

AN ARCHAEOLOGICAL FIELD
SURVEY OF PART OF THE
BLACK MOUNTAIN IN SOUTH-
EAST DYFED: A CONTRIBUTION
TO THE INTERPRETATION OF
ECONOMY AND SETTLEMENT IN
THE REGION FROM PREHISTORY
TO THE EARLY MODERN PERIOD

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CHAPTER 4: AN INTRODUCTION
TO THE ANALYSIS OF THE
STRUCTURES RECORDED DURING
THE FIELD SURVEY



4.1 INTRODUCTION

The monuments described in *Chapter 3* will be analysed and discussed in succeeding chapters in terms of structural form, topographical setting and chronology taking account of the changing environment described in *Chapter 2*. Similar structural forms will be grouped together; parallels will be sought; a chronological sequence will be suggested; and possible function inferred. The analysis will provide a framework for discussion of land-use in the concluding chapters of the dissertation.

4.2 ESTABLISHING A CHRONOLOGY

Establishing a chronology presents a challenge. No sites have been excavated within the survey area. Indeed, very few monuments of any type have been reliably dated through excavation anywhere in the Southern Welsh uplands. Absence of excavation and dating evidence will be a continual refrain. The chronology will be constructed on the basis of comparison with excavated sites, where possible from the South Wales uplands, but often perforce from elsewhere.

An attempt could be made to restrict more distant excavated analogies to upland contexts in Mid- or North Wales on the grounds that these more-or-less broadly similar environmental zones, part of the same massif, are most likely to offer useful parallels for the survey area. However, even the use of analogies from such ostensibly comparable geographic areas, with known cultural, economic and social similarities, at least in the historic period, is dependent on a raft of assumptions. In particular, such a

geographically restrictive approach may give undue weight to environmental/topographical factors, assuming the Welsh upland massif to be an excessively isolated entity.

Diverse contacts between upland Wales, the coastal belt, and the Marches, and still more distant areas, are attested for the historic period. Such relationships are assumed in prehistory too. Attempts have been made to formalise these ideas into discrete zones of contact, with concepts such as the "Western Seaways" (Bowen 1972) or the "Irish Sea Province" (Moore 1970). While the value and validity of such overreaching concepts is debatable (Alcock 1972, 105-7), there is much evidence for contact between Wales and distant geographic areas within and beyond the Irish Sea littoral. Practices promoting social and cultural mobility and exchange could include economic activities such as nomadic animal husbandry (Webley 1976), the cattle trade (Skeel 1926) and droving (Colyer 1976); the exploitation of lithic resources and metalliferous deposits from prehistoric times onwards (Darvill 1989; Budd *et al* 1992; Parker Pearson 1993, 83-4), and their export, fostering links either directly or through a chain of contact; and also raiding and slaving as well as political alliance and military conquest. These would variously have served at different periods to bring the upland massif into contact with adjacent and more distant areas. Underlying this is the need for areas of relatively low productivity to integrate with the wider region (10.2.7 below). Neither Wales nor its various topographical components can be studied as isolated entities (Lynch 1989, 1).

Hence, data from sites peripheral to the Welsh upland zone, where fortunately rather more archaeological work has recently been undertaken, will often be relevant to both the analysis and discussion contained in subsequent chapters. Reference will also be made to analogues from more distant areas, especially where they have a broadly similar environmental/topographical context. Suites of monuments which are better understood in similar, albeit more distant landscapes, can at least inform thinking on the chronological sequence and interpretation of sites in the Southern Welsh uplands.

However, the ubiquity of relatively simple stony monuments in the uplands cautions against attempting to force the data into either an interpretative or a chronological straightjacket. These sites, particularly those relating to settlement and agriculture, can serve the same essential function in the uplands of many regions of the British Isles while varying considerably in date between and even within these regions. This point is illustrated by reference to any of the syntheses describing aspects of upland archaeology which have appeared over the past two decades (eg. Feachem 1973; Fowler 1983; Chapman and Mytum 1983; Spratt and Burgess 1985).

4.3 A WORKING CLASSIFICATION OF STRUCTURES WITHIN THE SURVEY AREA

In view of the absence of excavation within the survey area, a dearth of excavated sites in the Southern Welsh uplands, and the anticipated lack of close dating, an attempt at elaborate

classification of the structures hardly seems sustainable. It was necessary to formulate a working classification based on superficial comparison at an early stage during the field survey which was used when describing the archaeological remains in Chapter 3. Building on this scheme, the following categories of site are defined for the purposes of analysis:-

a) **Cairns or heaps of stone (5.1)**. These are sub-divided into monumental cairns which are assumed to have a sepulchral function (5.2), and other lesser stone heaps which are presumed to be primarily a consequence of stone clearance for agricultural improvement. The latter are often clustered together or are found in association with stony strips (5.3).

b) **Stone banks (5.4)**. These are either linear in form, partitioning a large area of landscape (5.4.2), or curvilinear, enclosing smaller areas of landscape (5.4.3).

c) **Foundations** which are sub-divided on the basis of form and location into:-

i) foundations on open slopes which are mostly annular to sub-annular in form (6.2).

ii) rectangular single cell foundations with opposed entrances together with a 'building'-platform or 'house'-platform (7.2).

iii) rectangular foundations which are sub-divided into compartments (7.3).

iv) single cell foundations which are rectangular to sub-rectangular in form and are located within river valleys (7.4).

d) Enclosures which are annular to sub-annular in shape (6.3)

e) Miscellaneous structures (Chapter 8).

A synthesis of the analysis of the various structures is presented in Chapter 9.

CHAPTER 5: ANALYSIS OF
CAIRNS, STONE HEAPS AND
STONY BANKS

5.1 CAIRNS

Cairns, or stone heaps, occur singly or in clusters. Some stone heaps are closely associated with short bands of stone of irregular profile and variable length and width.

Around one hundred and four cairns were noted. Piles of stone are ubiquitous features of the upland landscape. In the absence of excavation, scale and visual appearance have to be used as primary criteria for analysis (Yates 1983, 342-3), together with location and associations. Only sixteen, or around 15%, of the cairns are 9m or more in diameter (fig. 5:1). Of these larger cairns, twelve seem to form a distinct category since they are essentially monumental in character and are also sited in prominent topographical locations away from cairns of other shapes and sizes (Table 5:1). They comprise substantial roundish mounds of stone which, when well preserved, tend to have a fairly regular profile.

The remaining four larger cairns (sites 10e, 639c, 812b and c) are excluded from the monumental category by a combination of structure, location and association. They demonstrate a diversity of form, being oval to linear in shape without any regularity of profile. They are located in very much less prominent positions, and are always in close association with smaller stone heaps or stony strips. *Figure 5:2* demonstrates the pronounced altitudinal division between the monumental round cairns and other cairns.

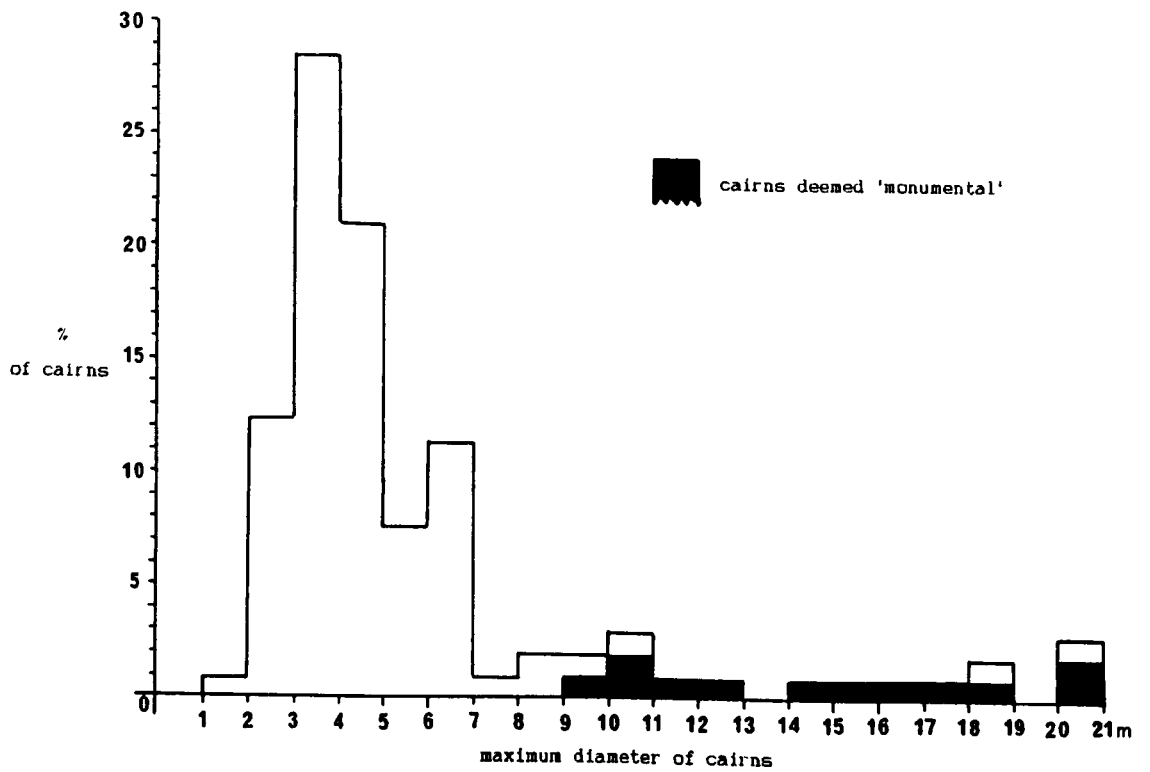


Fig. 5:1. Analysis of cairns on the basis of maximum diameter.

