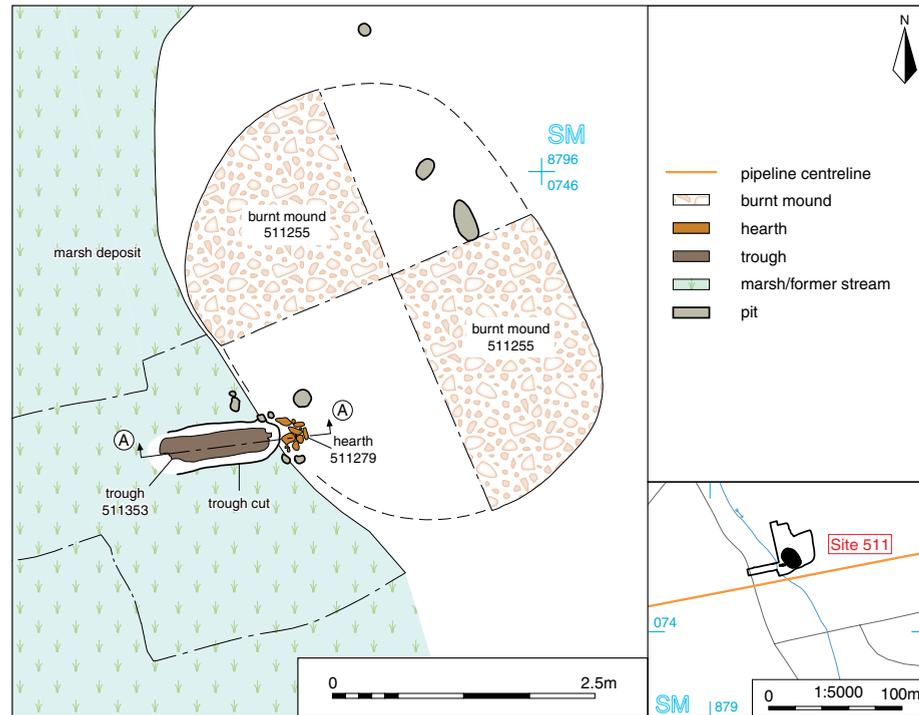
Figure 2.33. Distribution of recorded burnt mounds in Pembrokeshire.
[Source: Dyfed Historic Environment Record].

Road Bypass (Enright 2015). A small gully linked the trough within the western mound with the adjacent stream, suggesting that here a leat supplied the trough with fresh water.

Most of the burnt mounds found along the route of the South Wales Gas Pipeline occurred singly alongside current or former water-courses or in marshy areas, largely because the pipeline corridor cut across river valleys at right-angles. Where investigations ran parallel to a watercourse multiple burnt mounds were found at intervals along the riverbank (Barber et al. 2014, 94–96; Hart et al.



A



B

2014). The best preserved example that was excavated was at Upper Neeston Farm, Herbrandston (Barber et al. 2014. Figure 2.34). The oval mound covered an area 17m x 13m and overlay a stone-built hearth. A hollowed-out oak tree 4.2m long was adjacent to the hearth which had been used as a trough along the stream bank. A radiocarbon date of 1500–1320 BC (SUERC-55517: 3157±30 BP) was obtained from the mound and the oak trough was dated to 1530–1300 BC (Beta-218656: 3160±50 BP).

There has been much discussion of the role and purpose of burnt mounds in north-west Europe (Barfield and Hodder 1987; Drisceoil 1988; Hodder and Barfield 1991). The basic archaeological evidence of pits, hearths, troughs, and burnt stone indicates that water was being heated up for some purpose. Experiments have shown the suitability of these sites as cooking places. In Ireland Michael O’Kelly (1954) showed that water in a 450-litre trough could be brought to the boil in 30 minutes using hot stones. A similar experiment at Carne near Fishguard with a smaller trough demonstrated that around 70kg of stone might have been used for each boiling (James 1986). Another theory is that the burnt mounds may have been used as saunas with the stones being heated in a fire and the water from the trough poured over them to generate steam inside a tent, an interpretation sometimes extended to include the use of hallucinogens (Barfield and Hodder 1987). Brewing places, perhaps for beer, is another theory (Wilkins 2011; Mullally 2012). Whatever their use, and they may not all have been used in exactly the same way over the lifespan of the tradition, these mounds provide good evidence for settlement in Pembrokeshire at a time when other structures are scarce. The fact that many were in use for centuries serves to demonstrate continuity in the pattern of settlement and land-use in the neighbourhood.

Ceremonial monuments

Ceremonial monuments were important in the lives of these early Bronze Age communities, especially those built using upright stones or posts either arranged in circles or oval, as pairs, or in lines. Their currency and use extends often well

Figure 2.34. Burnt mound at Upper Neeston (Site 551), Herbrandston. A. View of the burnt mound, wooden trough, and hearth during excavation, looking northwest. B. Plan of the excavated features. [After Hart et al. 2014: figs. 2 and 3]

into the second millennium BC, but their origins lie firmly in the third millennium BC if not earlier. Several distinct classes of site can be recognized although the boundaries between them are notoriously blurred. In some cases these structures seem to have formed components of extensive ceremonial complexes spaced at intervals across the landscape, most notably around Glandy Cross on the Pembrokeshire / Carmarthenshire border (Kirk and Williams 2000).

Stone Circles

In his classic work on the stone circles of Britain, Aubrey Burl noted over 1300 examples across Britain and Ireland, of which Wales accounts for about six per cent, around 80 rings in four major areas: Pembrokeshire; Merioneth; Mynydd Epynt in central Wales; and the north coast of Gwynedd (Burl 2000, 175–6). Cook (2006, 15–16 and fig. 3) records eight probable and seven possible stone circles in Pembrokeshire but there are several records of circles being destroyed in previous centuries and more may once have existed (Done Bushell 1911; Barker 1992, 51). W F Grimes compiled a gazetteer of stone circles in Wales with detailed descriptions of the Pembrokeshire monuments (Grimes 1963). As Figure 2.35 shows, the main distribution of recorded examples is along the south side of the Preseli ridge in the north of the county, not far from the recognized ceremonial centre on the Pembrokeshire / Carmarthenshire border at Glandy Cross where the henge at Meini Gwyr includes a stone circle within the embanked area.

Along the southern slopes of the Preseli Hills were at least four stone circles and associated monuments discussed by Done Bushell (1911), but now rather depleted. The best known site in this group is the Gors Fawr circle which lies near the southern edge of the Gors Fawr bog. Although low lying (about 190m OD), the position of the site affords good views northwards to the Preseli Hills. Views south take in the low ridge on which stands the cluster of monuments around Glandy Cross. A fine example of a stone pair lies 400m away to the north-north-east, the two stones, both dolerites, being 14m apart and standing 1.65m and 1.70m high respectively. When viewed from the south-west looking north-east, they frame the outcrops at Carn Menyn. The stone pair, like the stone circle, lies on the modern edge of Gors Fawr, the wetland boundary being a few metres away from both monuments. How extensive this bog would have been at the time the monuments were built and used is not currently known (Darvill and Wainwright 2003b, 18–22).

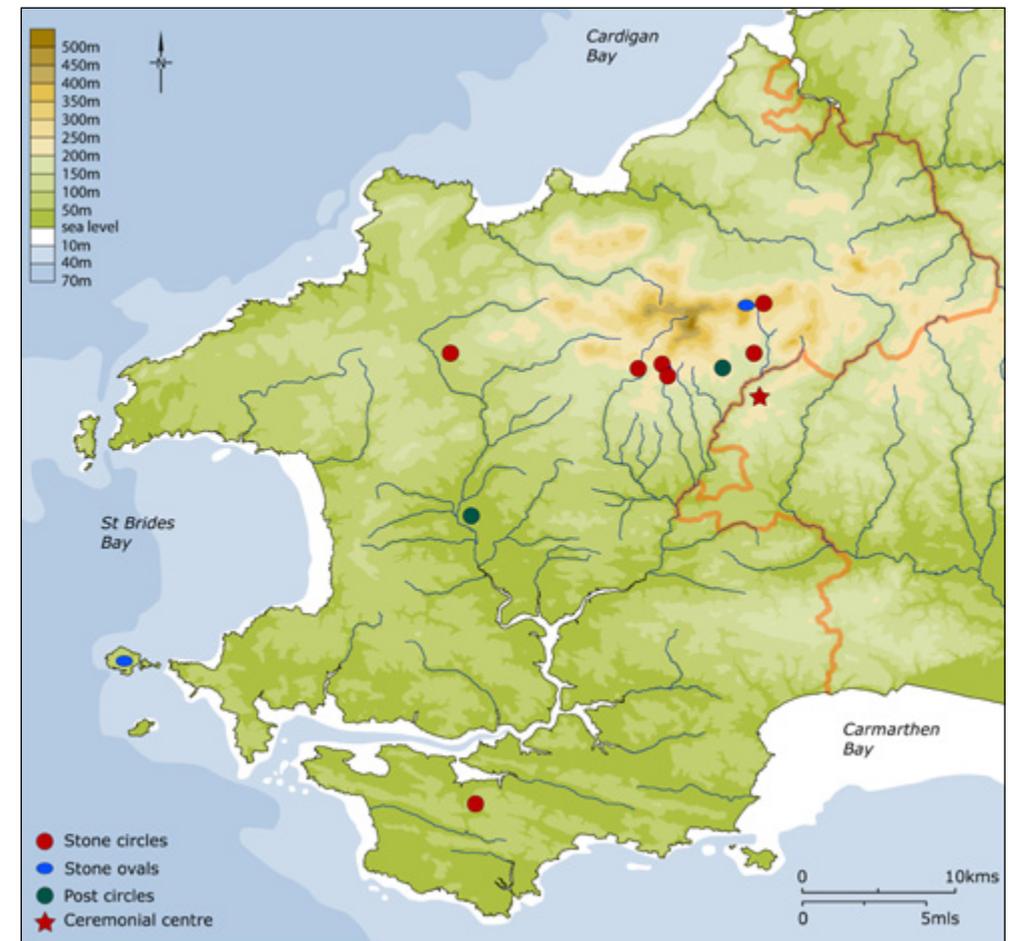


Figure 2.35. Distribution of recorded stone circles, stone ovals, and post circles in Pembrokeshire. [Source: Dyfed Historic Environment Record].

There are surprisingly few references to Gors Fawr in the antiquarian literature before the mid-nineteenth century, although there is abundant later coverage in archaeological studies and popular accounts of the archaeology of the region. Its fine preservation and atmospheric setting combine to make the site feel rather special, and in the course of a year several hundred visitors explore the circle and its surroundings. The stone circle, about 22m across, comprises an almost perfect ring of sixteen pillars (Figure 2.3). The pillars themselves are well weathered boulders and slabs of dolerite, at least eight of which are spotted dolerite similar



Figure 2.36. View of the Bedd Arthur Stone Oval, looking east towards Carn Menyn. [Photograph by Timothy Darvill. Copyright reserved].

to that which outcrops on Carn Menyn. The pillars range in height from 0.9m down to 0.45m and seem to be crudely graded in height from the tallest in the south-east to the lowest in the north-west. There is no obvious entrance into the ring and the pillars are fairly evenly spaced except in the south-west quadrant where a large, radially set slab breaks the overall pattern. Inside the circle are two large and three small earthfast stones protruding through the turf.

Magnetometry and resistivity surveys in 2002 showed no evidence for an enclosing bank or ditch, and the current view is that Gors Fawr is a freestanding stone circle. In this it resembles the ruinous stone circle at Dyffryn Syfynwy west of the Afon Syfynwy which was planned and covered by a geophysical survey as

part of the SPACES project in 2003 (Darvill et al. 2003b, 4–6 and fig. 2). This circle may originally have comprised 17 or 18 stones within which is the remains of a mound or cairn comprised of smallish stones including river cobbles.

Two sites on the higher ground at the east end of the Preseli ridge are slightly different but connect with other stone circles in the county. The first is at Bedd Arthur on the south side of the ridge running along the spine of the Preseli Hills, alongside an ancient drove-way that runs from Cwm Gwaun in the west to Crymych in the east. It comprises an oval-shaped setting of 17 bluestone pillars defining an area approximately 20m by 9m, with the long axis aligned broadly north east/ south west (Figure 2.36). At the north-eastern end is a shallow depression that looks as if it might result from the collapse or robbing of an additional stone pillar; a loose block of bluestone lies within the pit. In the centre is a similar depression about 1m across, again perhaps indicating the former position of a stone. The remaining stones stand between 0.4m and 1.0m high and seem to be slabs and boulders of the sort that can be found scattered across the landscape in this part of the Preseli Hills. There is slight evidence for grading with the tallest stones at the south-west end. Surveys in 2002 as part of the SPACES project show that the monument was built on a levelled platform or terrace cut into the slope (Darvill and Wainwright 2003b, 13–18). A similar oval setting of stones enclosing an area 16m by 8m is known as the Old Churchyard and stands near the eastern end of Skomer Island (Evans 1990; but cf. Barker et al. 2014, 295–6). Bedd Arthur and the Old Churchyard are oval settings, not circles, and represent a type of monument that can be seen around the Irish Sea Basin and beyond. The best known is the oval setting of 24 bluestones from Preseli in the centre of Stonehenge, Wiltshire. The axial alignment of the Stonehenge Bluestone Oval is the same as that at Bedd Arthur and there are a number of other structural similarities between them, including the presence of an irregular stone at the north-eastern end (Darvill and Wainwright 2003b, fig. 15).

The second is at the Carn Menyn Cairn where excavations revealed a small embanked stone circle about 15m in diameter built within an earlier henge monument (Darvill et al. 2012a, 27–31). As discussed further below, the monument was sited at the head of a substantial stream and consisted of a low bank into which were set pairs of spotted dolerite pillars. Similar embanked stone circles are probably widespread across the region but they are hard to see because they are covered by later monuments, as with the structure at Letterston III discussed above (Savory 1962).

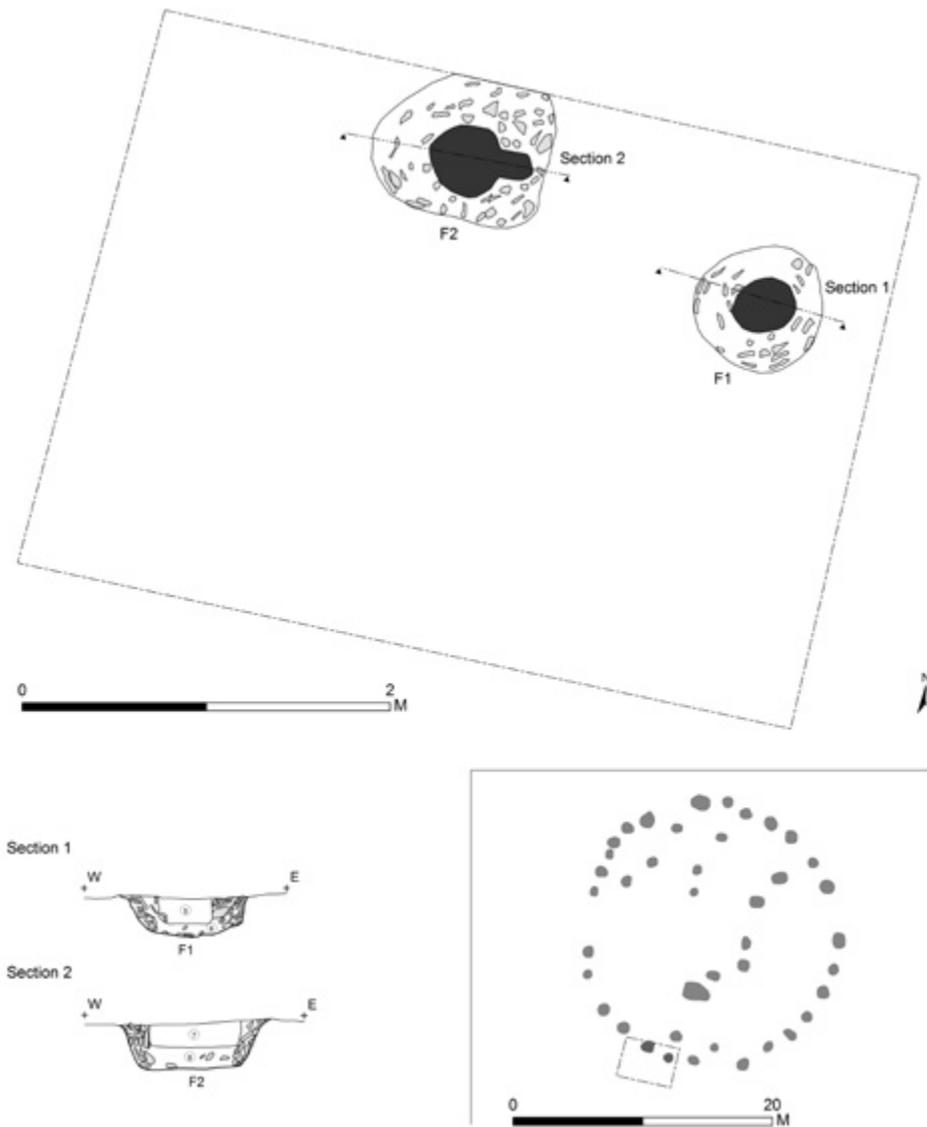


Figure 2.37. Plan of the Cottesmore post circle. [After Darvill et al. 2012: fig. 11]

Post circles

Post circles represent a timber version of the more familiar stone circles, and occur as single and multiple rings (Darvill 2010, 182–3). Two examples are known in Pembrokeshire (Figure 2.35). A circular pattern of cropmarks suggesting at least 28 pits or postholes in a ring about 25m in diameter was discovered by Chris Musson through aerial photography in 1990 on a terrace above the Western Cleddau on Cottesmore Farm, Withybush (Driver 2007, 164). A high resolution geophysical survey was undertaken in 2011 as part of the SPACES project followed by a trial trench which excavated two of the circular features (Figure 2.37). These proved to be post sockets and produced a radiocarbon determination on oak charcoal of 1884–1669 BC (UBA-18775: 3448±37 BP). The Cottesmore Farm Circle lies towards the larger end of the spectrum of such sites in Britain and Ireland (Gibson 1998). Locally, comparable sites include post-group X at Parc Maen, Llangolman (Marshall and Murphy 1991, 37 and fig. 7) comprising 24 postholes forming a circle roughly 9m in diameter. Mention may also be made of the pit/post circles at Yr Allor and Pantymenyn within the Glandy Cross ceremonial centre just outside the county in Carmarthenshire (Kirk and Williams 2000). Further examples of rather ephemeral monuments undoubtedly remain to be found across the region.