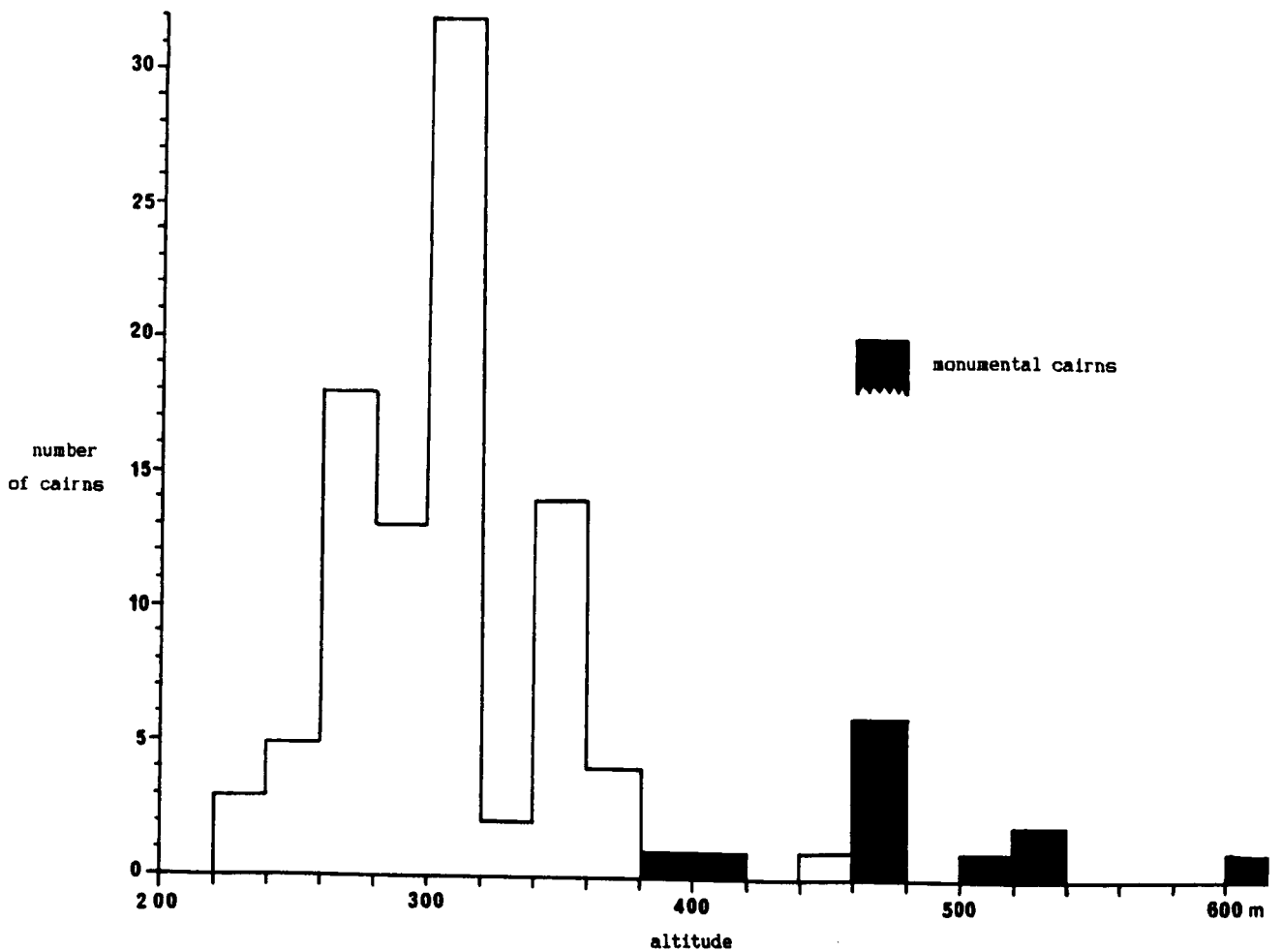


Fig. 5:2. Analysis of cairns on the basis of altitude.

Site 513 on Craig Derlwyn may be a further example of a virtually destroyed monumental cairn (figs. 3:37, 3:40 and 3:41). It is relatively accessible as a source of stone to recent settlement at the southern edge of the common, and also lies within an area of quarrying. However, it is an ambiguous structure. The inner edge of the sub-circular bank, which is the principal visible feature, is ragged and disturbed in places, suggestive of the lip commonly found around robbed-out cairns (RCAHM 1976a, 44). It is also located towards the summit of local high ground. However, there are indications of formality in the break identified in the ring, while the character of the stony area within the turf-covered interior is only apparent through probing. Support for an interpretation of the structure as an annular building foundation could be derived from the presence of a stone clearance strip close-by (514). This site is omitted from the analysis on account of its ambiguous character.

5.2 MONUMENTAL ROUND CAIRNS

5.2.1 Structure

The twelve structures which are considered to fall within this category taking into account structure and location are listed in *Table 5:1*.

Table 5:1 Monumental Cairns on the Black Mountain

<i>Site no.</i>	<i>max dimension</i>	<i>present height</i>	<i>altitude</i>
300	10m	1.2m	410m OD
301	c15m	too disturbed	460m OD
302	14m	1.8m	460m OD
303	11m	1.2m	460m OD
304	16.6m	3m	480m OD
305	20m	3.8m	480m OD
306	17m	2.5m	480m OD
307	18m	3.6m	523m OD
308	9.4m	2m	530m OD
309	too disturbed	too disturbed	619m OD
502	12m	1m	380m OD
858	10.6m	2.2m	508m OD

The monumental cairns comprise large heaps of stone between 9m and 20m across, and up to 3.8m high. They are not distinguished by any particular external feature or elaboration, although mica and crystal in the Millstone Grit stone of which they are built give the monuments a sheen in sunlight. Where well preserved, they are essentially round in plan with a profile similar to a truncated cone. Height is often affected by dilapidation but comparison of maximum dimensions and present heights shows that the round cairns seem to fall into two basic groups on the basis of size. There are those between c. 9m and 13m across with heights of between c. 1 and 2m, and those between 16m and 20m across with heights between 2.5m and 3.8m (fig. 5:3). The stone is derived from local sources, with indications at cairns 304 and 306 of collection in the immediate vicinity in the form of slight hollows around the

edges. No evidence for internal structure was recorded in those sections of cairn core exposed by disturbance.

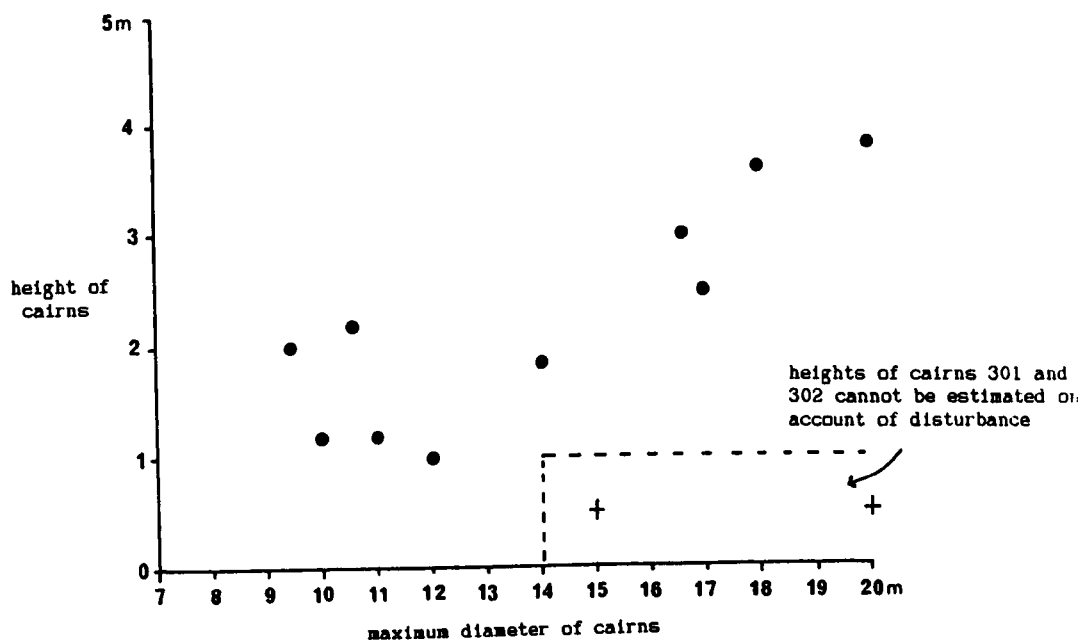


Fig. 5:3. Analysis of monumental cairns in relation to height and maximum diameter.

5.2.2 Siting

Cairns 301 to 306 are located along the relatively narrow crest of the main ridge, usually on local eminences. Sites 301 to 303, Tair Carn Isaf, and 304 to 306, Tair Carn Uchaf, form discrete but dispersed groups. The remaining cairns are on subsidiary topographic features (fig. 5:4). The altitudinal range of the

monuments is between 380m and 619m OD (fig. 5:2) with cairn 309 located on Garreg Lwyd, the highest point within the survey area. All but two of the cairns are sited above 450m OD. There seems to be no close correlation between cairn size and altitude except that the largest cairns, those with dimensions in excess of 16m, are all located at altitudes above 470m OD (fig. 5:5).

All but one of the monumental cairns are within areas of humo-ferric podzols overlying Millstone Grit, although often the local soil cover is now virtually eroded down to the rock. The exception is cairn 502 on Foel Deg-arbedol which is close to the boundary of humo-ferric podzols and cambic stagnohumic gleys overlying the boundary between the Millstone Grit and the Coal Measures (fig. 5:9).

5.2.3 Characterisation and Parallels as Regards Structure and Siting

Of all ^{the} sites recorded during the survey, the monumental cairn category is the one which is best understood through studies and excavation of similar sites elsewhere in the Welsh uplands. The monumental cairns are, in all probability, sepulchral monuments dating broadly to the second millennium bc (5.2.5 below)

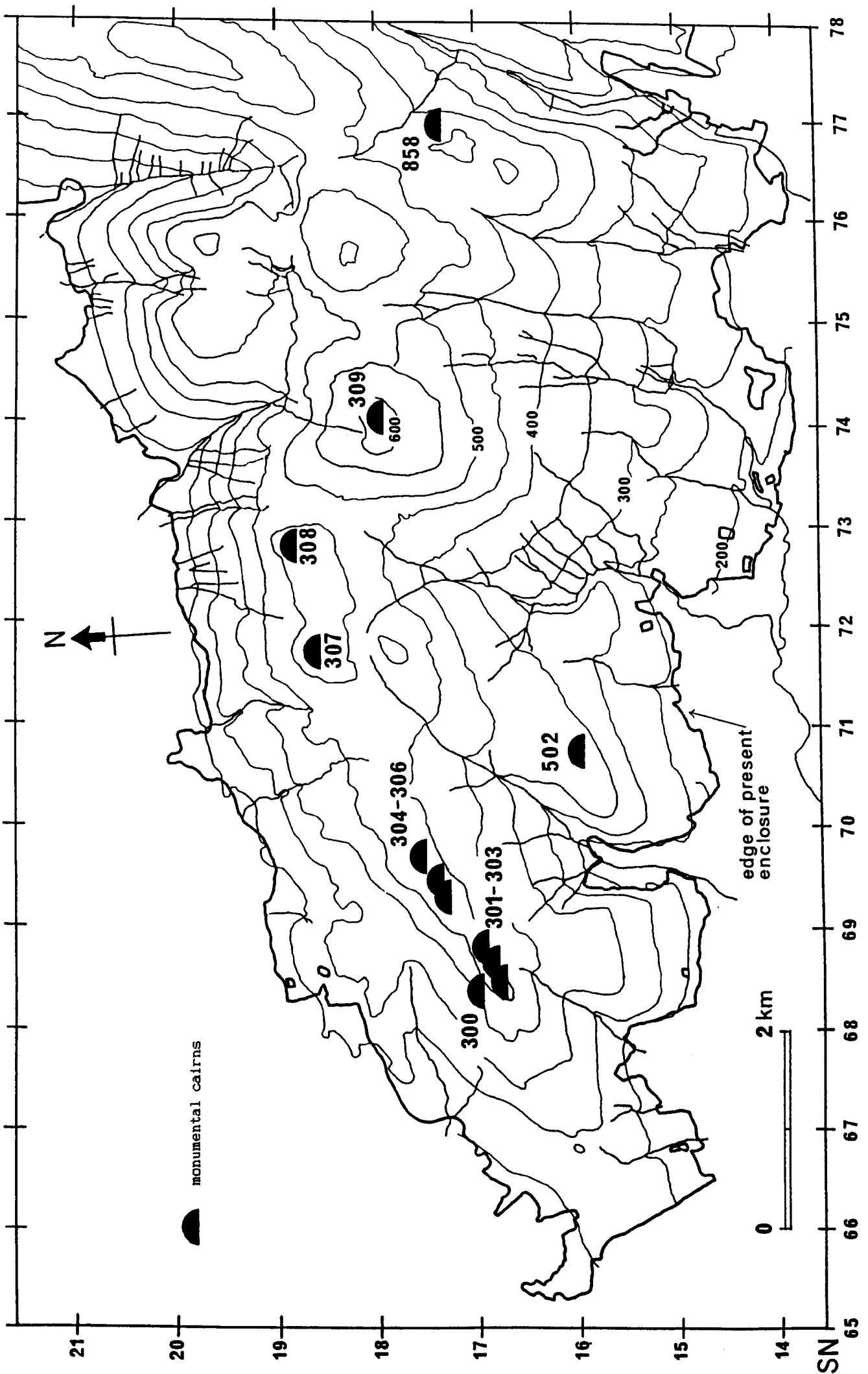


Fig. 5:4. Distribution of monumental cairns in the survey area.

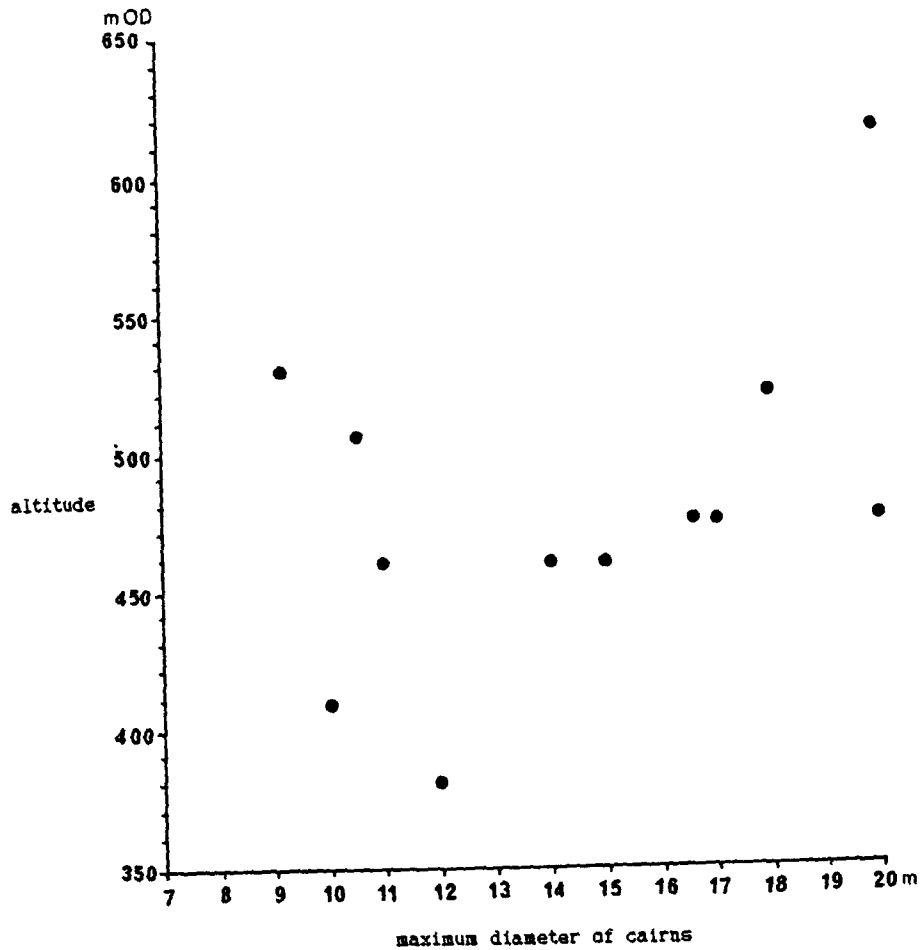


Fig. 5.5. Altitude of monumental cairns in relation to maximum diameter.

The early work of Fox (1959) demonstrated the variety of burial forms and structures known for the conventional Bronze Age in Wales. The more recent excavation of cairns and composite mounds in the Brenig Valley, Clwyd, well illustrates the diversity of structural form, rites and cultural associations which can occur within a single upland group of sepulchral and ritual monuments of the early to mid-second millennium bc (Lynch *et al* 1974; Lynch and Allen 1975; Lynch 1993). The external simplicity of the monumental

cairns on the Black Mountain is notable, compared to the range of more elaborate structured cairns recognized in Wales characterised by ring banks, kerbs and orthostats (Lynch 1972).

An excavated site which is closely comparable in terms of superficial structure and high altitude siting lies at 758m OD on the summit of Drosgl, Gwynedd (Crew 1985) (fig. 5:6). Two primary cists, one of which had associations with cremated bone, the other being empty when excavated, were covered by a cairn, 15m in diameter and between 1.7m and 2m high. The round cairn had been constructed in three sections, two bands of stone being added to the inner cairn which covered the cists. Each element was revetted either by larger boulders and slabs, or by a laid wall. Although no such internal structural elements can be seen at the cairns within the survey area, an apparent internal revetment has been detected in disturbance at a cairn of a similar scale and siting, Garn Big, some 12km to the west near Carmel in south-east Dyfed (Ward 1987, 5-6).

On the Brecon Beacons, diverse cairn forms have been excavated at altitude. For example, the cairn at Pen-y-fan, the highest point in the Brecon Beacons at 886m OD, was found to be around 14m across with a turf core, piled around a cist, overlain by a stone capping just under 1 metre high (Gibson 1991). At Corn Du, a cairn at 850m OD, a cist was set within a peat mound around 0.5m high and 17m across which was covered by a stone capping (Crew 1978). A cairn around 12m across but under 1m high was excavated at Twyn

Bryn Glas, Penderyn at around 440m OD. It is remarkable for the complex internal structure comprising cists and sub-annular boulder settings suggesting modification through time (Webley 1960-62). However, none of these sites is truly comparable, at least in terms of the surviving volume of cairn material, to the scale of the larger Black Mountain monumental cairns.