Standing Stones

Standing stones are numerous in Pembrokeshire, many of them associated with “garreg” or “carreg” or “maen” placenames. Cook (2006, 11–12) records nearly 100 certain examples and another 60 possible cases across the county. Without excavation there can be no guarantee that the stone was originally free-standing rather than part of another structure, and the dating of many is problematic. Some are prehistoric, others may be modern rubbing stones erected by farmers for their livestock. Highly visible features in the landscape, standing stones have been reviewed by Lewis (1996) and Williams (1988a) as well as Cook (2006), and a small number have been excavated. A rich folklore has gathered around some of them and Lewis (1996) points out that more than might be expected bear the name Harold, an indication that they commemorate the sites of victories over the Welsh. When excavated, the area around standing stones are usually found to be rich in other archaeological features that include pits, postholes, burials, and round barrows.

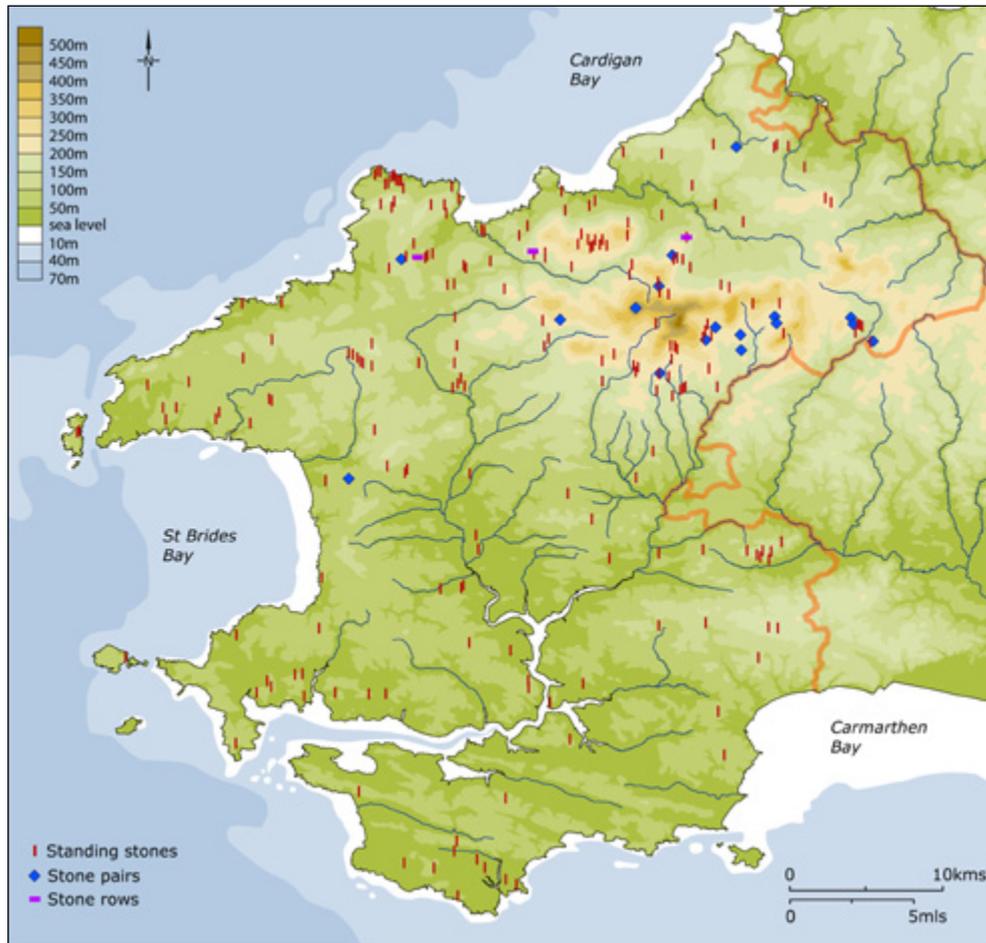
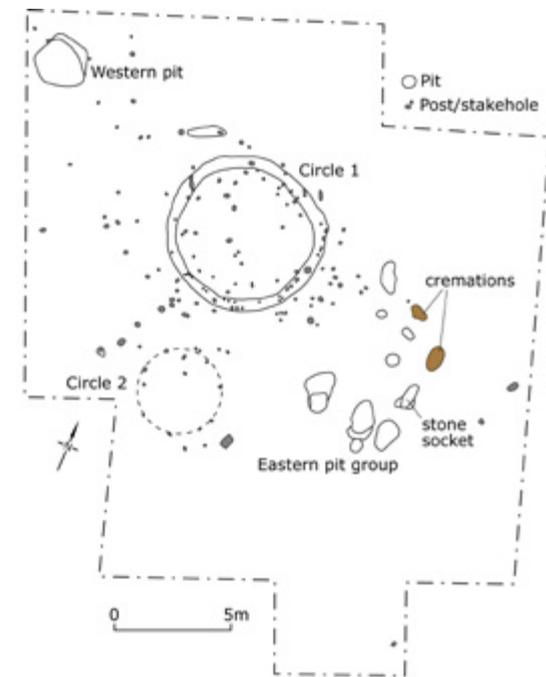


Fig. 2.38. Distribution of standing stones, stone pairs, and stone rows. [Source: Dyfed Historic Environment Record].



A



B

Figure 2.39. Standing stones and stone pairs. A. Plan of excavated features at Longstone Field, St Ishmaels. B. Plan of excavated features at Rhos-y-Clegyrn, St Nicholas. [After: A. Williams 1989: fig. 4; B: Lewis 1974: fig. 3].

Most standing stones are between 2m and 2.5m high. Some have been deliberately shaped, such as the Maen-y-Parc Stone, Llangolman, and some, such as the Sampson's Farm Stone, St Petroc's, carry rock-art on one or more face. In general, standing stones are concentrated in the north and west of the county (Figure 2.38), particularly in Preseli where many are sited around streams feeding the Eastern Cleddau.

As noted earlier in this chapter, standing stones first began to be set up in the early fourth millennium BC, although the majority probably date to the third and early second millennia BC. They represent one of the longest-lived traditions in western Britain. Recent excavations below Carn Menyn as part of the SPACES project investigated a shallow socket for a standing stone (Darvill and Wainwright 2014, 1106–1107). Oak charcoal from the fill of the socket provided three radiocarbon dates of 2900–2640 BC (UBA-22345: 4188±34 BP); 2350–2060 BC (UBA-23208: 3795±34 BP) and 2270–2020 BC (UBA-22342: 3742±32 BP). Assuming the first is from residual charcoal, the two later dates are statistically consistent and give a combined date of 2280–2040 BC. Nearby, at the west end of Carn Menyn ridge, the excavation of a cairn revealed the socket for another standing stone. It had been cut by the ditch of a later circular enclosure which was in turn succeeded by an embanked stone circle and the cairn (Darvill et al. 2012a, 31).

In October 2011 the Bedd Morris standing stone on Carn Ingli Common was damaged by a vehicle that broke it off at ground level. A small scale excavation in 2012 recovered the snapped-off base of the stone which was repaired and reset into its original socket (Crane 2013). Several stone flakes resulting from dressing the dolerite upright along with hammerstones that might have been used for the task were found in the fill of the socket. Two radiocarbon dates were obtained from charcoal in the socket: 2430–2415 BC (SUERC-44262: 3820±25 BP) and 1735–1535 BC (SUERC-44258: 3350±25 BP). They are statistically inconsistent and the earlier presumably relates to residual material.

The largest standing stone in Pembrokeshire is the Mabesgate Stone, St Ishmaels, 2.4m tall and made of Old Red Sandstone. Almost as large is the Longstone in the same parish which was knocked over during ploughing in 1976 and its socket and environs excavated in 1979 (Williams 1989). It was found that the stone lay on the south-eastern side of a rectangular arrangement of pits that defined a space which was open to the north-west and orientated towards a large scoop or pit, the western pit (Figure 2.39 A). A radiocarbon date

of 1940–1420 BC (CAR-315: 3305±70 BP) is based on oak charcoal from the western pit. North-west of the stone were traces of a small round barrow defined by a ring-ditch (Circle 1) together with numerous stakeholes.

Standing stones have sometimes been recorded when excavating burial mounds. At Parc Maen, Llangolman, for example, a small standing stone predated the construction of the cairn (Marshall and Murphy 1991). At Kilpaison Burrows, Rhoscrowther in south Pembrokeshire, the primary cremation burial was in a pit at the foot of an upright stone 1.2m high, probably one of a pair that might originally have been free-standing for a time before being covered by a round barrow (Fox 1926b, 7–12; Savory 1980, 25 and fig. 2). And at Linney Burrows in south Pembrokeshire, a food vessel with an inhumation in a cist was found under a small, round cairn which is said to have been surmounted by a standing stone (Savory 1980a, 30 and 141).

Whether standing stones were set up to mark the position of funerary areas, or whether burials and deposits in pits were placed around pre-existing stones because they were already recognized place-markers in the landscape is far from clear. Recent observations at the Harold Stone on Skomer Island suggests that some may embody solstitial alignments (Barker et al. 2015), while it has long been recognized that some standing stones probably acted as way-markers for travellers using established long-distance paths into or through the uplands (Gresham and Irvine 1963).

Stone pairs

Pairs of relatively close-set standing stones form another distinct component of monumental landscapes in Pembrokeshire. Cook (2006, 15) lists 13 sites, of which 11 are secure examples (Figure 2.38). Ten are located exclusively in the Preseli Hills. Their structure is consistent in that one stone of the pair is always larger than the other and is frequently square or rounded-topped, whilst the other stone is slighter and has a pointed top.

As part of the SPACES project four stone pairs were planned and subjected to geophysical survey (Darvill et al. 2003, 3–4). All stand on a boundary between local ecozones, often raised dry land to one side and low-lying wetland or a valley-land to the other. As such the pairs act almost like gateways between distinct sectors of the landscape.

At Cerrig Meibion Arthur, Mynachlog-ddu, a pair of tall spotted dolerite



Figure 2.40. View of the stone pair at Cerrig Meibion Arthur, Mynachlog-ddu. [Photograph by Timothy Darvill. Copyright reserved].

pillars were set on a gentle south-west facing slope, the stones stand 3.9m apart on a west-north-west to east-south-east alignment (Figure 2.40). The larger eastern stone is 2.6m high with an uneven squared top; the western stone is 2.2m high and more slender. The pair appears to be set in the centre of a low, stony mound or platform about 0.35m high and 20m by 14m across. At Gors Fawr, Mynachlog-ddu, the stone pair comprises spotted dolerite pillars about 134m north-east of the Gors Fawr Stone Circle. The stones are 15.3m apart on a west-south-west to north-north-east alignment. The western stone is block-like in form, 1.7m high with a slightly pointed top. The eastern stone stands 1.7m high and has a markedly pointed top. A long, low stony mound stands between the stones and the edge of the bog. Both stones are surrounded by hollows caused by livestock and visitors. At Mynachlog-ddu the two close-set stone pillars on a gentle south-east facing slope to the south-west of Nant Ffynnon Beswch overlooking the Cors Tewgyll bog. The stones are 2.4m apart on a roughly north to south alignment. The northern stone is 1.45m high, roughly square in cross-section; the southern stone is 1.96m high and roughly triangular in cross-section. The impression was gained that both might have been deliberately shaped. And at Waun Llwyd, Mynachlog-ddu, a pair of spotted dolerite pillars lie on a gentle north-west facing slope immediately north of Waun Cleddau. The stones are 7.8m apart on a south-west to north-east alignment. The southern stone is 2.2m high, roughly square in cross-section; the northern stone is 2.3m high, slab-like in cross section with a pointed top, perhaps shaped. A single cup-mark 70mm in diameter and 10mm deep was noted on the north stone's east face about 0.75m above the ground.

To the west of Preseli the single remaining stone at Rhos-y-clegyrn, St Nicholas, was originally one of a pair; it is the only stone pair to have been excavated in the county (Lewis 1974, fig. 2.2). Overlying the extensive occupation site discussed above was a thin soil profile that formed before the foundation of a complex of structures that were more extensive than the area excavated (Figure 2.39 B). Some 70m to the north-east was a stone ring while a possible embanked stone circle lay 15m to the south-west. The monoliths forming the stone pair lay about 11m apart and perpetuated the south-west-north-east axis represented in the complex as a whole. To the north was an oval or egg-shaped spread of rough cobbling within which were traces of straight and curved walling, hollow stone rings, four pits, and an arc of stakeholes. In the centre of the cobbling a partial cremation had been deposited on the old ground surface. Sherds from at least two collared urns or food vessels, fragments of a slate disc, and tools and waste of flint, chert and rhyolite were also scattered across the area. Several phases of activity were represented perhaps indicating periodic visits to the site.

Stone pairs are rare in the south of the county although recent surveys on Skomer Island have revealed the presence of a possible example near the Wick on the south-western part of the island (Barker et al. 2012; 2015).

Stone rows

Rows of standing stones are rare in Pembrokeshire. Cook (2006) lists six sites of which three are good examples (Figure 2.38). The most convincing is Parc y Meirw, Llanllawer, near Fishguard (RCHAMW 1925, 173; Rees 1992, 42–3; Burl 1993, 240. Figure 2.2). Four stones varying from 2m to 2.7m high survive in a modern hedge-bank, the eastern two acting as field gate-posts. Originally, eight stones were visible before the enclosure of the fields in the nineteenth century. The row is roughly orientated north-east to south-west and is some 45m long. Dating stone rows is notoriously difficult, but a recent study of the Cut Hill row on Dartmoor suggests that this example was built in the mid fourth millennium BC (Fyfe and Greeves 2010). Mention may also be made of the fact that standing stones, stone pairs, and stone rows can be hard to distinguish when incomplete, and without excavation the classification of above-ground remains should always be considered tentative.

Rock-art and iconoclasm

No single grave style rock-art typical of the early second millennium BC (Simpson and Thawley 1973) has been recognized in Pembrokeshire to date. However, there is evidence for continued interest in earlier cup-and-ring styles, although in exactly what terms remains slightly unclear. The presence of cup-marks on the structural components of a few stone monuments is noteworthy. For example, on the north stone in the stone pair at Waun Llwyd and on one of the uprights in the stone row at Parc y Meirw, although in some or all cases the motifs might have been present on the stones before they were incorporated into the new structures.