5.2.4 Funerary Rites and Ceramic Associations

Cremation is the most common burial rite recorded, particularly after the early centuries of the millennium (Burgess 1980a, 254), though of course inhumation is less likely to survive in soils which are usually acid. Multiple burials beneath round mounds are not uncommon (Lynch 1980, 235). Secondary burials inserted into the structure are frequent (Burgess 1980a, 252-8).

Stone cists are a common receptacle for the burial within cairns in the uplands (Roese 1985). A review of cairns on the Glamorgan uplands adjacent to the survey area reveals that many have cists exposed (RCAHM 1976a). However, burials in unelaborated pits cut into the pre-cairn surface occur where geological conditions permit (Roese 1985). Two tree-trunk coffins from the Disgwylfa Fawr round cairn built on an isolated hill at 506m OD in the Plynlimon range in northern Dyfed (Green 1987), demonstrate a further variation. Cremations are often found within ceramic containers, while others may have been placed in perishable containers such as leather bags (Ward 1978, 50-1).

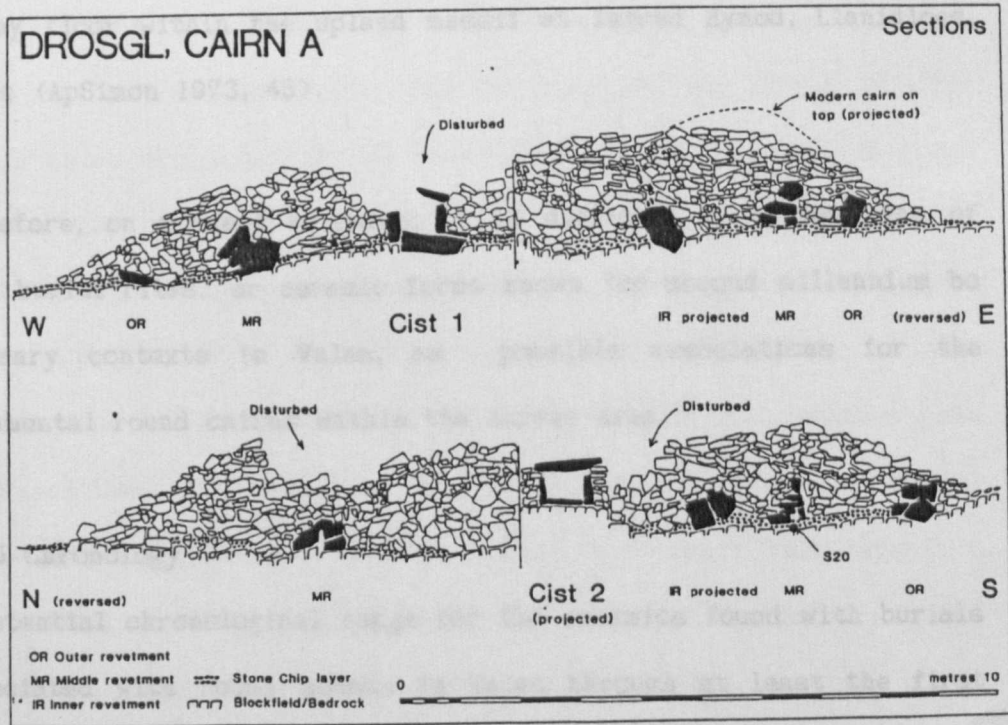
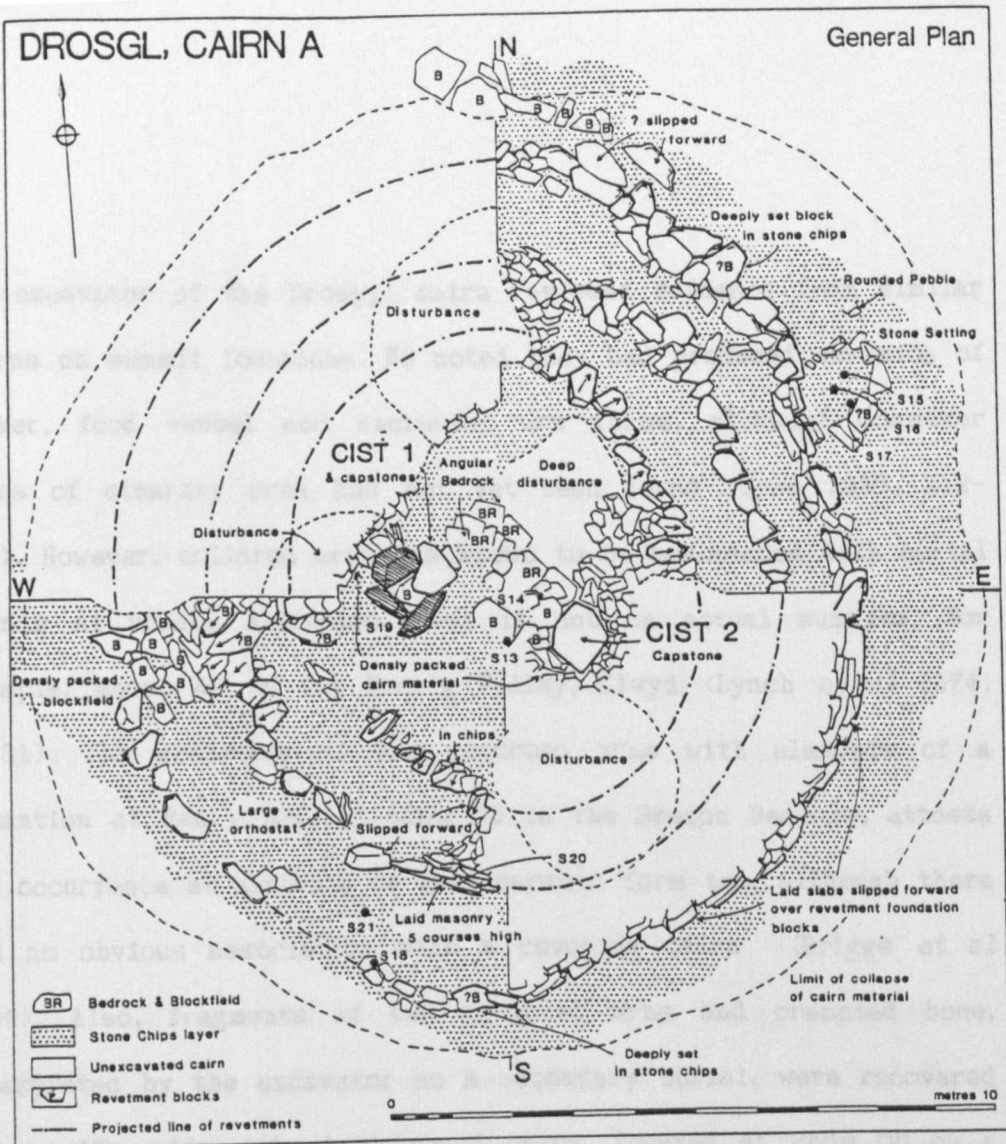


Fig. 5:6. Plan and sections of Drosogl cairn A, Gwynedd taken from Crew 1985.

The excavator of the Drosfyl cairn reviewed evidence from similar cairns on summit locations. He noted they had produced ceramics of beaker, food vessel and encrusted urn forms, although commoner types of cinerary urns had not yet been found (Crew 1985, 312-313). However, collared urns are known to be associated with burial mounds at upland altitudes, even if not on actual summits, for example, mound 40 in the Brenig Valley, Clwyd (Lynch *et al* 1974, 27-31). The discovery of two cordoned urns with elements of a cremation at Fan y Big, at 655m OD in the Brecon Beacons, attests the occurrence at altitude of this ceramic form too, although there was no obvious association with a covering cairn (Briggs *et al* 1990). Also, fragments of two cordoned urns and cremated bone, interpreted by the excavator as a secondary burial, were recovered from a 15m wide, 1.4m high round cairn, located at 240m OD on a valley floor within the upland massif at Ystrad Hynod, Llanidloes, Powys (ApSimon 1973, 43).

Therefore, on present evidence, it is difficult to exclude any of the burial rites or ceramic forms known for second millennium bc funerary contexts in Wales, as possible associations for the monumental round cairns within the survey area.

5.2.5 Chronology

A potential chronological range for the ceramics found with burials associated with round mounds in Wales through at least the first two-thirds of the second millennium bc, if not to the end of the

millennium, would be generally accepted (Savory 1980a, 18-29 and 72-87).

Recent excavation of larger cairns in upland Wales has tended to concentrate on the externally elaborate structured cairns, rather than the superficially simpler cairns (eg. W. E. Griffiths 1960; Lynch *et al* 1974; Lynch and Allan 1975; Hogg 1977; Lynch 1984; Lynch 1986). Radiocarbon determinations for structured cairns, have generally indicated an early to mid-second millennium bc construction date.

The few determinations available from simpler large round cairns in the uplands provide similar indications of date within the early to second millennium bc. The primary inhumation burial at the Disgwylfa Fawr round cairn, northern Dyfed, was placed in a dug-out coffin which provided a determination of 1910 ± 70 bc (Har-2187). The sample dated spanned about 20 tree-rings and lay at least 10 rings in from the outermost surviving ring. The sample is therefore at least 20 years older than the date of the felling of the tree (Green 1987, 48-89). Material from the *uppermost* levels of peat *beneath* the Corn Du composite mound in the Brecon Beacons gave determinations of 1850 ± 75 bc (Car-201) and 1745 ± 70 bc (Car-202) (Crew 1979). A primary cremation burial in a small cist beneath a 15m wide, 1.4m high round cairn, at Ystrad-Hynod, Llanidloes, Powys, produced a determination of 1500 ± 140 bc (NPL-243) (ApSimon 1973, 41-43).

Excavations of upland monuments, at Trelystan in Powys (Britnell 1982) and at Boncyn Arian and other sites in the Brenig Valley, Clwyd (Lynch *et al* 1974, 12-18; Lynch and Allen 1975, 31-37; Lynch 1993), illustrate how composite burial mounds of earth, stone and timber are the product of both continued usage and several stages of structural development and extension. Secondary structural modification of cairns built entirely of stone is more difficult to detect than mounds containing an earthen component. However, it has been recognized at Twyn Bryn Glas round cairn in the Brecon Beacons (Webley 1960-62), as well as at more elaborate structured cairns (eg. Lynch *et al* 1974, 31-37; Ward 1988, 160-167). Such modification must be considered likely for many large round cairns.

Secondary activity in the form of later burial episodes is more readily identifiable and, as already noted, a common occurrence (Burgess 1980a, 252-8). For example, there was a second dug-out burial inserted into the Disgwylfa Fawr round cairn, with a radiocarbon determination, from a sample just under the bark, of 1350 ± 80 bc (Har-2677) (Green 1987). A cremation accompanied by a pygmy cup was inserted into the Twyn Bryn Glas cairn, Brecon Beacons, which contained earlier burials associated with Beaker ceramics (Webley 1960-62). The Ystrad Hynod cairn had a secondary cremation burial associated with cinerary urns, while the final episode of funerary activity was represented by cremated bone scattered over the surface of the cairn (ApSimon 1973, 43-45). A sample of charcoal from amongst the cairn material close to the bone produced a radiocarbon determination of 530 ± 145 bc (NPL-241).

The excavator associates the determination with the cremated bone (ApSimon 1973, 50-51). This is possible, but the integrity of the sample and its association must be uncertain in view of the loose matrix of cairn material. None-the-less, these examples illustrate the potential of monumental round cairns to continue to be of significance well after their initial construction.

While it is clear that burial cairns were constructed from the early to mid-second millennium bc and continued to be used, and sometimes modified, in succeeding centuries, it is less clear when the practice of cairn construction actually ceased. It is suggested that fewer new cairns were being constructed by around 1400bc (Burgess 1980b, 313), although regionally the cairn building tradition may have endured to towards the end of the millennium. Cairns with a late date tend to be smaller monuments such as kerb-cairns (eg. Graham Ritchie *et al* 1974-75).

However, at Great Carn on Cefn Bryn, Gower, a 20m diameter by 1m high cairn covered a badly disturbed primary grave pit. One end of a badly decayed plank survived on the floor of the pit. On this lay elements of almost totally decomposed bone, most likely the remains of an inhumation. The plank produced a radiocarbon determination of 1140±60bc (OxA-1816). It is possible that a plank of such a width comprised older rather than younger wood. Therefore, the date of its actual use could fall towards the end of the second millennium bc (Ward unpublished; Hedges *et al* 1990).

Such a late primary date for the construction of a large cairn and the practice of inhumation burial, is unusual and there is at present no strong evidence for anything other than a localised continuation of cairn construction in the latter part of the second millennium bc. This is perhaps borne out by the scarcity of examples of later Bronze Age metalwork accompanying burials found in mounds or cairns (Burgess 1976). Where known, the context is frequently unclear. However, it is interesting to note, in view of the suggested later second millennium bc date for the inhumation from Great Carn, that when later Bronze Age metalwork is associated with burials in England and Wales, the rite is most frequently inhumation, at odds with the dominance of cremation in the middle of the second millennium bc (Burgess 1976, 95).

5.2.6 Contemporary Landscape

On account of their location where the ridge crest narrows, the Tair Carn Uchaf and Tair Carn Isaf cairns are currently notable features in the regional landscape. They are visible at a distance from lower ground both north and south of the Mountain. An extensive distant horizon is available from each of the cairns. From the Tair Carn Uchaf and Tair Carn Isaf cairns, and from cairn 309 on Garreg Lwyd, there is an almost panoramic distant horizon.

In view of the probable early to mid-second millennium date for these cairns, it is likely that the landscape at this altitude would have been grass or heather-covered, containing areas of ombrogenous peat, and relatively devoid of trees with only some

scrub cover (2.5.6 above). Hence, trees are unlikely to have interfered with the prospect from the cairns, or distant views of them from high ground in the region. However, trees may have obstructed the view of an observer looking up to the cairns from more wooded lower slopes.

5.2.7 The Apparent Absence of Second Millennium bc Ceremonial Monuments Within the Survey Area

Monumental round cairns are only one of several types of structure known from this period which were apparently built for ritual and ceremonial activity. Examples of other broadly contemporary structures are stone 'circles', monuments with their origin in the third millennium bc (Burl 1976, 45-50); structures of which the most prominent surviving element is a standing stone; and a range of other monuments primarily of stone, such as ring cairns (Lynch 1972), but also including timber settings. Human remains are not always evident at such sites. Where present, they often seem to have been manipulated in ways which do not seem to constitute conventional interment, suggesting their presence is ancillary to other purposes.

The character of activity at such structures is patchily recorded in Wales, while the relationships between the various forms of monument are ill-understood. Only one 'circle' of free-standing stones has been adequately excavated, at Ynys Hir, Mynydd Epynt, Breckonshire, although the results are uninformative. A single post-hole and a pit, probably relatively recent disturbance, were

found within the interior (Dunning 1943). Monuments comprising large upright stones within ring banks, enclosing open central areas, have been excavated. An example is the Druids Circle on Penmaenmawr, Caernarvonshire which contained a central pit with a fill of quartz fragments (W. E. Griffiths 1960). Work at other such monuments in Wales and beyond and their relationship to other structures apparently fulfilling parallel or complementary roles, such as ring cairns, has been discussed by Lynch (1972 and 1979).

Ring cairns are in essence annular or sub-annular banks of stone which may be broken by entrances or elaborated by low orthostats or kerbs. They are the most extensively excavated of this spectrum of monuments in Wales. The results of various excavations and field-work in south-west Wales are summarised in *Appendix 1*. These lead to the interpretation of such structures as having had a primary ceremonial rôle as opposed to one concerned mainly with housing the dead (*Appendix 1*, 169-171).

Standing stones are now recognized, at least in South Wales, as often representing only one element in a complex of features which can include timber settings or buildings, arrangements of smaller stones, and pits containing deposits of various materials including human bone and charcoal. They are regarded as social and territorial foci (G. Williams 1988, 54-60).

Timber settings have for long been recognized beneath burial mounds in Wales (eg. Fox 1959). The possibility has been canvassed

that some could have been free-standing structures prior to the raising of the mound (Lynch *et al* 1973, 61). Only recently, however, has a circular setting of free-standing timber posts been identified at Sarn-y-Bryn-Caled, Welshpool, Powys. A central pit contained sepulchral deposits, but a role for the structure extending beyond that of conventional disposal of the dead is suggested (Gibson 1992). Such small scale free-standing timber structures with a ritual/ceremonial function, are probably unexceptional even though difficult to detect. However, they have located elsewhere in the British Isles. For example, 'circles' of free-standing stones have been found to be preceded by timber uprights at Machrie Moor, Arran (Haggarty 1988), while at Street House Loftus, Cleveland, there was a small enigmatic palisaded enclosure with ritual attributions belonging to this period (Vyner 1988).

This range of structures is interesting for present purposes for two reasons. Firstly, their rôle appears to extend beyond that of interment of the dead, and, secondly, because they can usually be found in Wales in upland landscapes such as the survey area. Stone circles are well represented in upland locations (Grimes 1963, 98-102); standing stones are found in the uplands too, although usually towards the lower end of the local altitudinal range (G. Williams 1988, 5-7); and ring cairns and related structures reach high into the uplands (Lynch 1972).

Therefore, whereas the monumental round cairns provide a funerary dimension to activity in the survey area for the early to mid-second millennium bc, stone monuments fulfilling a potentially wider ceremonial rôle are missing. The example of the Sarn-y-Bryn-Caled timber circle, as well as the many timber arrangements found beneath burial mounds at altitude, raises the prospect that wooden structures with a ceremonial function could await discovery in the survey area. None-the-less, the absence of early to mid-second millennium bc stone structures which could extend ritual and ceremonial activity beyond sepulchral deposition is unexpected in view of their presence elsewhere in many parts of the Welsh uplands. This will be addressed further in *Chapter 12* in relation to wider questions of land-use (12.5.5 below).

5.3 OTHER CAIRNS AND STONE CLEARANCE FEATURES

5.3.1 Characterization

Only a few non-monumental cairns occur as isolated structures in the Black Mountain landscape. Most of the smaller cairns cluster in groups, sometimes associated with stony strips. Such small cairns, particularly when grouped together or associated with stony strips, are now regarded throughout the uplands of Britain as primarily the product of stone clearance for agricultural improvement (Feacham 1973). This is in preference to their frequent earlier designation as 'cairn cemeteries,' exemplified in South Wales by the work of Fox and Murray-Threipland (1942-43).