There is also evidence for the removal of motifs, and perhaps whole panels, with flakes detached from components of monuments and earthfast boulders.



Figure 2.41. Cup-marked boulder set in a low stone platform north of Carn Alw. A single remaining cup-mark can be seen above the scar left by the removal of large flake that probably carried further rock art. [Photograph by Timothy Darvill. Copyright reserved].



Figure 2.42. The Dan y Garn cup-marked stone showing two cup-marks on a flake of rock presumable detached from a natural outcrop or boulder. Scale totals 0.3m. [Photograph by Timothy Darvill. Copyright reserved].

The large decorated boulder surrounded by a low stone platform near Carn Alw on the north side of the Preseli ridge, briefly discussed above, has had part of the panel removed (Figure 2.41). The product of such a removal, although not the actual flake from the Carn Alw boulder, is represented by what might be described as a mobiliary panel with two cup-marks found in 2002 in the course of fieldwork by the SPACES project (Darvill and Wainwright 2003a). This small stone, approximately 250mm by 180mm by 90mm thick (Figure 2.42), lay in disturbed soil on the verge of a road west of Dan-y-Garn in Preseli. It is a large flake, its broken edge cutting through one of the cup-marks showing that its detachment from the parent body must post-date the ornamentation. The exact source cannot be determined although it seems likely to have been removed from a decorated stone, perhaps an earthfast boulder, natural outcrop, or a component of a larger monument either as a way of transporting the decorated stone for use in another context or as an act of iconoclasm.

Similar small broken pieces of cup-marked stone have been found across Britain and serve to raise important questions about the way monuments were perceived and treated by people in the past. The demolition of the standing stone on top of Carn Menyn has already been described, and when examined closely it is clear that the components of other stone monuments have had flakes broken off them. To date, the focus of much research has been on the removal and transportation of large blocks of stone. It is time, perhaps, for attention to be directed to the potential significance of removing and relocating smaller fragments as talismans given the large quantity of lithic debris at monuments such as Stonehenge which cannot be attributed to the structural stones.

The continuing importance of stone as a significant material through the later third and second millennia BC is nowhere better represented than through the wealth of evidence on and around the Preseli Hills of north Pembrokeshire. The importance and meaning of this material formed a critical strand in long-distance connections to the Wessex area of central southern England, while its incorporation into the great stone circle at Stonehenge places it at the heart of understanding prehistory across a vast tract of north-west Europe.

PRESELI AND STONEHENGE 2500–1600 BC

Stonehenge is the most famous and visited prehistoric site in Britain. As Pentre Ifan is to Pembrokeshire and Wales, so Stonehenge is to Wessex and England. The famous image is the huge sarsen trilithons, but within this structure are about 30 smaller stones of several different rock types that can be easily missed – especially from behind the rope barrier which separate the visitors from their heritage icon! These smaller stones are the so-called “bluestones”: blocks of igneous rocks derived from outcrops on and around Preseli.

Originally there may have been over 80 bluestones at Stonehenge, some up to 4 tons in weight. How they came to be there, and why, are hotly debated topics in British archaeology and represent the best known contribution that Pembrokeshire has made to the story of Britain’s heritage. Many people come to Pembrokeshire to visit the source of the bluestones and it is worth dwelling on the research and ideas which surround them as well as the landscape from which they were taken.

Preseli: an upland ridge

The Preseli Hills form an elongated ridge ranged roughly east to west across north Pembrokeshire with peaks at Foel Feddau (467m), Foel Eryr (468m), Cwm Cerwyn (536m), and Carn Menyn (365m). From these spots the views are quite breath-taking. The Black Mountain is visible in the east, as too the Bristol Channel, Lundy, and Dunkery Beacon to the south. To the west, are the hillforts of Garn Fawr and St David’s Head, beyond which can be seen the Wicklow Hills of eastern Ireland. To the north Bardsey Island, the Lleyn Peninsula, and the peaks of Snowdonia are visible. The Eastern Cleddau has its source below Carn Menyn at Blaen Cleddau in Mynachlog-ddu. It meets the Western Cleddau at Picton Point downstream to form the Aberdaugleddau which then flows south into the Milford Haven estuary. Springs on the north side of the ridge mainly feed Bryn Berian and the River Nanhyfer.

In August 1485 Henry Tudor travelled the old drover’s road from Haverfordwest to Cardigan on route to the battlefield at Bosworth. The Pembroke-born son of the late Earl of Richmond had landed near Dale and was soon to be crowned Henry VII. The route he took climbs the Preseli Hills at Bwlch Gwynt, the modern road being flanked by ancient hollow-ways, from whence a muddy track, also a drover’s road, leads east towards the summits of the Preseli Hills. A century later, around 1600, George Owen, the Elizabethan topographer and historian, said of Cwm Cerwyn that it “is the first and chiefest landmark that mariners do make at sea coming from the south or south-west and is their chief and sure mark whereby they make for Milford and it appears to them at first sight a round black hill, and after they first make this land they sail twelve or sixteen hours before they come to the sight of any other land” (Miles 1994, 107).

Despite their beauty and charm the Preseli ridge and the surroundings lands are hard and harsh. The report of the Land Utilisation Survey of Britain in the 1930s speaks of Preseli in uncompromising tones: “This moorland region is characterised by lower average temperatures, by greater liability to frost with occasional snow in winter, by diminished sunshine at all seasons and by excessive rainfall (45 inches to over 60 inches). The soils are derived, *in situ*, almost wholly from disintegrated slaty shales and are of an acid nature. Gradients are steep, particularly on the southern and northern slopes. On the flat hill tops, and on the benches throughout the area, there are depressions with considerable deposits of peat which is cut and used for fuel by the local inhabitants” (Stamp 1939, 152).

George Owen takes a more generous view from his vantage point over three centuries earlier, noting that “The commodity of the mountain is great, for it yields plenty of good grass and is full of sweet springs of water. It yields also store of fuel for the inhabitants adjoining, for most of the mountain yields good peat and turf” (Miles 1994, 106). Cattle, sheep, butter, and cheese were produced and a drover’s road crossed the Preseli Hills from west to east marked by boundary stones – the route for transporting cattle out of Pembrokeshire towards the Midlands and London (Colyer 1976). Even today, most of this upland region is common land with actively exercised rights of common by adjacent foothill farms where Welsh is the first and preferred language, tradition runs deep, personal freedoms are fiercely defended, and poetry and music are highly regarded accomplishments (see for example Wyn 2008).

The Preseli Hills are mostly composed of slates which were formed during the Ordovician Period. The special geological feature of the area is the assemblage of landforms that occur particularly in the area around Carn Meini, where there are a large number of rocky tors or carns (Figure 2.43). The hillsides are covered with a patchwork of different vegetation types which include a number of rare plants that provide the reason for its status as a Site of Special Scientific Interest (SSSI). The open, unimproved, upland also contains a concentration of archaeological sites from the Neolithic through to the Iron Age and Romano-British periods. The region has therefore been included in the advisory, non-statutory *Register of Landscapes of Outstanding Historic Interest in Wales* (Cadw 1998).

Although the hills are mainly composed of shales and mudstones of the Llanvirn Beds, the carns represent a series of volcanic intrusions exposed in narrow strips running from north-east to south-west. The volcanic rocks are dolerites and diorites; their emergence also created a series of metamorphic rocks around and about as the mudstones and shales were turned into meta-mudstone and slate as a result of the great heat and geomorphic pressures. Near the east end of the ridge, in the Carn Meini area, the hard, intrusive dolerites project through the softer rocks around them as prominent carns, now cracked and weathered along the natural fracture planes. Columns of dolerite litter the slopes and may be prised off from the carns with little effort. The most distinctive characteristic



Figure 2.43. Aerial photograph of the eastern Preseli Ridge looking west in winter 1999. In the foreground is Moel Trigarn with its hilltop barrow cemetery and enclosure earthworks. Carn Menyn is centre left, Carn Goedog upper right, and Foel Feddau dusted in snow in the far distance. [© Crown copyright: RCAHMW. 99-CS-2325 D12006_1297]

of some, but not all, dolerites from the Carn Meini region is a spotted texture with individual spots up to 12mm across (see Evans 1945; Bevins et al. 1989). The “spots” are comprised principally of a complex intergrowth of quartz and plagioclase feldspar, and are thought to be the result of low temperature metamorphism. These spots were crucial in the identification by Thomas (1923) of these dolerite columns as the source of the majority of the Stonehenge “bluestones”. George Owen writing in about 1600 was the first to recognise this phenomenon on Preseli, recording that “upon the mountain of Preseli there are many loose stones found which are very hard and smooth of grit and have in divers of them many white sparks and veins” (Miles 1994, 85). He goes on to describe a soft black stone found in a brook on Preseli which farmers used to mark their sheep with a blue colouration. They called it *nod glas* which in translation is blue raddle or blue marking stone. Bluestone is now used as a generic term for the various non-local stone used in the construction of Stonehenge, most or it originating in the Preselis.

Jacquetta Hawkes knew north Pembrokeshire rather well and noted that “the Presely Mountain as a whole is of far greater interest in our prehistory than any single monument” (1973, 223). Despite such recognition, very little formal survey and research was undertaken in Preseli before SPACES was established in 2002. As discussed earlier in this chapter, Richard Fenton’s *Historical Tour through Pembrokeshire* (1810) provides invaluable insights into the topography, antiquities and customs of the area. He also conducted the first excavations of burial mounds in the Preseli Hills on Frenni Fawr at the east end of the ridge and on Cwm Cerwyn at its highest point. He described the oval setting of stones at Bedd Arthur (1810, 284), and recorded the destruction of megalithic tombs such as that at Temple Druid near Maenclochog (1810, 193–4). Recent surveys include work on the chambered tombs in the area by Toby Driver (1993), and three seasons of survey work in the same area by Peter Drewett and students from the Institute of Archaeology in London (Drewett 1987).

Since 2002 the Strumble-Preseli Ancient Communities and Environment Study (SPACES) has undertaken a series of extensive walk-over surveys combined with geophysical surveys, aerial photography, and limited excavation within a study area of 450 square kilometres extending from Mynydd Dinas in the west to Crymych in the east. The overarching aim is to provide an archaeological context for the sources of the Stonehenge bluestones. More than 500 sites and monuments of archaeological interest have been recorded in Preseli, many of them for the first time, and more than a dozen detailed investigations have been carried out at a selection of key sites (Darvill et al. 2012 with earlier references).

Preseli and the Stonehenge bluestones

Although the connection between Preseli and Stonehenge has been recognized and celebrated for nearly a century it is only in the last 30 years that much attention has been given to matching particular outcrops on Preseli with specific stones at Stonehenge (Figure 2.44). H H Thomas (1923, 243) recognized three main types of bluestone at Stonehenge and suggested possible sources for each in the Preseli Hills. Work by a team from the Open University led by Richard Thorpe and Olwen Williams-Thorpe applied chemical analysis to the problem alongside more conventional petrological approaches, confirming Thomas’s proposition that a number of source outcrops distributed across an area perhaps 10km by 2km provided stones for Stonehenge (Thorpe et al. 1991, fig. 8). More



Figure 2.44. Bluestone pillars in the north-east sector of the Outer Bluestone Circle at Stonehenge, Wiltshire. [Photograph by Timothy Darvill. Copyright reserved].

recently, Richard Bevins and Rob Ixer have undertaken an extensive series of studies re-examining samples from outcrops in Preseli and both the pillar-stones and debitage from Stonehenge. Their work, published as a series of iterative papers and reports (Bevins et al. 2014; Ixer and Bevins 2011a; 2011b; forthcoming), has led to the tighter classification of the range of bluestones represented at Stonehenge, and suggested specific source outcrops for some lithologies. The following main types of “bluestone” are now recognized.

Dolerites

Three types of dolerite are widely recognized amongst the stones of Stonehenge, recently designated Groups 1 to 3 (Bevins et al. 2014 with earlier references). Linking them to specific outcrops in the eastern Preselis has proved difficult and despite bold statements (e.g. Parker Pearson et al. 2015a, 1332) attributes are far from certain. Particular mention may be made of three problems: uneven sampling strategies both at Stonehenge (where many of the samples are debitage rather than pillarstones) and in the Preselis (where outcrops such as Carn Menyn and Carn Gyfrwyn are represented by very few samples); the meaning of differences between petrological and chemical characterizations; and questions of comparability between results from studies using different analytical techniques. **Group 1** (mainly spotted dolerite with high Cr values and low MgO values) includes Stones 33, 37, 49, 65, and 67 at Stonehenge together with debitage from excavations. Considered by Thorpe et al. (1991) and Ixer (1996; 1997) to derive from Carn Meini or Carn Geodog, and by Bevins and colleagues (2014) to be from Carn Geodog. **Group 2** (mainly unspotted dolerite with low Cr values and high MgO values) includes Stones 45 and 62 at Stonehenge together with debitage. Considered by Thorpe et al. (1991) and Ixer (1996; 1997) to derive from Carn Ddafas-las, Carn Meini, or Carn Gyfrwy, and by Bevins and colleagues (2014) to be from Cerrigmarchogion or Craig Talfynydd. **Group 3** (mainly spotted dolerite with low Cr and low MgO values) includes Stones 34, 42, 43 and 61 at Stonehenge together with debitage. Considered by Thorpe et al. (1991) and Ixer (1996; 1997) to derive from Carn Breseb, Carn Meini, Carn Gyfrwy, or Carn Geodog, and by Bevins and colleagues (2014) to be from Carn Breseb, Carn Gyfrwy, the Carn Alw area, or an un-named outcrop west of Carn Ddafad-las.

Rhyolites

Six basic types of rhyolite have now been recognized, designated Groups A to F (Ixer and Bevins 2011a; Ixer et al. 2015 superseding initial classification set out by Howard in Pitts 1982; Ixer and Bevins 2013a; 2013b). **Rhyolite Group A** (dark, flinty rhyolite), **Group B** (Rhyolite with planer fabric), and **Group C** (Snowflake rhyolite) are not represented by extant stones at Stonehenge (although unsampled buried stones 32d and 32e are possibly of this group on the basis of photographs and descriptions) but have been widely recognized amongst the debitage from the 2008 excavations within Stonehenge, the Heel Stone area, several Aubrey Holes, the Stonehenge Avenue, and the Stonehenge Cursus. It is thought that rhyolite from all three groups derives from a series of outcrops at Craig Rhos-y-felin near Pont Saeson on the north side of the Preseli ridge in Pembrokeshire (Ixer & Bevins 2011b; Bevins et al. 2011; Parker Pearson et al. 2015a; 2015b).

Rhyolite Group D (rhyolitic tuffs with late albite-titanite-chlorite intergrowths) are mainly confined to samples from the Stonehenge Cursus (see below) and are of unknown source (Ixer & Bevins 2010, 7; 2011a, 21–22). **Rhyolite Group E** (rhyolite with visible feldspar phenocrysts) is represented by Stone 48 at Stonehenge and also by two pieces of debitage from the 2008 excavations (Ixer & Bevins 2011a, 22; Ixer and Bevins 2013a, 15–18). **Rhyolite Group F** (crystal-vitric lithic ash flow tuff with distinctive glass shards) is represented by Stone 46 at Stonehenge although no debitage of this rock has been identified to date (Ixer and Bevins 2013a; 2013b, 14–15).

Volcanic rocks

Two basic types of hard volcanic rock with sub-planer texture have been recognized and designated as Volcanic Groups A and B (Ixer et al. 2015). **Volcanic Group A** is a friable rock (argillaceous lithic tuff) with abundant white mica and a strong metamorphic fabric. It is represented at Stonehenge only by debitage, although descriptions of Stones 32c, 33e, 33f, 40c, and 41d, all represented by buried stumps uncovered during earlier excavations, may also belong to this group. A source within the Ordovician volcanic sequences on the northern side of the Preseli ridge is likely (Ixer and Bevins 2016). **Volcanic Group B** is characterized by two forms of graphitising carbon within a distinctive mineralogy (Ixer

and Bevins 2011b; Bevins et al. 2012; Ixer and Bevins 2013a; 2013b, 14–15). It is represented by Stones 38 and 40 at Stonehenge as well as twelve pieces of debitage from recent excavations inside Stonehenge, and from Aubrey Hole 7, the Heelstone Ditch, and Trench 45 in the Avenue. A source within the Ordovician volcanic sequences of north Pembrokeshire is likely.