Distinctions between clearance piles and sepulchral structures are, however, not entirely clear-cut and ambiguities remain (Fowler 1983, 145-50). For example, the collection of stone for monumental cairns may contribute to the process of stone clearance (Graham 1956-57, 21-3; Fleming 1971a, 2-7). Also, relatively small isolated cairns may cover burials. Again, a burial can be found beneath only one of a cluster of several cairns, the others appearing to be real examples of stone clearance heaps. Examples of this are known from the partially excavated smaller cairn groups in the Brenig Valley, Clwyd (Lynch *et al* 1974, 45-49), and at Penrhiw Cradoc, Mid-Glamorgan (Owen-John 1986).

5.3.2 Likely Stone Clearance Features on the Black Mountain

It is proposed that most of the non-monumental cairns on the Black Mountain are probably stone clearance heaps. Clusters of stone heaps, sometimes in combination with stony strips of variable width and length and, more rarely, in association with slight lynchets, define areas where stone-picking may have been extensive. A number of isolated stone heaps are also likely to be a consequence of clearance. The sites in *Table 5:2*, each comprising several stone heaps and/or stony strips, are thought to be the product of stone clearance (fig.5:7).

Table 5:2 Stone Clearance Features Forming Plots

<i>Site no.</i>	<i>Character of Clearance</i>	<i>Altitude</i>	<i>Aspect/ Location</i>
10	Dispersed group of up to 5 stone heaps (fig. 3:4).	350-370m OD	NE slope
27	Cluster of 8 stony heaps and a stony strip (fig. 3:13).	350-360m OD	N slope
29	A stone heap within a plot of c. 1500m ² defined by stony strips (fig. 3:12).	420m OD	NW on terrace in valley side
123	Two cairns associated with slight lynchets defining plot c. 600m ² (fig. 3:18).	300m OD	N slope
133	Cluster of 3 stony piles (fig. 3:14)	360m OD	N slope
139	Stony heap and strip (fig. 3:14).	300m OD	N slope
142	Cluster of up to 14 stone heaps defining a plot of c 2500m ² (fig. 3:21).	310-320m OD	N slope
409	Dispersed group of up to 8 clearance features (fig. 3:33).	300m OD	S slope
508	Stony strips and lynchets define a plot 300m ² (fig. 3:40).	330m OD	S slope
629	Stony strips and a cairn define plots totalling c. 1000m ² (fig. 3:48)	250m OD	S on promontory in valley
632)	A stony strip extending from an annular foundation and 2 stony	310-320m OD	SW slope
637)-	heaps indicate a plot (fig.3:42).		
638)			
639	Stony strips and heaps define a plot c. 1000m ² (fig. 3:52).	270-300m OD	S slope
715	Around 14 concentrations of stone indicate clearance (fig. 3:56).	290-300m OD	S slope

Table 5:2 (continued)

<i>Site no.</i>	<i>Character of Clearance</i>	<i>Altitude</i>	<i>Aspect/ Location</i>
731	Stony strips define area of c. 140m ² (fig. 3:53).	245m OD	S on valley floor
737	Dispersed group of up to 15 stone heaps (fig. 3:59).	260m OD	WSW slope
750	Stony strips define plots totalling c. 800m ² (fig. 3.61).	260-270m OD	S slope
752	Stony strips and heap define plot of c. 350m ² (fig. 3:62).	225m OD	S slope
806	Stony strips and heap define plot of c. 1800m ² (fig. 3:66).	270m OD	S slope
808	Dispersed group of at least 6 stone heaps (fig. 3:63).	310m OD	S slope
812	Stone heaps and a stony band (fig. 3:67).	230-250m OD	SE valley side

The following single stony heaps may also represent stone clearance: sites 11, 17, 109, 128, 129, 130, 141, 500, 501, 509, 623, 702, 714, 716, 717, 730, 738, 802 and 807. Sites 514 and 740, comprising single stony strips, are also probably the result of stone clearance (fig. 5:7). It is noticeable that many of these stone heaps are close to major clearance features, and may well be an outlying element. For example, heap 141 lies about 180m to the north-north-east of the cluster of stony heaps 142; stone pile 509 is 75m south-east of plot 508; heaps 714, 716 and 717 are in the vicinity of cluster 715; while heap 807 is south-west of cluster 808 (fig. 5:7).

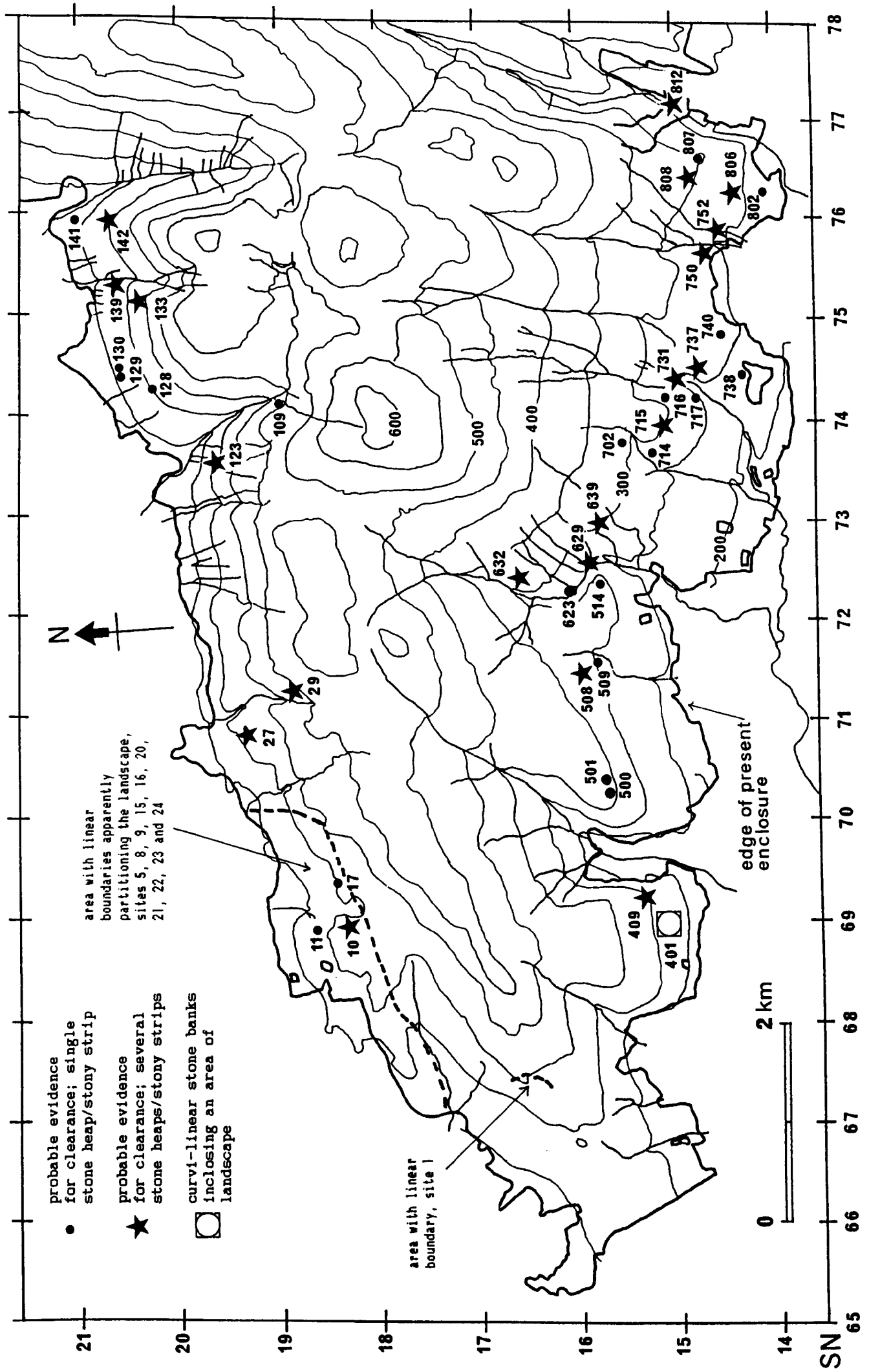


Fig. 5.7. Distribution of likely clearance features.

5.3.3 Function of the Stone Clearance

While the beneficial effects of stone-picking for the improvement of pasture have been noted (Limbrej 1975, 165), stone clearance is more often associated with tillage and cultivation (Fowler 1984, 18). The seemingly random positioning of the clearance heaps within clusters suggests hand digging (Mercer 1984, xi-xii), although extended linear stony strips at some plots could be seen as clearance in response to the use of a light ard. The manoeuvrability of the light ard in restricted circumstances has been noted (Rees 1984, 78). Hence, ploughing is not precluded even amongst clearance heaps. The clearance strips may represent incipient boundaries which through time could develop into barriers protecting the cultivated area from grazing animals (Fowler 1984, 18-19). Wooden fencing could have protected plots too. However, physical barriers around cultivation plots may not be necessary in a mixed-farming regime (Smith 1985, 276), particularly if stock are permanently tended on pastures away from the cultivation.

5.3.4 Associations

The stone clearance can mostly be associated with annular and sub-annular foundations and enclosures, but there are also associations with compartmented structures and other rectangular to sub-rectangular foundations. Details of the associations will be noted below in 5.3.6 in relation to the chronology of the various forms of foundation. However, the possibility of their association with structures constructed only of timber, or even with buildings located outside the survey area should be remembered.

5.3.5 Location

The altitudinal range for clearance features is from around 220m OD to 440m OD (fig. 5:8). Taking the clusters of stony heaps and strips together with the more isolated examples, around 85% of clearance features fall within a 120m altitudinal band of 240m OD to 360m OD (figs. 5:7 and 5:8). Thirty-five percent have a northerly aspect, 65% a primarily southern aspect. Only four examples are within valleys. The others are on open slopes (Table 5:2; fig: 5:7). Around half the principal clearance features are on cambic stagno humic gley soils. The other principal clearance features are distributed across brown rankers, humic rankers, ferric stagnopodzols and humo-ferric podzols (fig. 5:9). The association of monuments and soils will be discussed in *Chapter 9*.

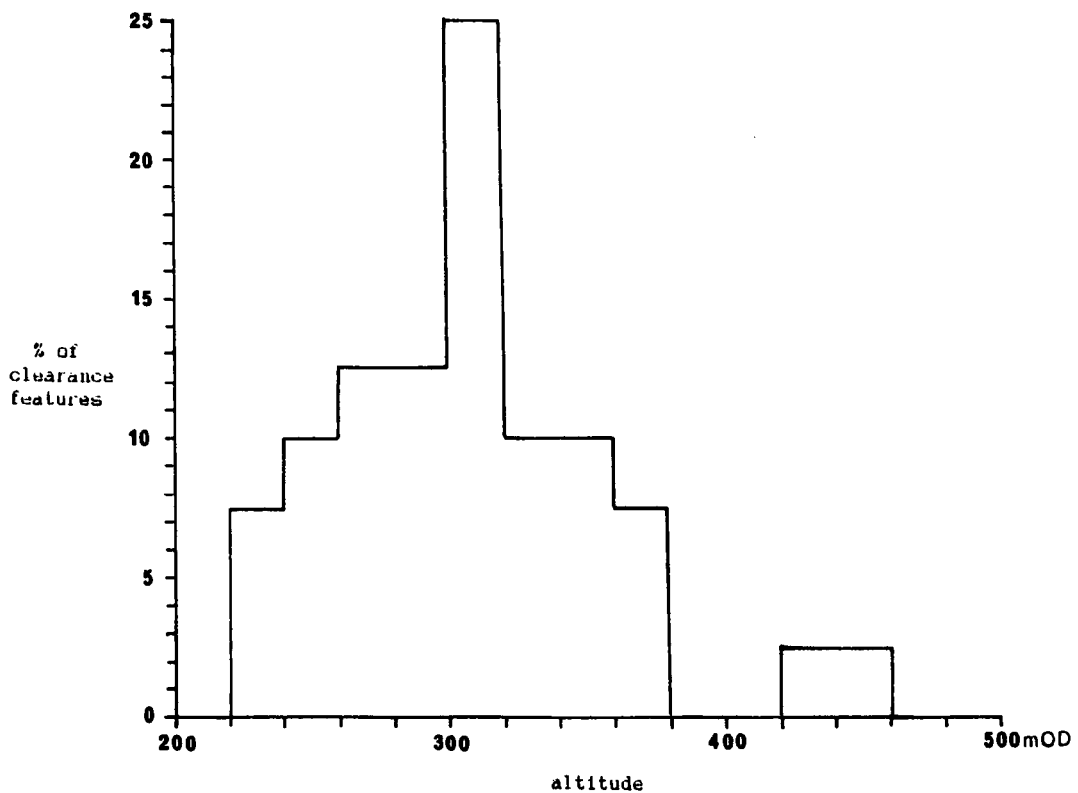


Fig. 5:8. Likely clearance features in relation to altitude.

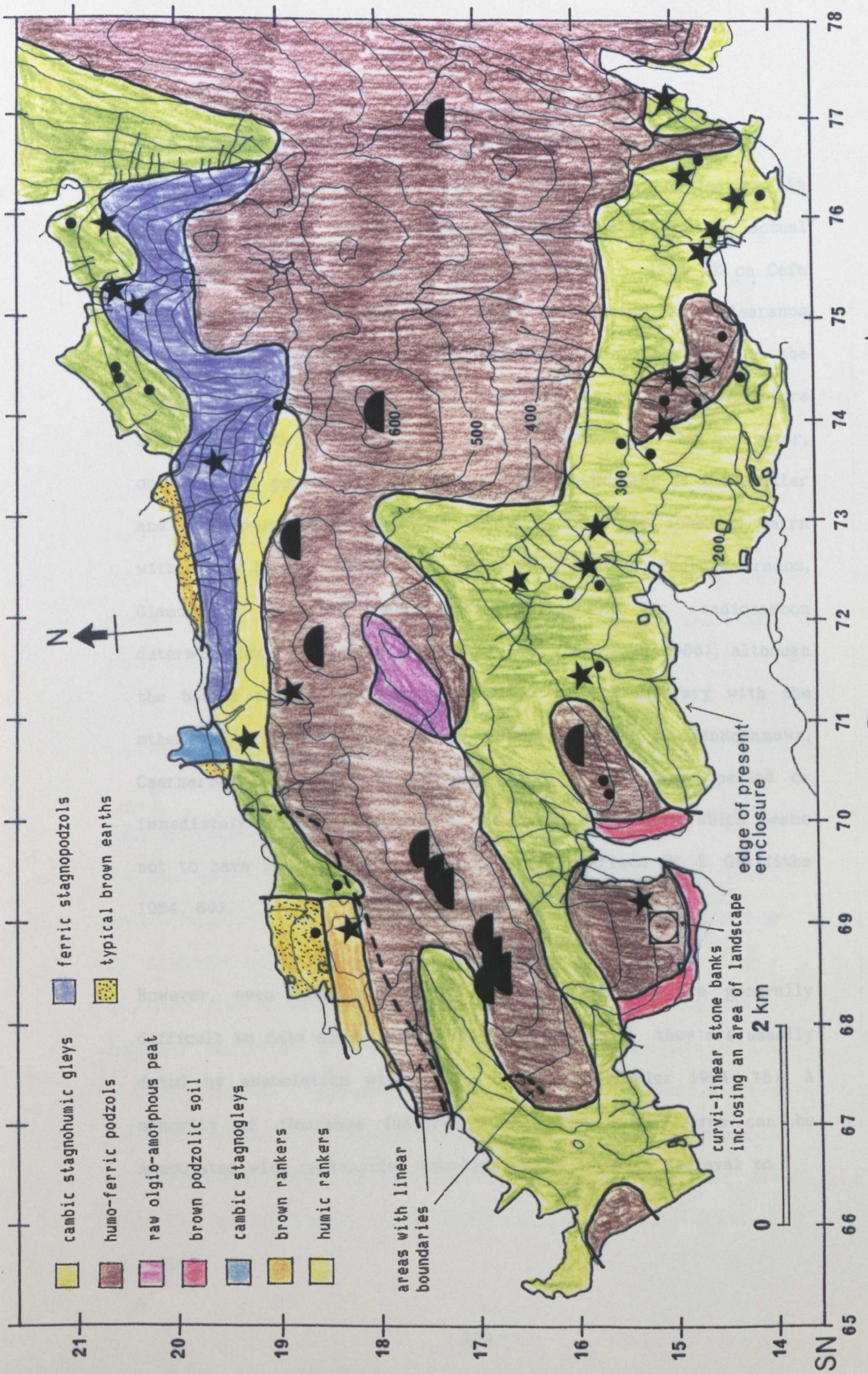


Fig. 5:9. Monumental cairns , principal clearance features  and other clearance features  in relation to soil types.

5.3.6 Chronology for Stone Clearance Features

Limited indications of the date of stone clearance features in the Welsh uplands are forthcoming from excavation of the actual stone heaps. A group of small stony mounds at c. 420m OD on Cefn Cilsanws, Brecon Beacons, most likely a cluster of clearance features, was assigned to the later Neolithic. This was on the basis that the excavated stone pile overlay a simple structure associated with Mortlake ware. In the opinion of the excavator, only a short period elapsed between the abandonment of the shelter and the accumulation of stone (Webley 1958). The funerary cairn within the Brenig cairn field, Clwyd, and that at Penrhiw Cradoc, Glamorgan, provided mid-second millennium bc radiocarbon determinations (Lynch *et al* 1974, 45-49; Owen-John 1986), although the burial cairns need not necessarily be contemporary with the other stone heaps in the groups. Clearance heaps on Penmaenmawr, Caernarvonshire, are tentatively dated to the Roman period or immediately preceding period on the basis of pottery which seems not to have lain for long on the pre-cairn surface (W. E. Griffiths 1954, 80).

However, even when excavated, clearance features are generally difficult to date directly with any precision and they are usually dated by association with other structures (Fowler 1984, 18). A minority of clearance features within the survey area can be associated with rectangular foundations for which a Medieval to

early Post-Medieval date is suggested (7.3.8 below). Most, however, are more likely to be associated with annular or sub-annular foundations or enclosures for which an approximate date range of 500bc, or even earlier, to 500AD appears possible (6.2.3 and 6.3.3 below).

5.3.7 Contemporary Landscape

On the basis of the suggested date range, broadly the first millennium bc through to the later Middle Ages, the stone clearance features were associated with the progressive clearance of woodland from the survey area, culminating in more or less open grass-covered slopes by the end of the first millennium AD (2.5.4 and 2.5.6; fig. 2:3 above).