Sandstones

Two basic types of sandstone are now recognized amongst material from Stonehenge (Ixer and Turner 2006). First is an Upper Palaeozoic fine-to-medium grained calcareous sandstone of Devonian age, represented by the Altar Stone (Stone 80) and small amounts of debitage. Thomas (1923, 244–45) suggested it compared well with Old Red Sandstone of the Senni Beds that outcrop between Kidwelly, Carmarthenshire, and Abergavenny, Monmouthshire, or alternatively with the Cosheston Beds close to Milford Haven (Pembrokeshire). A recent review of samples in various collections that are labelled as being from the Altar Stone shows that some at least are mis-attributed (Ixer and Turner 2006). Secure Altar Stone samples together with debitage from recent excavations allows a “standard” petrological description of the Altar Stone as a fine-grained indurated sandstone (Ixer and Bevins 2013b, 13–14). It most probably derived from the eastern part of the Devonian (Old Red Sandstone) Senni Beds between Kidwelly and the Welsh Marches including widespread outcrops through the Black Mountains and northwards to Herefordshire (Ixer and Turner 2006, 5).

A second group of sandstones are represented by fragments from the central area of Stonehenge, Aubrey Hole 1, and the Stonehenge Cursus. These are probably Lower Palaeozoic rocks showing a marked tectonic fabric suggesting that they suffered deformation during tectonic activity. They probably originate in the Silurian or older sandstone formations of western Pembrokeshire (Ixer and Turner 2006, 5).

Early bluestone quarrying in the Preselis

Two of the possible sources of bluestones in the Preseli area have been explored by the Stones of Stonehenge Project (Parker Pearson et al. 2015a; 2015b; Parker Pearson 2015). At Craig Rhos-y-felin, near Pont Saeson beside the Afon Bryn Berrian just north of the Preseli Hills, an extensive outcrop has been sampled



Overleaf: Figure 2.45. Excavations at Craig Rhos-y-felin, Pont Saeson, the identified source of Rhyolite Group A–C. [Photograph courtesy of M Parker Pearson].

and excavations undertaken in 2011–15 around the foot of the exposed rock faces (Parker Pearson et al. 2015a; 2015b. (Figure 2.45). This rock matches debris from Stonehenge that is ascribed to Rhyolite Groups A–C, although not so far identified with any standing pillars. Moreover, there appear to be conflicting views on what exactly was found in the excavations that critics suggest might have been opened in the wrong place (cf. John et al. 2015a; 2015b). Higher into the hills work has also been undertaken at Carn Goedog whose outcrops match the Group 1 dolerite that seems to be fairly well represented amongst the debris and standing pillars at Stonehenge. Excavations on the southern edge of the outcrop revealed hearths, a pit, and evidence for the extraction of stone pillars,



Figure 2.46. View of the excavations of the Carn Menyn Quarry in 2012.
A roughly shaped broken monolith lies in the foreground.
[Photograph by Timothy Darvill. SPACES. Copyright reserved].

although radiocarbon dates suggest extraction took place here three or four centuries before bluestones were set up at Stonehenge (Parker Pearson 2015; Parker Pearson et al. 2015b).

Outcrops of what is probably Group 3 dolerite at Carn Menyn have been extensively explored by SPACES with surprising results that emphasise how Carn Menyn was the focus of a great deal of activity in the later Neolithic and early Bronze Age. Burial cairns have been recorded at either end, standing stones on the outcrops, a walled enclosure around the highest point, and natural spring-heads elaborated through the creation of pools and the application of rock-art on the southern side. The surveys found that on the southern flanks of Carn Menyn there was a scatter of broken or abandoned dolerite pillar-stones of the same size and proportion as the stones present in the two structures at Stonehenge that are visible today, as well as occasional hammer stones. Shallow hollows suggestive of quarry pits were recognised through field survey and, on the basis of surface

evidence, seemed to be for the extraction of a fine, light-grey coloured meta-mudstone (Darvill et al. 2008). Surface evidence including a broken pillar-stone, intercutting quarry pits, and indications of dolerite extraction on a terrace on the southern slopes of Carn Menyn at an altitude of 310m was especially noteworthy. Samples of spotted dolerite taken from this area were submitted for analysis and described by Ixer and Bevins (2011a, 13) as petrologically indistinguishable from Stone 35a and very close to Stones SH34 and SH61 at Stonehenge. Accordingly, in July 2012 a single trench covering an area of 30 square metres was excavated across the terrace in order to further examine the features visible on the surface (Figure 2.46). A complicated and well-preserved stratigraphic sequence representing the three main periods of activity was established. These were variously associated with working spotted dolerite that outcrop as an igneous intrusion at the northern end of the trench, and meta-mudstone formed through the metamorphosis of mudstones of the Aber Mawr Formation along the edge of the dolerite dyke in the southern part of the trench (Darvill and Wainwright 2014).

The earliest period of activity takes the form of a quarry pit for the exploitation of meta-mudstone. It is one of a series of at least a dozen such pits that follow the edge of the dolerite dyke around the southern shoulder of the hill. Fire-setting appears to have been part of the extraction process. Four radiocarbon dates were determined on the abundant charcoal from oak-stick wood in the primary fills. These fall into two groups. Two dates, 7060–6700 BC (UBA-22341: 7987± 50 BP) and 6640–6460 BC (UBA-21360: 7711± 47 BP), clearly belong to the first half of the sixth millennium BC. Two later dates, 5300–4980 BC (UBA-23207: 6170± 54 BP) and 5480–5310 BC (UBA-21359: 6396±42), are clearly later fifth millennium BC. Together these suggest at least two successive episodes of working separated by a full millennium.

The second period of activity at the Carn Menyn Quarry relates to the working of dolerite in the later third millennium BC. Quarrying, *per se*, is not necessary for extracting spotted dolerite, as natural columnar blocks spall from the exposed carns to create a spread of clitter and scree. At the northern end of the 2012 trench was a shallow socket for a standing stone. The stone lay fallen to the south; the packing stones that secured it were still largely in place. Oak stick-wood charcoal from the fill of the socket provided three radiocarbon dates of 2900–2640 BC (UBA-22345: 4188±34 BP), 2350–2060 BC (UBA-23208: 3795±34 BP), and 2270–2020 BC (UBA-22342: 3724±32BP). The earliest date is not statistically consistent with the two later dates and must be considered

residual. The two later dates are statistically consistent and give a combined date of 2280–2040 BC. Broken spotted dolerite pillar-stones lie to the north and south, with the example to the south showing clear traces of flaking to roughly shape the original block; it was presumably abandoned because it broke during this process. An area of preserved old ground surface towards the southern end of the trench contained a scatter of spotted dolerite flakes and hammer stones with evidence of burning directly associated with it. Oak charcoal from this area provided three radiocarbon dates: 2200–1960 BC (UBA-22344: 3685±32 BP), 2200–1930 BC (UBA-21357: 3672±45 BP and 2030–1770 BC (UBA-22343: 3567±32 BP). Together these form an overlapping range although not statistically consistent. However, the two earlier dates are entirely consistent and give a combined date of 2190–1970 BC.

The third and final period of activity represented in the Carn Menyn Quarry sequence again relates to the extraction of meta-mudstone. The earlier quarry was more or less silted-up by the end of the second millennium BC, but a new pit appears to have been dug to the south, partly overlapping its ancient predecessor. Blocks of stone and waste from the new quarry were deposited on top of the earlier fills and covered parts of the contemporary ground surface as a fairly uniform layer. This deposit is important as it sealed the evidence of dolerite working on the old ground surface. Indeed, blocks of meta-mudstone from this late quarry seem to have built up into what appears to be a small mound or cairn just outside the trench to the north-east. Charcoal from within the upcast was dated to 1380–1110 BC (UBA-21358: 2979±30 BP), while charcoal from the primary fill of this phase of the quarry yielded a slightly later date of 1190–920 BC (UBA-21361: 2287±34 BP).

The Carn Menyn Quarry sequence has a number of important implications for understanding the special significance of the site itself, the early history of stone quarrying in Britain, and the interpretation of Stonehenge in its wider cultural setting. It has underlined, once again, the likelihood that Carn Menyn was one of the sources of the Stonehenge bluestones, with evidence for third-millennium quarrying of dolerite blocks and abandoned bluestones *in situ* on the hillslope. The main stratigraphically determined periods of activity described above appear to be more or less discrete episodes spatially connected by the power of place whose roots can be traced back into the sixth millennium BC. The discovery of formal quarrying in the British late Mesolithic adds significantly to the growing list of monuments and structures from this period (Darvill and Wainwright 2014) and brings the cultural sequence at Carn Menyn into

close accord with what is known of the Stonehenge area (Darvill 2006), emphasizing the parallel but connected developments in the two areas. Continued activity within and around Stonehenge through the second millennium BC is well represented (Darvill 2006, 157–79), and ends with the digging of two rings of pits around the central setting (the Y and Z holes) and the construction of numerous round barrows on the ridges and hilltops overlooking the site. The same thing seems to have happened at Carn Menyn with the re-working of the earlier quarry pits for the extraction of meta-mudstone. At much the same time, the Carn Menyn Cairn and the Croesmihangel round barrow, discussed further below, were constructed at the western and eastern ends of the outcrops respectively (Darvill et al. 2012a).

It is also noteworthy that within the eastern part of the study area our fieldwork supports a suggestion by Richard Bradley (2000, 92–96) that the arrangement of various bluestone lithologies used in the later stages of Stonehenge broadly replicates in microcosm the actual arrangement of stone types across the landscapes of the Preseli Hills and surrounding areas. Thus, the dolerites of the Bluestone Horseshoe in the centre of Stonehenge derived from the central Preseli ridge, while the various rhyolites and tuffs present in the Outer Bluestone Circle originated as outcrops within a wider catchment (Darvill 2006, 136–39). It is a pattern that deserves some explanation, and one possibility is the connection with water. At Stonehenge this can be clearly seen in the construction of the Avenue linking the stones to Stonehenge Bottom and the River Avon (Darvill 2006, 122–3) while in and around Preseli the connection is between the various stone sources and a wide range of springs and rivers in the area.

Water, springheads, barrows and enclosures

During survey by the SPACES project, particular attention was paid to springs and rivulets which occur on the south side of Carn Meini. About 20 such springs were recorded, many of which had a crude wall screening off the springhead, thus creating a basin from which water ran southwards, downslope, to eventually feed into the River Cleddau in the valley below. One named springhead, Ffynnon Beswch, incorporates walling and has six small cairns sited above it; a revetment stone in one of the cairns is decorated with a cup and ring motif (Darvill et al. 2004). Another enhanced springhead was recorded at the head of

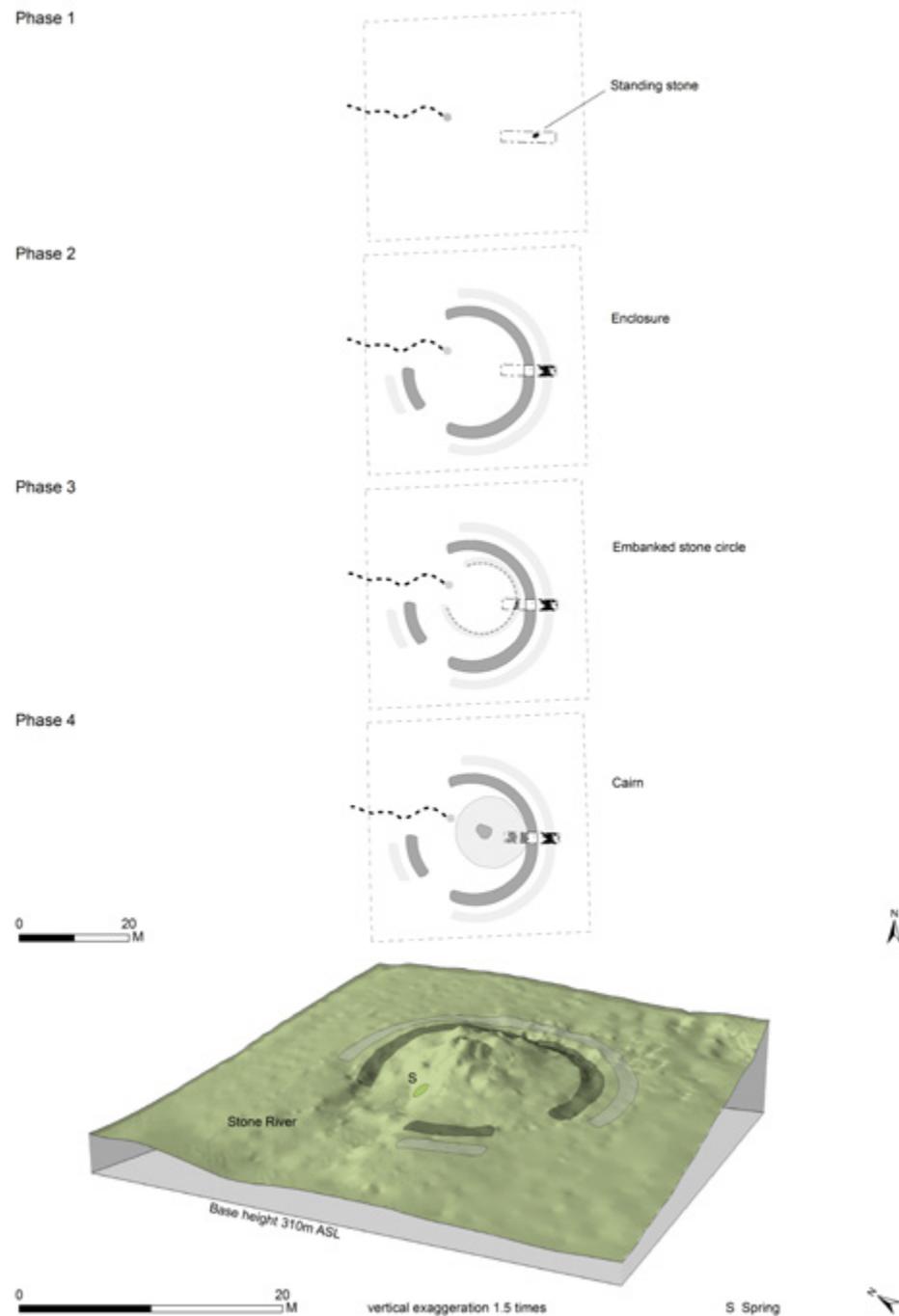


Figure 2.47. Phase plans of the Carn Menyn Cairn.
[After Darvill et al. 2012: fig.3].

a dry-stream bed running downslope. A low cairn stands on a slight terrace overlooking the springhead and three or four cup-marks can be seen on one of the stones at the springhead itself (Darvill et al. 2004, 106–8). The most emphatic demonstration of the relationships between monuments and water occur at the west end of Carn Menyn where a large cairn stands at the head of a stone river which flows into Gors Fawr bog far below, and at the east end of the ridge where the Mountain chambered tomb sits immediately above the spring which feeds the source of the Eastern Cleddau river.

The Carn Menyn Cairn

At the western end of Carn Menyn is a large stone cairn variously known as the Carn Menyn Cairn or *Llech-y-Flaiddast* (the great stone of the female wolf). Topographical and geophysical surveys were carried out in 2007 (Darvill et al. 2008, 52–3). It stands at 325 OD over the source of the Stone River (*Rhestr Gerrig*), a narrow glaciofluvial feature extending for approximately 3km from Carn Menyn southwards into the Gors Fawr wetland. It consists of a ribbon of stream-sorted boulders that has been subject to small-scale human modification over the years, much of it probably fairly recent, and may be an ancient predecessor of the Afon Tewgyll. There are no known records of early investigations despite the fact that the central structure appears to have been opened and its capstone displaced. The surveys carried out in 2007 suggested the site was a multi-period structure set within a surrounding earthwork.

A single trench was cut into the east side of the cairn across the line of the putative surrounding earthwork in 2011 (Figure 2.47). Four phases of construction were recognised in the sequence of excavated features (Darvill et al. 2012a, 27–31), two of which have been radiocarbon dated.

Phase 1 is represented by an oval pit approximately 1.25m by 0.75m whose profile suggests it was a socket for a stone or possibly a close-set pair of stones. Its fill included the broken-up remains of one or more spotted dolerite pillar stones, presumably the stone or stones that formerly stood here. Its position is significant as it overlooks the springhead that must once have fed the glaciofluvial channel represented by the Stone River.

Phase 2 comprises a roughly circular ditch and low outer bank that effectively encloses the source of the Stone River. The bank, about 2.5m wide, was represented by a thin spread of rubble linking together earthfast grounders. Below

were intermittent patches of protected ground surface. The ditch was 2m wide and up to 0.7m deep, U-shaped in cross section and slightly steeper on the inner edge. The eastern flank cut the oval stone socket attributed to Phase 1. The ditch fill comprised of a thin layer of peaty soil that appears to have been flushed by running water; during heavy rain the excavated ditch quickly filled. The surveys suggest that the enclosure had an internal diameter of about 20m. An opening can tentatively be identified in the south-western sector.

In Phase 3 a small embanked stone circle with an estimated diameter of about 15m across was built within the enclosure, slightly off centre to the north-east. It comprised a low bank of soil and rubble about 1.4m across and 0.45m high, into which were set tangentially arranged pairs of spotted dolerite pillars. Two such pairs were encountered in the excavation, one towards the centre of the trench and a second to the south, the gap between being c.0.4m. The pillars were between 0.66m and 0.80m high and were supported only by the bank material packed around them; there were no sockets cut into the underlying ground surface. A radiocarbon determination on hazel charcoal from the old ground surface under the bank provided a date of 1737–1531 BC (UBA-18772: 3352±32 BP). Hazel charcoal from within the bank provided a slightly later date of 1521–1324 BC (UBA-18771: 3170±40 BP). The only finds associated with this phase were two flakes of light grey meta-mudstone macroscopically comparable to material from quarries on the flanks of Carn Menyn.

In Phase 4 the round cairn that visually dominates the site today was built over the top of the embanked stone circle. This mound is c16m across, survives to a height of 1.5m, and was edged by roughly-coursed walling set just outside the limit of the underlying embanked stone circle. The core of the mound comprised stone rubble with a dark soil present in the lower levels. The central cist has a capstone measuring 2.8m by 2.5m and up to 0.6m thick, below which are three large stones that could have formed the sides of a cist or chamber. A radiocarbon determination on oak charcoal from the old ground surface under the cairn gave a date of 1415–1266 BC (UBA-18773: 3073±31 BP) which fits the overall sequence through Phase 3 and 4 of the site very well and places the construction of the cairn late within the overall round barrow tradition. Some 2.5km east of the Carn Menyn Cairn, a more modest and more typical round barrow was built at more or less the same time, effectively bracketing Carn Menyn.

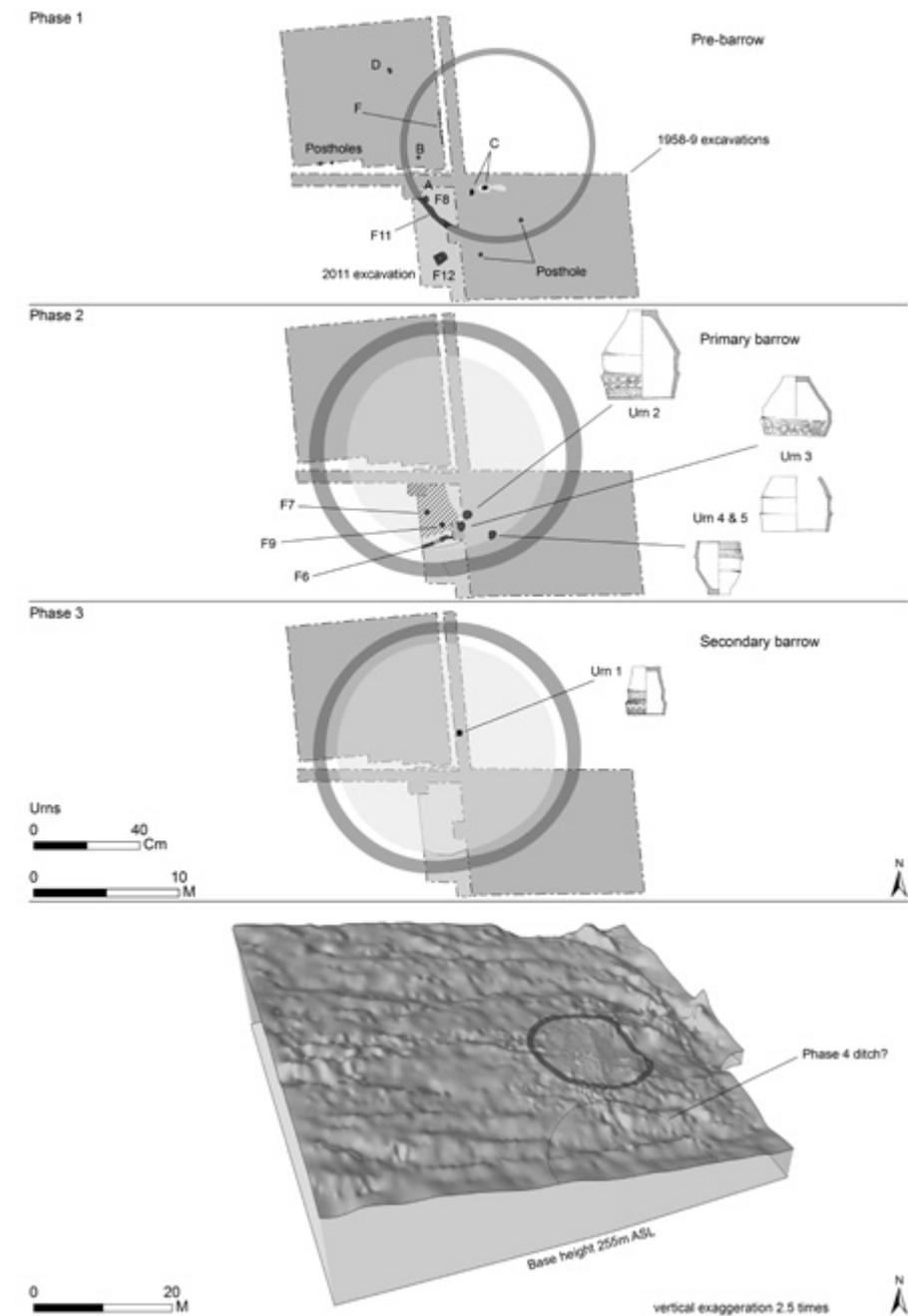


Figure 2.48. Phase plans of the Croesmihangel Round Barrow showing the associated urns. [After Darvill et al. 2012: fig. 7].

The Croesmihangel round barrow

The round barrow at Croesmihangel lies below Foel Drigarn at the eastern end of the Carn Menyn ridge at *c* 254m OD. It has long been known (RCAHMW 1925, No 725), but suffered considerable damage in the early twentieth century before being partially excavated in 1958 and 1959 by amateur archaeologists under the direction of Wilfred Harrison, Honorary Curator of Tenby Museum at the time (Nye et al. 1983). A cross shaped trench was cut in 1958 and two opposed quadrants (north-west and south-east) of the mound excavated in 1959; the north-eastern quadrant had mainly been destroyed by a quarry and the south-west quadrant was left largely untouched. In light of the deposit and features examined it was suggested that the barrow was a two-phase structure with possible evidence of pre-barrow activity. A total of five cremation urns from four burial deposits were uncovered, although the cremations that accompanied them were not examined in detail at the time. Geophysical surveys by SPACES in May 2007 confirmed the position of the earlier excavations and identified the presence of a substantial positive anomaly within the unexcavated section (Darvill et al. 2008, 52). Excavations in June 2011 had the aims of confirming the stratigraphic sequence, investigating the geophysical anomaly, and collecting soil samples to assist with the reconstruction of the local environment during the third and second millennia BC (Darvill et al. 2012, 32–38).

A single trench 8m by 3m with a small 1m by 1m extension to the south was hand-excavated in the south-western quadrant immediately west of the 1958–9 trenches. Examination of the original sections quickly suggested that the light coloured “clay layer” referred to by the earlier excavators (Nye et al. 1983, 22) was probably the remains of a gleyed podzolic soil below the barrow mound and that the recorded variations in ditch size (Nye et al. 1983, 22) was because, on the south side at least, there was evidence for a minimum of three partly intersecting cuts. The stratigraphic sequence recorded in 2011, together with a reconsideration of the published account of the earlier excavations, allows four main phases to the development and use of the site to be identified (Figure 2.48).

Phase 1 is represented by a series of pre-barrow features visible as bedrock cuts that were sealed by later deposits. Dominant here was an arc of palisade trench, 0.3m wide and 0.38m deep, containing packing stones indicative of close-set timbers, each *c* 0.2m in diameter. This was not recognised in the 1958–9 excavations, but if projected as a circular enclosure would be approximately 12.5m in overall diameter, be eccentric to the later barrow, and extend slightly beyond the edge of

the later towards the north-east. A radiocarbon determination on oak charcoal from a small pit towards the south-eastern part of the excavated length of palisade provided a date of 1918–1747 BC (UBA-18774: 3509±32 BP) for what is interpreted as a foundation deposit for the enclosure. Within the pit there was abundant broken quartz. Pre-barrow features recorded in 1958–9 (Nye et al. 1983, fig. 1 for identification) that would lie within the enclosure include a line of small postholes, two larger postholes and a possible hearth and stone surface, together with a pit recorded in 2011. Outside the enclosure, the 1958–9 excavations revealed three postholes and a pit belonging to this phase, to which can be added an oval pit investigated in 2011. Overall, it seems likely that the palisaded enclosure surrounded one or more timber structures, although what their purpose was remains unclear. Scattered across the area outside the enclosure were several fine, thin struck stone flakes and hammerstones, perhaps discarded during stone working.

In Phase 2 the site became the focus of burial rituals, the remains of which were then covered by a turf mound. All but fugitive traces of the palisaded enclosure had disappeared by this time, its line marked by a slight ridge of gravelly material. Two cremation pits located in 2011 seem to belong to this phase, their upper fills interdigitated with an extensive spread of ash-rich burnt soil intermixed with reddened stones and very occasional pieces of cremated bone that were also noted in the north-west and south-east quadrants in 1958–9. Within the 2011 trench, the spread of burning seemed to be constrained on the south side by a shallow palisade slot. This can be interpreted as the remains of the pyres on which corpses were burnt prior to the ashes being gathered up for formal deposition. Three burials found during excavations in 1958–9 can be associated with this phase. Urn 2 was inverted within what seems to have been a slab-lined cist. Urn 3 was inverted over a cremation deposit within a rough cist. Urns 4 and 5 were side by side within a slab-lined cist. Urn 4 was inverted over a cremation, while urn 5 stood upright on its base and contained a cremation. All four of these urns were tripartite collared urns and, with the exception of urn 4, were decorated with herringbone and lozenge motifs executed with cord-impressed or incised-lines. All belong to Longworth’s Secondary Series (1984, 320). The turf mound was approximately 12m in diameter and, in the preserved sections examined in 2011, comprised of at least seven visible layers of turf. Half of a fairly large stone disc was found immediately south of the urn 3 cist within the matrix of this phase of the mound. The mound was surrounded by a U-profile ditch up to 0.5m deep and an estimated 1m wide. A narrow berm separated the ditch from the mound.

In Phase 3 a secondary burial was added to the centre of the existing mound. Urn 1, a small Primary Series tripartite collared urn decorated on the collar and neck (Nye et al. 1983, fig. 3.1; Longworth 1984, 320, 270) was found in the side of the quarry cut into the north-east quadrant in 1956. It was inverted, its base protected by a small slab “in a pit cut through the lower layers of the mound” (Nye et al. 1983, 25). The ditch was recut partly on a new line (F4) around the mound, which was enlarged by the addition of soil and redeposited bedrock, thereby increasing its size to *c* 14m across and at least 1m high. Around the skirt of the mound was a concentration of stones forming a rough edging.

Phase 4 is represented by a third recut of the ditch recorded in the 2011 excavation; it is rather larger than the earlier ditches at 0.6m deep and 2.5m wide. The edge examined within the area of the 2011 excavation curves in the opposite direction to the earlier ditches and, although only a short length, suggests that it actually relates to another monument, perhaps another barrow, to the south. This suggestion accords with the evidence recovered in 1958–59 where the ditch in the south section is quite different in profile to those elsewhere (Nye et al. 1983, fig. 2). A swelling in the hedge-bank south of the Croesmihangel barrow may be the remains of another mound suggesting perhaps the former presence of a small barrow cemetery in this area.

The Carn Menyn Enclosure

Between the two barrows just described, on the highest part of Carn Menyn, are the remains of a walled promontory enclosure identified in 2004 (Darvill et al. 2004). The promontory commands extensive views south to the source of the Eastern Cleddau, the Gors Fawr and Meini Gwyr stone circles, and the Gower Peninsula. To the north can be seen the Lleyn Peninsula and Cardigan Bay. The enclosure is defined by two lengths of bank joining natural rock outcrops. A heavily spotted dolerite with strong vertical fracturing and a pronounced columnar structure outcrops within the enclosed area. In 2005 a resistivity survey of the enclosure was undertaken and two small evaluation trenches dug through the enclosure bank. The well-constructed wall was about 1.4m wide with traces of an external ditch. No artefacts were found although the buried soil under the bank was preserved 10–15cm higher than the surrounding ground level and suggests some antiquity for the enclosure (Darvill et al. 2005).

Transporting the bluestones

The mechanism by which stones from the Preseli area came to be on Salisbury Plain has been hotly debated and academic passions have run high on occasion (e.g. John 2008). In 1971, Kellaway revived an earlier suggestion that they were carried on glaciers which spread south before they melted and neatly deposited their bluestone burden on Salisbury Plain (Kellaway 1971). Superficially attractive, the glacial theory flounders because of the lack of any evidence for glacial activity on Salisbury Plain, and no suitable blocks of bluestone have yet been found along the route they would have taken across south-east Wales. Although it still has vocal supporters, eminent geologists and glaciologists have dismissed the glacial theory (Bowen 2005; Green 1997; Scourse 1997) and concur with Thomas’s original suggestion that the stones “were transported by human agency, in all probability by an overland route” (Thomas 1923, 259).

Much has also been written about the possible routes prehistoric people used to transport the stones from Preseli to Stonehenge, and the methods of conveyance they used (Atkinson 1979, 105–116). One option would have been to transport the stones, each weighing up to 4 tons, by water. Sewn plank boats were developed by around 2000 BC and were an important innovation in boat building techniques (Van de Noort 2006). These robust boats would have enabled sea-faring journeys to be undertaken bearing heavy cargoes. In Pembrokeshire, the Eastern Cleddau has a long history of inland navigation by rafting. The coal industry required a regular and substantial supply of timber for pit-props (Connop-Price 2004, 121) and timber was cut from wooded locations along the river, roped into rafts of about 6 tons, towed downstream, and then dismantled so that the timber could be carted to the pit-head. This process was a feature of life on the Cleddau right up to the time that Hook colliery obtained its own rail connection to the main line system in 1930. One possibility for transporting the bluestones is therefore that they were floated on rafts down the East Cleddau and then up the Severn Estuary into the Bristol Avon and from there across to Salisbury Plain.

Another option is transporting the stones overland. Up until the mid-nineteenth century and the coming of the railways there was a large trade in livestock from Welsh breeders to the English markets. Drovers’ roads were used to drive cattle from Pembrokeshire through Carmarthenshire and the Tywi Valley to Llandovery and on to England (Colyer 1976). One such road crosses the Preseli Hills past Carn Menyn and on to South Wales. Isotopic work by Sheffield

University suggests that the cattle trade from West Wales to Wiltshire was established by 2500 BC (Parker Pearson 2012, 120) so appropriate routes would therefore have been well established by the time the bluestones were moved to Stonehenge. The method of transport was almost certainly the car llusg or sled (Wiliam 2010, 54 and figs. 10 and 11) which was stable on hilly ground and capable of operating in terrain that was impossible for a wheeled vehicle (Peate 1972; Jenkins 1962). Lewis records the use of the sled for transporting heavy weights in Preseli (Lewis 1969, 122) where they were pulled by hand or by animal traction. In the Mourne Mountain granite quarrying industry in South Down, Ireland, they were used for the transportation of large granite blocks. Called *slipes* they are usually A-frames drawn by a horse (Evans 1967, 95 and fig. 47).

Overall, the weight of evidence is strongly in favour of human transport for the bluestones, probably along well-established overland routes using sleds as a traditional means of conveyance.

Later uses of bluestone

Geological research on early Medieval inscribed stones in south-west Wales suggests that the Preseli dolerites in particular retained their appeal and significance in later times (Jackson 2003). Around 37 inscribed stones were derived from Ordovician rocks in the Preseli Hills of which 17 are spotted dolerite; some had been transported up to 40km from their source. A preliminary study of the modern use of spotted dolerite as a building material has identified two chapels where it was extensively employed. Cana Independent Chapel was built in 1856–7 and is constructed throughout of spotted dolerite. It lies on the north side of the Preseli ridge near Felindre Farchog and E T Lewis (1967, 39) claims that the stone was quarried from Carn Goedog, one of the outcrops of spotted dolerite on the north-facing slopes of the Preseli ridge. On the south side of the ridge, the Bethel Baptist Chapel in Mynachlog-ddu was built in 1875–7. Its gable front is built of spotted dolerite as are the front wall and gate pillars. E T Lewis (1967, 39) claims that the stone for this building was derived from the lower slopes of Carn Menyn and there are certainly extensive relatively modern quarries in this area. To the left of the chapel entrance is a line of memorial stones to the Thomas family. Thomas Thomas died on 12 January 1876 aged 85, “for 49 years a faithful deacon of this church”. He farmed at Carnmenyn Ucha at the foot of Carn Menyn.

In relatively recent times many bluestones from east Preseli were used as gateposts and as threshold and hearth-stones. Good examples can be seen at the entrance to what was the primary school in Mynachlog-ddu where two stones were transported on sleds from Carn Goedog in the early years of this century (Lewis 1967, 39).

Why were the bluestones brought to Stonehenge?

The challenge of understanding the bluestones is now less to do with when they were brought to Stonehenge, and how that was achieved, but rather why, and for what purpose, were they transported to Salisbury Plain for exclusive use at Stonehenge. As discussed elsewhere, we believe the bluestones were powerful items placed within a structure whose framework was formed by the great Sarsen Trilithons and the Sarsen Circle (Darvill and Wainwright 2011). The design of this structure mirrored that of contemporary houses (Darvill 2016a), replicating in stone what elsewhere in Britain was often built in timber (Wainwright and Longworth 1971, 207–16; Wainwright 1989, 115–34). Once in place, the framework remained static, but the bluestones were periodically moved and reorganised. The earliest arrangement seems to have been the Double Bluestone Circle (Q and R holes) which later became the Outer Bluestone Circle, and the Inner Bluestone Circle which later became the Bluestone Oval and, finally, with the removal of stones from the north-eastern sector, the Bluestone Horseshoe seen today (Darvill et al. 2012b).

Many explanations as to why the bluestones were considered sufficiently powerful and important to move from Wales to Wiltshire can be proposed, and there may well have been more than one reason. Not all the suggested possibilities are mutually exclusive. The demonstrable antiquity of stone extraction on Carn Menyn, long before the building of Stonehenge began, tells us something about the ancestral significance and power of the landscape from which the bluestones were taken (Darvill and Wainwright 2014). Perhaps Mynydd Preseli was the home of the gods: the Mount Olympus of Neolithic Britain.

For Mike Parker Pearson, the bluestone blocks taken from west Wales to Stonehenge symbolically represented and materialized in durable form the ancestors of people living in Wiltshire during the third millennium BC, and were set up as memorials to the dead (Parker Pearson and Ramilisonina 1998;

Parker Pearson 2012, 9–26). Following earlier suggestions by Gordon Childe, he suggests that the juxtaposition of sarsen and bluestone at Stonehenge was an act of unification, an action that “merged two different ancestries from two of the most ancient parts of Britain” (Parker Pearson et al. 2015c, 77). To support this idea, and based on the story of Stonehenge told by the medieval monk Geoffrey of Monmouth (Piggott 1941), the search is now on for the remains of a monument, perhaps a passage grave, in Pembrokeshire that was dismantled so that its components could be taken eastwards to Salisbury Plain (Parker Pearson et al. 2015b, 23).

Geoffrey of Monmouth’s account of Stonehenge also underpins the present authors’ reading of the evidence, especially the suggestion that the Welsh bluestones were “connected with certain secret religious rites and they have various properties which are medicinally important” (Thorpe 1966, 196). In this, the connection between the stones and water is critically important. Healing springs, later recognized by the Christian church as ‘holy wells’, are widespread in the Preseli Hills (Jones 1954) and a number were enhanced in prehistoric times. Springs were also a significant and persistent feature of the Stonehenge landscape, as the recent work at Blick Mead clearly shows (Jacques et al. 2012). Soon after the bluestones were installed at Stonehenge (stage 2) the central structure was linked by an Avenue to Stonehenge Bottom and the River Avon (stage 3), thereby fixing and formalising the relationship to water (Darvill et al. 2012b, 1035). The idea that powerful stones were moved from their source outcrops on a special, ancestral or sacred place to franchise a distant shrine or temple is not an isolated occurrence as it finds parallels in West African societies and elsewhere (Insoll 2006). Accordingly, we propose that after the earthwork enclosure at Stonehenge ceased to be a major cremation cemetery sometime about 2500 BC, bluestones from outcrops in west Wales were brought to Stonehenge because of their supposed curative powers and set up within a temple whose structure had already been built from sarsen stones. From that time onwards, pilgrims and travellers were drawn to the Stonehenge area because of the perceived special properties of the stones that empowered Stonehenge itself, seeking out pastoral and medical care of both body and soul: tending the wounded, treating the sick, calming troubled minds, promoting fecundity, assisting and celebrating births, and protecting people against malevolent forces in a dangerous and uncertain world (Darvill 2007; 2016b; Darvill and Wainwright 2009; 2011).

From the middle of the second millennium BC, Stonehenge was no longer maintained and used in the way it had been over previous centuries. Two rings of pits were dug, the Y- and Z-Holes, around the stone settings, bounding them and sealing them off (Cleal et al. 1995, 256–65). And it was also a period of change on Preseli. In the period after 1600 BC many old traditions were left behind and, while a few remain, this was a new era in the development of communities living in the area.

MIDDLE BRONZE AGE: 1600–1000 BC

An increasingly favourable climate during the early second millennium BC encouraged the spread of settlement high into the hills with farming up to altitudes of about 300m OD (Darvill 2010, 190–1). It was a pattern that continued over the following centuries as more land was cleared and settlement expanded into previously under-used environments. The second half of the second millennium BC saw the most extensive high altitude land-use ever recorded in Britain. In Pembrokeshire pollen records show evidence of extensive woodland clearance in the Cleddau valley around 1450 BC (Seymour 1985) while similar events at comparable dates at sites across mid- and south-Wales point to extensive deforestation during the middle Bronze Age (Walker et al. 2009, 56). Material culture from this period is not especially well understood, but is represented by various styles of encrusted and bucket-shaped pottery vessels that parallel regional traditions such as Deverel-Rimbury in southern Britain and Trevisker in the south-west (cf. Darvill 2010, fig. 91).

Natural disasters and catastrophes, of course, happened, and some come into sharp focus through archaeological evidence. Mike Baillie (1999) has noted tree-ring events in 1628 BC and 1159 BC that may reflect environmental disasters of one sort or another. The first perhaps linked to the eruption of Santorini, variously dated to the late seventeenth or early sixteenth century BC (Scarre 2014). Such a massive eruption would have affected skies from the Mediterranean northwards as far as Britain. More locally, on the south coast of Pembrokeshire, low-lying land around Stackpole Warren became inundated with blown sand forming a layer up to 5cm thick at Site A, effectively sealing the remains of earlier activity and providing a firm marker-horizon for the definition of middle Bronze Age and later structures (Benson et al. 1990, 189).

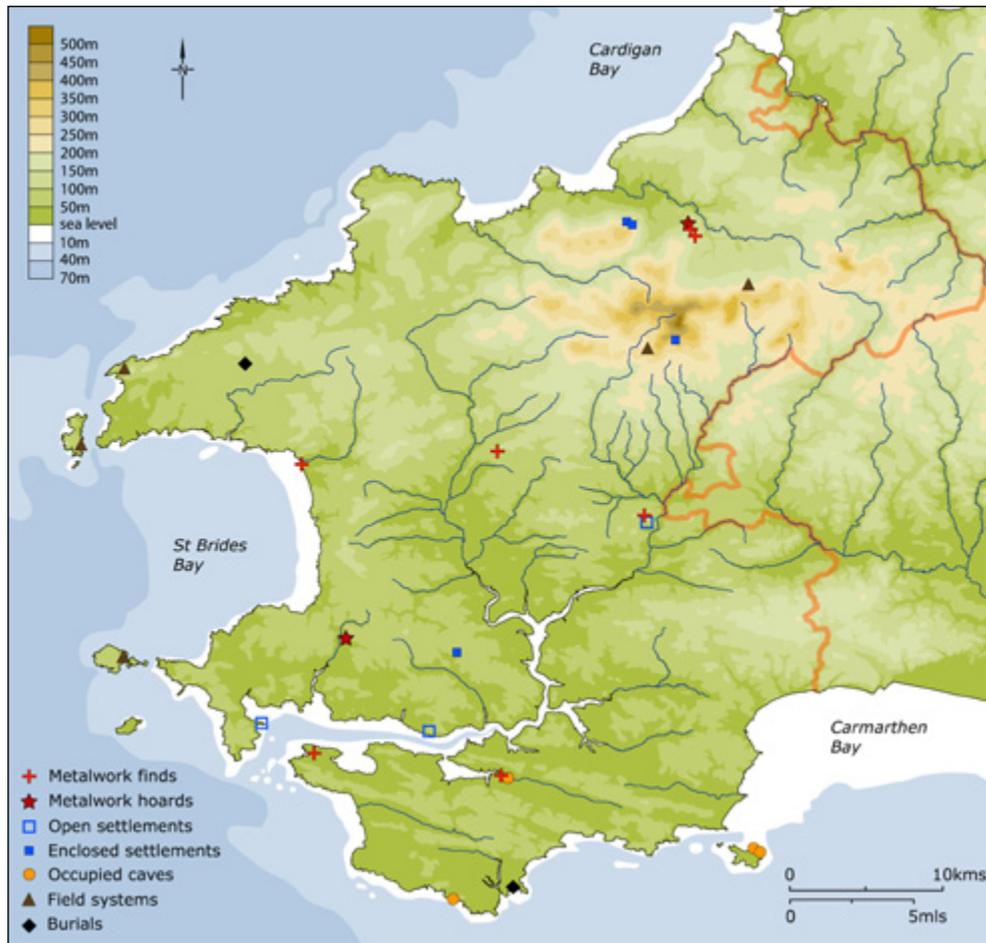


Figure 2.49. Distribution of recorded middle Bronze Age settlements, field systems, burials, metalwork finds and hoards. [Source: Dyfed Historic Environment Record].

Settlements and fields

Settlements of the middle Bronze Age in Pembrokeshire are not numerous (Figure 2.49), although the potential clearly exists for more to be found and a variety of settlement forms should be expected across the county. Investigations at Holgan Camp revealed large pits and hollows but no associated finds; a radiocarbon date from one of the pits of 1687–1465 BC (CAR-763: 3280±70 BP) places

the activity in this period (Williams and Mytum 1998, 69). Nearby, excavations at Pilcornswell Camp also revealed large pits and hollows without associated finds, here dated to 1680–1450 BC (CAR-400: 3250±70 BP) (Williams and Mytum 1998, 69). A bronze trunnion tool for use in metalworking was found in a residual context within the rampart of the Broadway enclosure in the same area (Williams and Mytum 1998, 87). Caves were also used, including Ogof Morfran, Nanna's Cave, and Potter's Cave on Caldy Island (Davies 1975).

Across large parts of north-west Europe the middle Bronze Age saw the development of extensive field systems and the organization of the landscape into discrete sectors. Something of the layout of lowland and coastal landscapes in south-west Wales may be glimpsed from extensive surveys carried out in areas where later agriculture has had a low impact. On Skomer Island, for example, John Evans identified four or five main field systems arranged radially around the island, each containing clearance cairns and associated with clusters of round-houses represented by stone foundations (Evans 1990; Darvill 1996b, 228–35; Driver 2007, 80–83; Barker et al. 2012). Hut-Groups 6, 7, 8, 16, 21, and 35 were also associated with burnt mounds. A standing stone known as the Harold Stone 1.7m tall lies above North Haven, while an oval setting of standing stones 16m by 8m (known as “The Churchyard”) stands outside the fields in what may have been an area given over to communal activity at the extreme eastern end of the island (Grimes 1950, plate 1; Barker et al. 2012, 295–6).

A still more extensive field system has been recorded on St David's Head (Murphy 2001; Driver 2007, 95–7). This co-axial system comprises a series of long parallel boundaries running south-east to north-west across the grain of the landscape (Figure 2.50). They are similar in layout and construction to the so-called “reaves” on Dartmoor and other parts of south-western Britain (Fleming 1988). At St David's Head, the parallel boundary walls (axial reaves) all terminate on the north-western end at a larger wall which is referred to as a “defensive wall” but which might in fact be a “terminal reave” in comparable field systems elsewhere (cf. Fleming 1988, 67–70). A handful of roundhouses at St David's Head might have been associated with the field system, although the majority of the recorded houses and enclosures probably belong with later uses of the area during the first millennium BC, contemporary with the occupation of the Clawdd-y-Milwyr promontory fort on the extreme western tip of St David's Head (Murphy 2001, 98).

Field systems also existed in other parts of the county. Fragments remain on Ramsey Island (James and James 1994), on the southern slopes of Carn Ingli



Figure 2.50. Coaxial field system recorded on St David's Head. [After Murphy 2001: fig. 2]

(Driver 2007, 122–23), and on the slopes of the Preseli ridge south of Carn Alw and south-west of Rosebush (Driver 2007, fig. 68). Elsewhere, especially on the lower ground, they have mainly been swept away by later remodelling of the agricultural landscape.

Ceremonial monuments

The construction and continued use of some earlier types of monument is represented at sites across Pembrokeshire. At Stackpole Warren Site A in south Pembrokeshire, for example, a large standing stone known as the Devil's Quoit was set up in an area that had previously been used for settlement and cultivation (Benson et al. 1990, 189–95). The stone is a block of local limestone 2.4m by 1.75m by 0.4m thick and is estimated to weigh 3 tons. The socket for the stone was cut into an earlier deposit of blown sand and the erection of the stone

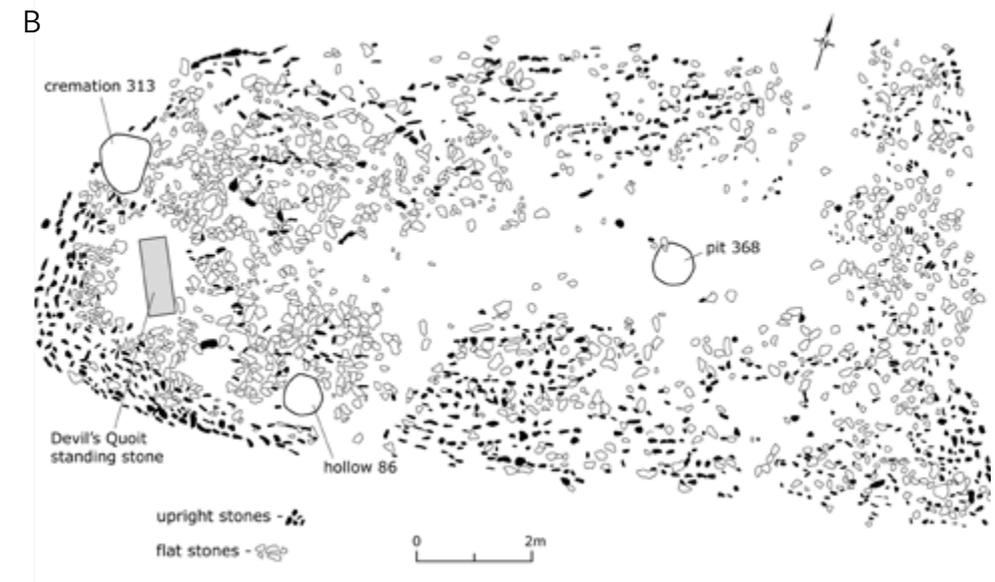


Figure 2.51. Stackpole Warren Site A, Bosherton. A. Photograph of excavations in progress, looking south-west. The standing stone (Devil's Quoit) lies outside the trench with the setting of miniliths in the middle ground. An Iron Age burial pit lies to the lower right. B. Plan of the partly reconstructed stone settings and associated features. [After Benson et al. 1990: Plate 15(b) and fig. 10]

can be tentatively dated to the mid second millennium BC. Associated with the standing stone was a remarkable trapezoidal arrangement of over 2000 small stones covering an area 16m by 8m (Figure 2.51). Running south-west from the stone setting was an alignment of water-worn stones. Similar multiple rows of small stones, dubbed “miniliths”, are known on Exmoor, Somerset (Gillings et al. 2010) and in Caithness (Mercer 1985, 53–7; Baines and Brophy 2006, 78–87) although their purpose and meanings are unknown.

Burials

Across Britain, the construction of round barrows – so characteristic of the early second millennium BC – become less popular after 1200 BC and their place was taken by cremation cemeteries. Many of these involved inserting burials into earlier round barrows or in pits adjacent to standing stones. At Stackpole Warren Site A, just such a cremation burial was found: a few pieces of burnt bone in the recut of a shallow pit about 1m north of the standing stone. A radiocarbon date of 1277–901 BC (CAR-101: 2890±70 BP) from Context 100 in the bottom was overlain by Context 77 which yielded an earlier date of 1602–1272 (CAR-476: 3130±70 BP) presumably because it contained residual charcoal (Benson et al. 1990, 192). At Pen Y Bont, St Davids, the presence of fragments from at least two encrusted urns suggests that burials may have been added to this barrow in the later second millennium BC (Murphy 2006. Figure 2.52 C and D).

Metalwork and hoards

Bronze was the main metal used in the middle Bronze Age, alongside gold from sources in Ireland. A series of industrial traditions embracing technical and stylistic developments span the period, named after the find-places of typical specimens: Arretton Down (1700–1500 BC), Acton Park (1550–1400 BC), Taunton (1400–1300 BC), Penard (1300–1150 BC), and the Wilburton/

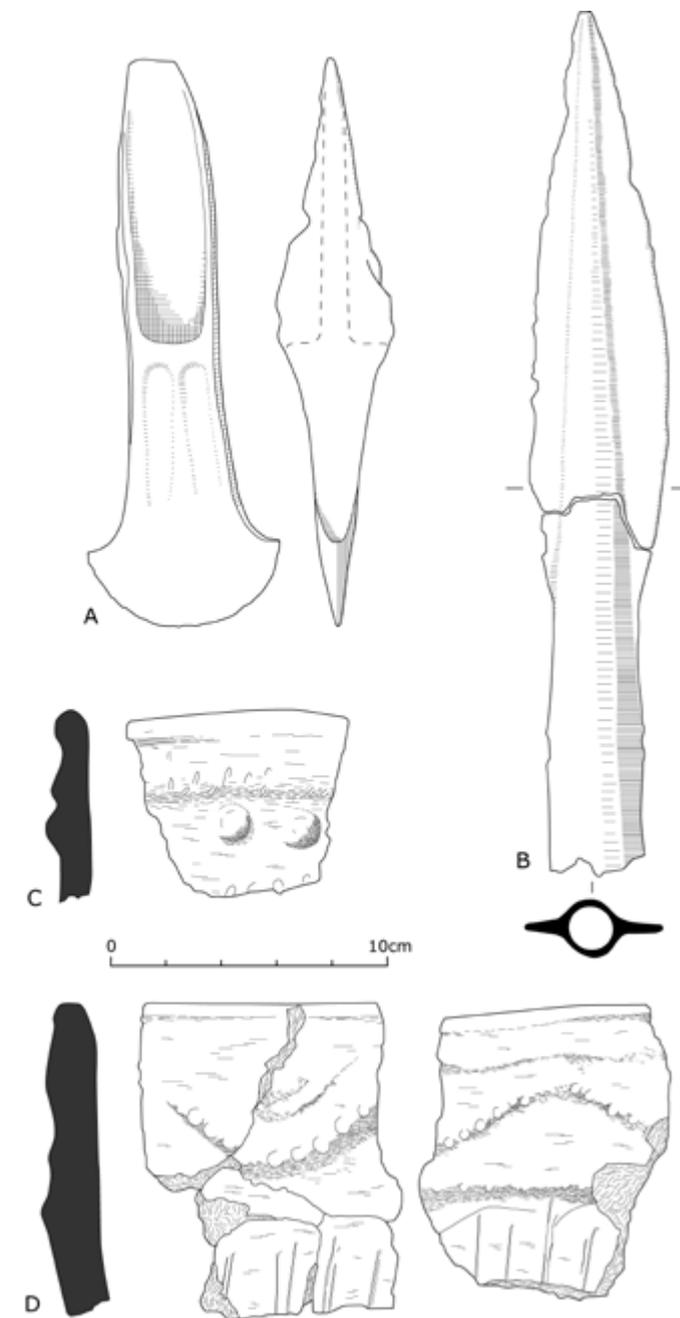


Figure 2.52. Middle Bronze Age metalwork and pottery from Pembrokeshire. A. Palstave from Nevern; B. Socketed spearhead from Nevern; C and D. Encrusted urns from Pen y Bont, St Davids. [After A. Savory 1980: fig. 21.158; B. Savory 1980: fig. 27.239; C and D. Murphy 2006: fig. 2].

Wallington (1150–1000 BC). Finished items of the period are rather rare from Pembrokeshire but include what appears to be a small hoard comprising a palstave and socketed spearhead from near Pentre Ifan, Nevern (Savory 1947, fig. 2; Savory 1980a, 158. Figure 2.52 A and B), single palstaves from Spittal (Lodwick and Besly 2005, 129) and Angle (Lodwick 2004, 125), and a broken palstave in a residual context in Priory Farm Cave, Monkton (Laws 1908, 114. Figure 2.54 A). The distribution of these finds (Figure 2.50) shows a marked concentration in coastal areas.

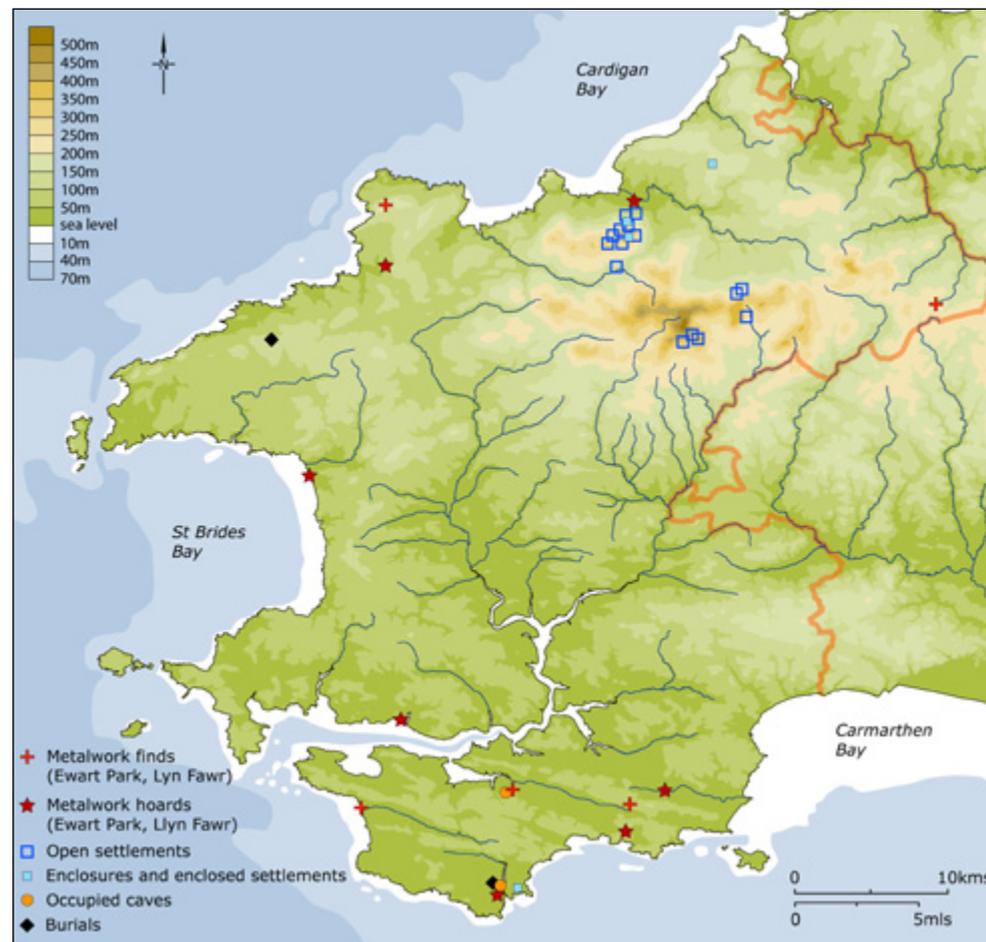


Figure 2.53. Distribution of late Bronze Age settlements, burials, metalwork finds, and hoards. [Source: Dyfed Historic Environment Record].

An intriguing series of finds have been made by metal detectorists on Newgale Beach, the wide beach in the north of the county facing the Atlantic. During the winter of 1999–2000 two distinctive items were found. First is a large copper dirk reported as coming from under a large stone within a peat deposit which had been partially exposed by storms. The dirk has a ridged blade 208mm long and dates from the period 1500–1250 BC. The second is a side-looped spearhead reported to have been recovered from a clay deposit partially exposed by storms. The spearhead has a leaf-shaped blade and lozenge-sectioned mid-rib, and is 135mm long (Macdonald 2000). In addition to the dirk and spearhead, another dirk, a second side-looped spearhead, and a leaf-shaped basal-looped spearhead have previously been recovered from eroding peat and clay deposits exposed on Newgale Beach (for an anecdotal account of the discoveries see Blacklaw-Jones 1997) although the degree of association between them is uncertain. These five objects, all of broadly similar date, found on the beach may suggest a dispersed hoard, or perhaps cargo from a ship-wreck such as those reported off the coasts of Devon and Kent (Needham et al. 2013).

A hoard comprising three rare gold torcs, one a flange twisted type and the other two a pair of virtually identical tightly coiled wire type, were found in 1991 at Tiers Cross, Milford Haven. They date to the Penard Phase, 1200–1000 BC, and are similar in form and metal composition to numerous examples from Northern Ireland (Aldhouse-Green and Northover 1994, 41). The only comparable object is the slightly later bronze bracelet from Priory Farm Cave referred to below (Aldhouse-Green and Northover 1994, 44).

Flint and stone

Preseli continued to be a source of stone for implements in the second millennium BC. The meta-mudstone quarries first exploited in the Mesolithic period were re-worked for the extraction of the stone over a period which has been modelled with a start date of 1800–1090 BC and an end date of 1210–420 BC (Darvill and Wainwright 2014, 1112).

Flint continued to be used for tools and the forms are simple but characteristic. Good examples are barbed and tanged arrow heads from St Davids, and a plano-convex knife from Llanrhian (Savory 1980a, 316, figs. 42 and 50).

THE LATER BRONZE AGE: 1000–700 BC

Following the climatic optimum of the later second millennium BC, mean temperatures fell back and the climate became wetter and more Atlantic (Taylor 1980, 102). Increased rainfall was accompanied by widespread coastal inundation. Many upland areas and marginal lowlands seem to have been abandoned. On Preseli, in common with many upland parts of Wales, blanket bog began to form over abandoned fields and quarries from about 1000 BC. Soil fertility in these areas did not recover, and natural woodland did not regenerate. Most of our moors and heaths owe their existence to the impact of widespread settlement, intensive land-use, and over exploitation during the second millennium BC, followed by an environmental downturn in the early first millennium BC.

Settlement and land-use

Through the early first millennium BC, settlement of the uplands decreased as communities retreated down-slope to more sheltered locations. Across Britain new regional identities developed, defined mainly by innovative ceramic styles in Wessex, south-west England, East Anglia, Yorkshire, northern England, Scotland, and Wales, and the possession of weapons became more common. Figure 2.53 summarizes the distribution of recorded sites and findspots for this period in Pembrokeshire.

Settlements were superficially similar across Britain and consisted of circular houses of timber or stone, either spread amongst fieldsystems or clustered together within compounds. Two late Bronze Age settlements are known to date in Pembrokeshire. The first to be investigated is at Sites G and J on Stackpole Warren. It is loosely dated to between 1115–800 BC (CAR-845: 2770±60 BP) and 1025–780 BC (CAR-843: 2710±70 BP) and comprises a rectangular enclosure edged by a stone wall 1.6m thick. Its use was short-lived and after the wall collapsed a midden associated with a burnt mound spilled over the collapsed stonework. Grains of barley were present, suggesting something of the local economy (Benson et al. 1990). A collection of mainly dolerite-tempered pottery representing at least 21 vessels (Benson et al. 1990, 219–222) is best seen as representing either a late regional variation of the Deverel-Rimbury tradition found in central southern Britain (Darvill 2010, 210–11 and 218) or, more likely, a regional variation of the plain Post-Deverel-Rimbury ceramic styles (cf.

Ellison in Crane 2004, 8–9). A few sherds of similar pottery representing four vessels were also found in Site A at Stackpole Warren (Benson et al. 1990, 221). A large bucket-shaped vessel now in Tenby Museum that was found in a barrow on Stackpole Warren (probably Site 1; Laws 1888, 30) is of similar form and fabric to the Stackpole Warren Site G pottery and may be contemporary (Benson et al. 1990, 221).

The second settlement is at Newton, Llanstadwell, where excavation in advance of the construction of gas storage tanks revealed the post-ring of a late Bronze Age roundhouse about 5.8m in diameter. Radiocarbon dates of 1140–920 BC (Beta-182944: 2870±40 BP) and 1450–1300 BC (Beta-182945: 3120±40 BP) were obtained from charred material from separate postholes suggesting fairly long-lived activity and the replacement of structural components over time. A few grains of hulled barley and wheat were found (Crane 2004). Pottery similar in form but different in fabric to the Stackpole assemblage was associated with the roundhouse, and more was recovered from the adjacent field during a watching brief. This Post-Deverel-Rimbury style of pottery was the last to be made in south-west Wales during prehistoric times as communities living the area during the later first millennium BC appear to have been aceramic.

Excavations at Dale Fort, a coastal promontory fort overlooking Milford Haven, suggest occupation here in the ninth and tenth centuries BC associated with an early phase of the defences (Williams 1988b, 48). A slightly different kind of enclosure was excavated in 2014 at Bayvil Farm near Nevern in the expectation that it was Neolithic in date (Parker Pearson 2015, 4). Known through aerial photography (Driver 2007, fig. 181) the enclosure is circular in plan, 70m in diameter, and bounded by a substantial segmented ditch. Excavations revealed pottery from the ditch fill that suggested it was built around 1000 BC. Superficially at least the form of this enclosure with its interrupted boundary ditch suggests similarities with the late Bronze Age Springfield type enclosures found in south-eastern England (Darvill 2010, 233–36).

Settlements of this date should be more common than present evidence suggests, but they are difficult to detect; more will certainly be found as chance discoveries and, as at Bayvil, through the field-checking of undated features represented as earthworks or revealed through aerial photography.

As in earlier times, a number of caves were occupied, including Priory Farm Cave, Monkton, in the limestone cliffs overlooking Milford Haven to the west of Pembroke Castle. The site was originally excavated by Dr A Hurrell Style and E E L Dixon in 1906–7 who left no record of their work (see Laws 1908

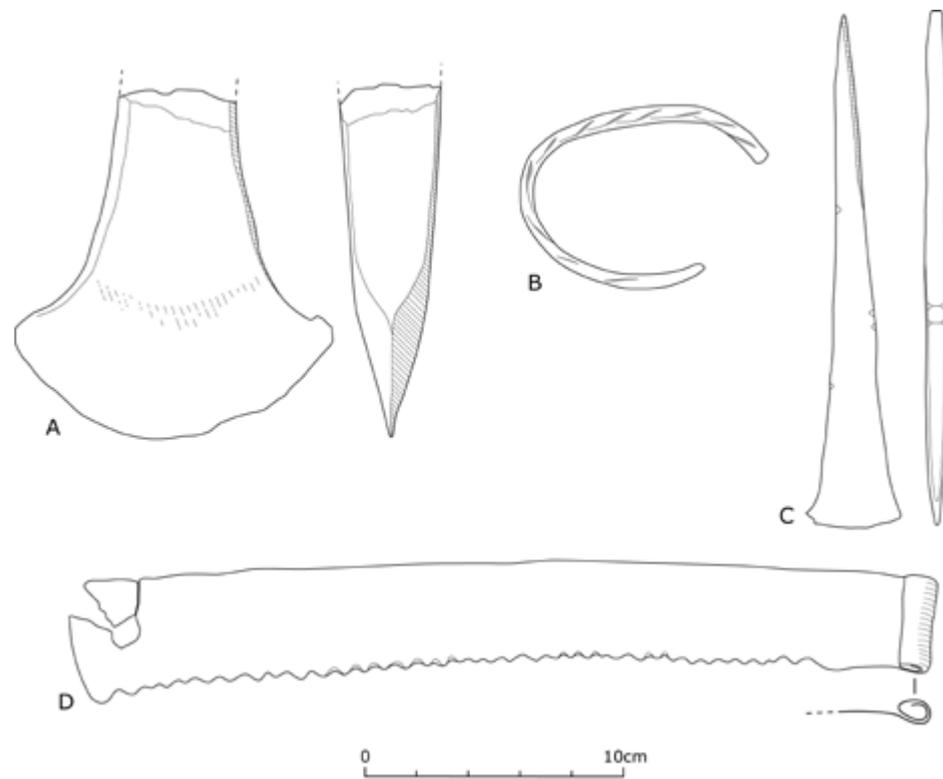


Figure 2.54. Late Bronze Age Priory Farm Cave Hoard, Monkton.
[After Savory 1980: fig. 31, 265]

and Grimes 1933 for secondary accounts), but in 1999 it became the subject of renewed investigations (Barton and Price 1999). Floor deposits within the cave and the rock-shelter forming the entrance area included a shell-midden about 10cm thick consisting almost entirely of edible shell-fish, mostly oyster and cockle with fewer limpet and scallop shells. A few pottery fragments identified as Bronze Age were recorded and, as with the earlier excavations, there were scattered human remains from the bottom of the midden. A collection of bronze artefacts was also found in the early excavations, although their relationship with the midden deposits is far from clear (Figure 2.54). Two of the items were tools: a chisel with a pointed tang and a saw consisting of a narrow strip of bronze

serrated along one edge with one end rolled over to form a loop. There was also a broken palstave, and a bracelet that was apparently attached to the saw when found (Laws 1908, 115; Wheeler 1929, 161; Savory 1980a, 117 and fig. 31).

Metalwork

That people were active right across the county in the late Bronze Age is shown by the presence of stray finds and scattered monuments. From about 1100 BC lead-bronze, which although softer allows more complex castings to be made, became common throughout Britain and the range of objects increased considerably to include a greater variety of personal ornaments, cauldrons, shields, socketed sickles, knives and horse-harness. Two industrial traditions are recognized during this period: Ewart Park (1000–800 BC) and Llyn Fawr (800–600 BC).

A few stray finds of late Bronze Age metalwork have been made in the county over recent centuries (Figure 2.53), and more no doubt will be discovered in due course. Important pieces include an axe-blade fragment from St Florence (Lodwick and Besly 2012, 175), a socketed axe fragment from Manorbier (Lodwick and Besly 2009, 85), and a complete socketed axe from Llanwnda, Pencaer (Dyfed HER). A water-worn sword-tip picked up on the beach at Scotch Bay, Milford Haven (Savory 1980a, 114, no. 252) may have eroded from a nearby settlement or perhaps been washed ashore from a shipwreck of the period. Collections of metalwork, often referred to as hoards, are a common feature of the later Bronze Age although the broad term hides a variety of traditions as the pieces discussed above from Priory Farm Cave (Figure 2.54) so clearly show.

A hoard containing items manufactured in the Ewart Park industrial style of the period 1000–800 BC was found on the beach at Freshwater West, Castlemartin, in 1991. It included two South Wales type socketed axes, one plain socketed axe, part of a Ewart Park style sword, part of a Carp's Tongue style sword, and 23 fragments of copper ingot (DAT 1991). More recently, in January 2013, a very similar hoard was found at Marloes. It comprised of ten objects weighing 2.5kg including fragments of two sword blades, a scabbard fitting, a knife, and six pieces of copper ingot (Pitts 2015, 11). Both hoards belong to a type found widely across Atlantic north-west Europe and are sometimes referred to as founder's hoards reflecting an interpretation as the stock in trade of an itinerant metalworker.

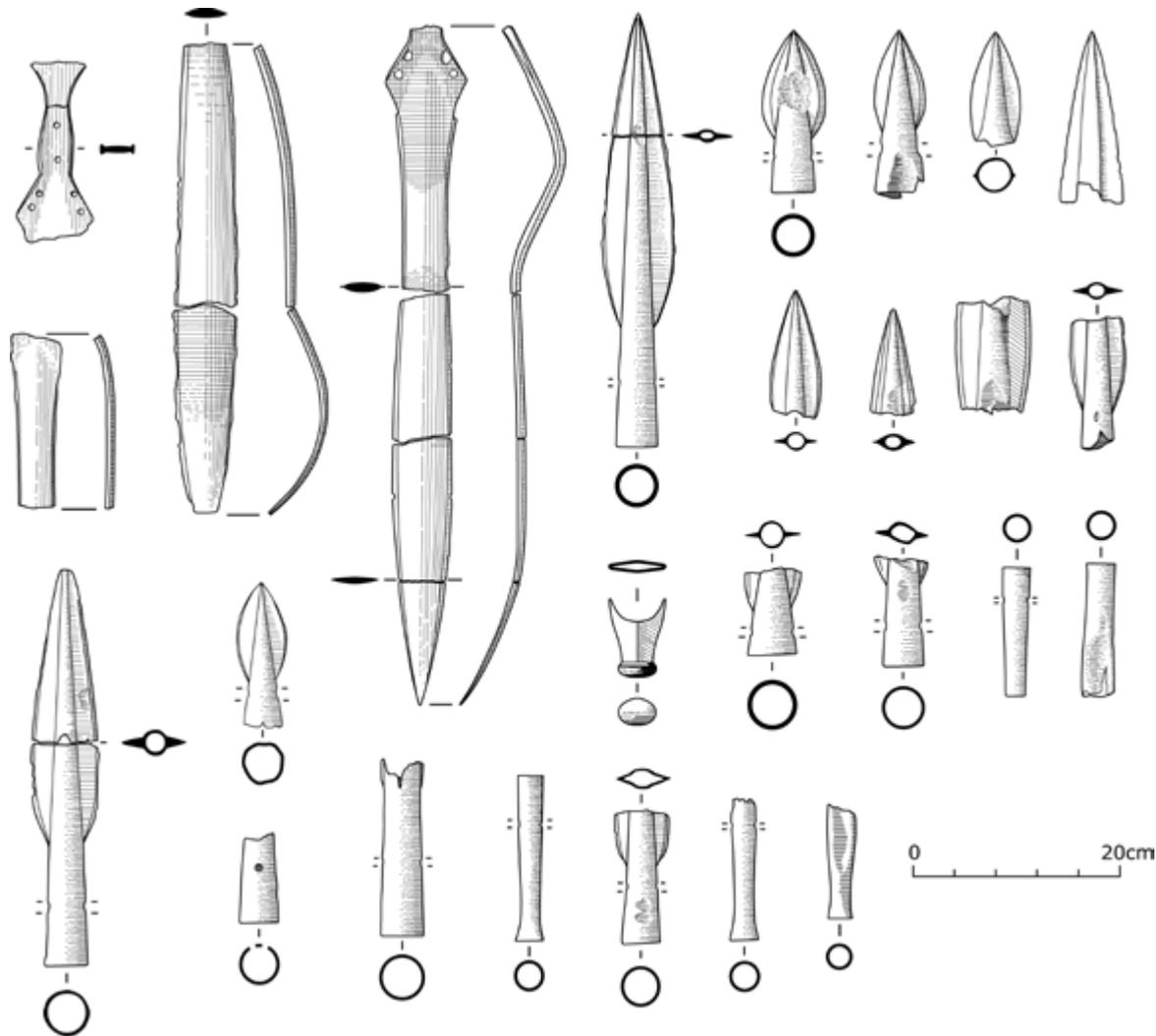


Figure 2.55. Selected items from the Late Bronze Age hoard from Pant-y-Maen (Glancych), Henfeddau, Clydey. [After Griffiths 1957: figs. 1-3].

Quite different is the collection of more than 30 items found in a peat bog at Henfeddau, Clydey, south-west of Newcastle Emlyn (Burgess et al. 1972, 240-1 with earlier references (Figure 2.55). Also known as the Glancych Hoard, three spearheads and part of a sword were found in 1848 but subsequently lost, while 19 spearheads, 5 ferrules, pieces of 2 Ewart Park type swords, pieces of 2 leaf-bladed swords, a tongue chape, and 3 small rings were found in 1859. On both occasions the finds were made while draining the bog by diverting a small stream, and the hoard as a whole can be recognized as a collection of prestige items ceremonially thrown into a wetland as an offering to the deities of the water. Such deposits were common across north-west Europe in the centuries after 1000 BC, with springheads, rivers, lakes, and bogs being favoured places for such offerings (Bradley 1990; Bradley et al. 2015 with earlier references).

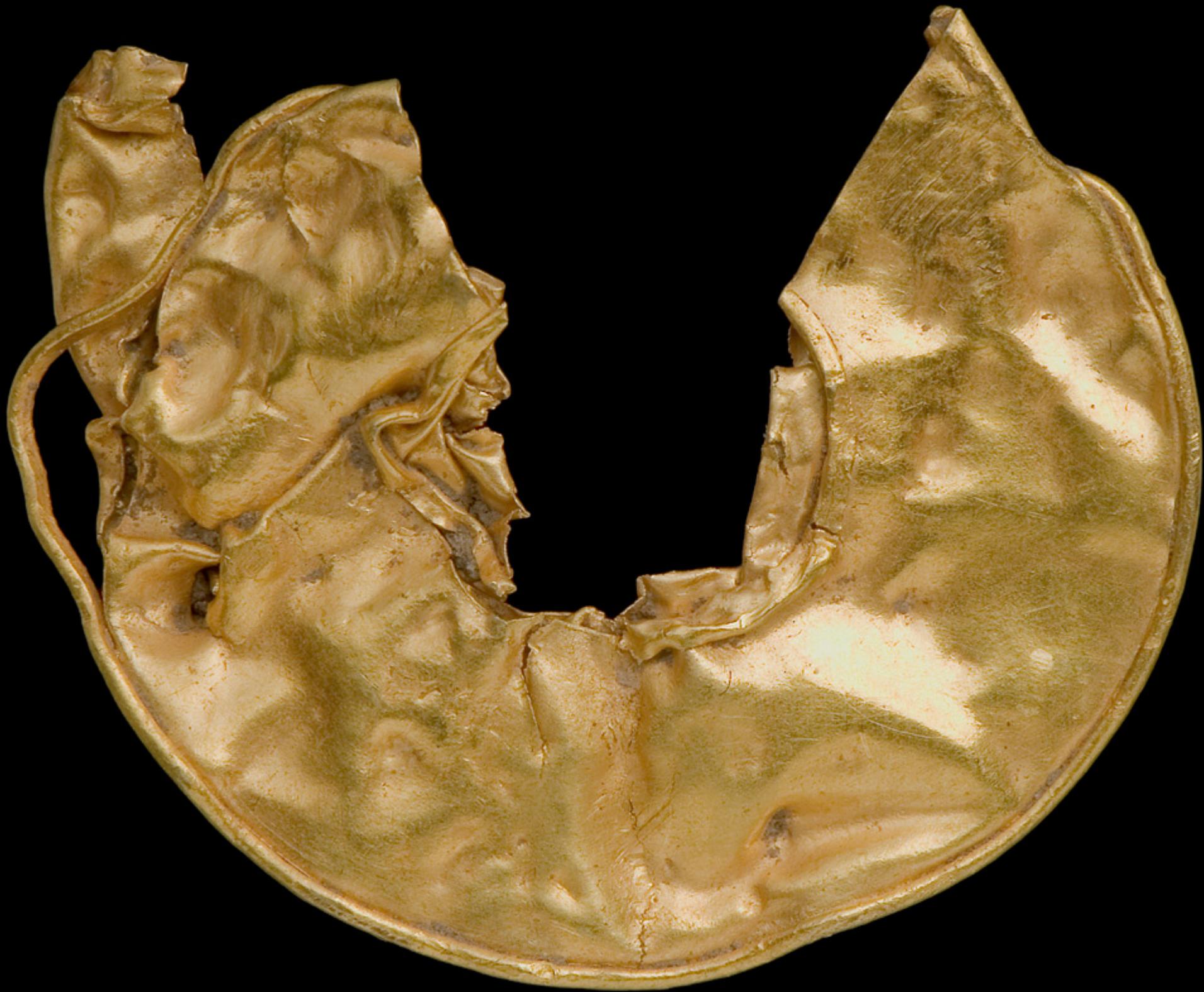
Gold was extracted and worked at Dolaucothi, Carmarthenshire, from at least 1000 BC onwards and was used to make ornaments. The only example of such a product from Pembrokeshire comes from Newport (PAS 2011). It is a plain penannular “lock-ring” with biconical section and hollow interior, originally about 30mm in diameter (Figure 2.56). The object has been crumpled and distorted in the ground and its context is unknown.

British smiths started using iron from about 1000 BC. Iron was much more widely available than copper, tin and lead and the tools had a longer-lasting cutting edge (Collard et al. 2006). The first iron objects were direct copies of those in bronze: sickles, axes, edged tools, and weapons being the most common. One of the earliest recorded hoards containing iron objects was recovered from Llyn Fawr, Glamorgan, (Savory 1980a, 123-4), but no early iron objects are yet known from west Wales.

Hill-top defences and the end of an era

Closely connected with the changing pattern of settlement and land-use in the early first millennium BC was the appearance of defended hill-top settlements on the peripheries of the uplands. Early examples include Breiddin, Powys, occupied from about 700 BC (Musson et al. 1991) and Dinorben in Conwy occupied from the tenth century BC (Savory 1971). The combination of the first defended

Overleaf: Figure 2.56. Gold penannular ‘lock-ring’ from Nevern. Scale in millimetres. [Photograph courtesy of the National Museum of Wales]



hill-top enclosures, the appearance of iron, and the rapid development of personal weaponry represent the first signs of new ways of life that would come to characterize the later part of the first millennium BC and lay the foundations for what are often portrayed as fearsome Celtic societies whose heartlands lay along the Atlantic coasts of north-west Europe.

NOTES AND ACKNOWLEDGEMENTS

In preparing this account we have drawn heavily on reports and papers related to the long-standing programme of research known as SPACES, references to which can be found in the bibliography. All dates cited in this paper refer to calendar years BC or AD using the Gregorian calendar, backward projected where necessary. Radiocarbon dates have been calibrated to approximate calendar years using OxCal v3.10 (Bronk Ramsey 2005) with atmospheric data from Reimer et al. 2004 and are expressed as date-ranges at two standard deviations (*c.*95% confidence). Where known, the laboratory sample number and original determination in radiocarbon years BP are given. The maps were compiled by Marion Shiner, Louise Barker, and Hubert Wilson and the authors drawing on the Dyfed Historic Environment Record and a range of other published and unpublished sources. Thanks to Christopher Catling, Louise Barker, Tom Peart, and Toby Driver at the Royal Commission on the Historical Monuments of Wales; Ken Murphy, Marion Shiner, Hubert Wilson, and Fran Murphy at Dyfed Archaeological Trust; Adam Gwilt and Mary Davis at the National Museum of Wales; Phil Bennett of the Pembrokeshire Coast National Park Authority; Jon Hart at Cotswold Archaeology; the PLANED team; Cambrian Archaeological Association; Fritz Lüth of the Deutsches Archäologisches Institut in Berlin; Bluestone; and Dai Morgan Evans, Rob Ixer, John Lewis, Sian Morris, Heather James, Hubert Wilson, Mike Parker Pearson, Anne Buffoni and Vanessa Constant for help preparing and editing the manuscript and accompanying illustrations; and all those who have participated in and facilitated the work of the SPACES programme over the past 15 years, without whom the project never would have kept going, especially Judith Wainwright.

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