5.4 STONE BANKS

5.4.1 Introduction

The features considered in this section are stone banks which appear formally to demarcate areas of the landscape, as opposed to the irregular stony strips which result from stone clearance for a localized plot, which were considered in 5.3 above. This is not to say that the banks are not built of stone which is part of the process of stone clearance. However, they are distinguished from the stony strips as evidently formal constructions, They are laid out, either as predominantly linear banks which partition the landscape, or curvilinear banks which enclose smaller areas of landscape.

5.4.2 Linear Stone Banks

There are a number of linear stone banks located over some 4km of the north-western slopes of the Mountain between the 300m and 350m OD contours (sites 1, 5, 8, 9, 15, 16, 20, 21, 22, 23 and 24) (figs. 5:7 and 5:10). The lengths of bank which are visible are relatively short, frequently disappearing into peat. There is a predominantly north-east to south-west axis, with other stretches of bank at right-angles to this axis. The axis appears to follow the line of natural features such as sink-holes (assuming the sink holes to pre-date the banks) or minor ridge crests. Bank 5 appears to terminate at a river, the Nant Gwythwch (fig. 3:4). The slopes partitioned by the banks are now covered by a diverse suite of soils, cambic stagno humic gleys, humo-ferric podzols and brown rankers (fig. 5:9). There seems to be a concern to partition the landscape into larger not smaller units, although there are suggestions of smaller blocks of land, or fields, demarcated at site 9 (fig. 3:8). The banks arguably represent the vestigial remains of a co-axial boundary system which was intentionally laid out as a single entity, respecting one main axis in the landscape.

It is notable that there is no evidence for such a system of banks *partitioning* the landscape elsewhere within the survey area. The present extent of the banks may be a close approximation of the area of currently unenclosed landscape originally partitioned. However, their location close to the edge of the modern enclosure hints strongly that the system was originally probably more extensive at lower altitude.

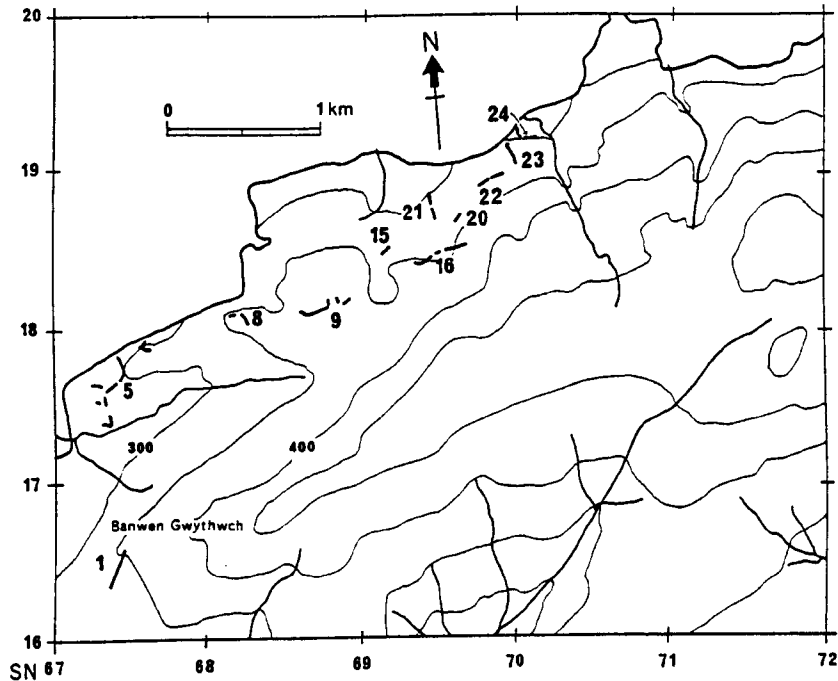


Fig. 5:10. Stone banks partitioning the landscape at north-western edge of survey area (after RCAHM Wales Landscape Survey with amendments).

They seem therefore to represent the upper edge of a field system, the full extent of which at lower altitude is unknown, below around 300m OD to the north-west and north. It is also entirely possible that this field system continued around the lower slopes of the massif, to the east and south-west, nowhere else extending to altitudes sufficiently high to take it on to currently unenclosed land.

The complexities of such boundary systems are best known from work on Dartmoor (Fleming 1978, 1983, 1987a and 1989). Some of the

boundaries there started life as fences, and there must be the possibility of timber fences both preceding and serving as subdivisions within the stone boundaries on the Black Mountain. It has also been suggested that the boundaries could have been complemented by hedges. The Dartmoor system is considered to have been laid out by around 1300bc and to have continued in use for at least two or three hundred years although the character of activity in the early first millennium bc is unclear (Fleming 1987a).

Such co-axial systems are known from other areas and periods. A later Neolithic field system of the third millennium bc has been excavated in Co. Mayo, Ireland (Caulfield 1978), while a date of around 2000bc has also been proposed for boundaries on the Scilly Islands (Fowler 1978, 49-50). Romano-British and early Medieval dates are also possible for such systems (Fleming 1987b, 198-9). However, on the basis of present knowledge, to be rare in the South Wales uplands.

There is, however, a boundary system very similar to that on the Black Mountain on Mynydd Llangyndeyrn, in south-east Dyfed, some 20km to the west along a continuation of the same spine of high ground, at around 250m OD (*Appendix 2*, figs. 1 and 2). Stone banks can be traced along the Mynydd Llangyndeyrn ridge for a distance of c. 1.6km. As on the Black Mountain, there is a primarily east to west axis in which the line of natural rock outcrops figures prominently. Again, there are offshoots to north and south apparently defining smaller enclosures or fields. On the basis both

of the relationship with other monuments of early to mid-second millennium bc ritual/ceremonial form in the immediate vicinity, and the pedological sequence, a later second millennium bc date has been tentatively suggested for the system on Mynydd Llangydeyrn (*Appendix 2*, 54-55, and Ward 1988).

A late second to early first millennium bc date is preferred for the landscape partition on the Black Mountain for two reasons. Firstly, there is the analogy with Mynydd Llangydeyrn. The parallels between the linear banks on Mynydd Llangydeyrn and those on the Black Mountain are close. They occupy the same type of landscape and make use, in very similar ways, of natural features to determine the major axis. The creation of small 'fields', with banks at right-angles to the main axis within hollows between minor ridges or cuestas, is also comparable (cf. site 9, fig. 3:8, on the Black Mountain, with walls 4, 5 and 6 on Mynydd Llangydeyrn - *Appendix 2*, 49 and figs. 2 and 3). Secondly, the peat, which clearly overwhelms the linear banks on the Black Mountain, could be linked with the climatic deterioration at this period, which is often associated with the onset or recurrence of peat formation (2.2.3, 2.4.2 and 2.5.4, *Phase 4*, above). However, as has been noted, widely varying dates are proposed for such field systems elsewhere, and the preference for a later second to early first millennium bc date must be viewed in the context of a possible wider prehistoric to proto-historic chronological band.

Within the area of the linear stone banks on the Black Mountain are small stone heaps, annular, sub-annular and compartmented rectangular foundations and enclosures (figs. 3:6, 3:9 and 3.11). Only foundation 19 is particularly close, possibly linked to an element of the linear bank system (fig. 3:9). In view of the probable prehistoric, or possibly proto-historic dating parameters proposed for the linear banks, a relationship with the two compartmented rectangular buildings, which are probably of Medieval date (7.3.11 below), is most unlikely. However, an association with any of the other putative pre- and proto-historic structures within the area is possible.

The function of such field systems is still uncertain (Fleming 1987b, 195). The best preserved, and most intensively studied system, on Dartmoor, is interpreted as the division of the landscape into blocks of grazing land although small-scale arable cultivation is indicated by pollen analysis (Fleming 1978, 105-8; 1988, 105). The parcelling-up of the landscape is clearly advantageous if there is concern both to regulate the supply and improve the quality of grazing. Division may also facilitate in-field/out-field cultivation. The banks are regarded primarily as boundaries, not barriers, indicating ownership, perhaps with the landscape beyond the banks serving as 'common land' (Fleming 1978, 107-8). It is clear that on Dartmoor there was contemporary settlement within the field system (eg. Fleming 1979; 1988, 71-93), and beyond its edge (Wainwright and Smith 1980). Seasonal occupation over perhaps a thousand years has been argued on the

basis of the excavation of the Shaugh Moor settlement enclosure and other house sites on Dartmoor (Wainwright and Smith 1980, 115). However, while the possibility of seasonal activity is acknowledged, the constructional sequence and long period of activity at Shaugh Moor has been re-interpreted as indicating relatively intensive activity over three or four hundred years in the second-half of the second millennium bc, with only occasional visits thereafter (Fleming 1988, 103). This interpretation would allow the most intensive phase of occupation on Shaugh Moor, when the initial open settlement was enclosed around 1300bc to 1200bc, to overlap with the laying out of the field system on the moors (Balaam *et al* 1982, 256).

5.4.3 Curvilinear Stone Banks Enclosing an Area of the Landscape

There is one example of a series of curvilinear stone banks, site 401, combining to enclose an area of landscape, between 250m and 280m OD on Drysgol on the southern slopes of the Mountain (figs. 3:33 and 5:7). The slopes are covered by humo-ferric podzols (fig. 5:9). There is nothing to suggest that the banks belong to a scheme involving the more extensive partitioning of the landscape. Three large conjoined enclosures or fields are delineated or partially enclosed, covering an area of around 3.5ha. Some clearance heaps and strips are present within the enclosed area. The banks incorporate annular or sub-annular foundations, sites 402 to 405 (6.2.3 below). Two rectangular structures, sites 406 and 407, are also present within the area (7.2.2 below).

Areas of enclosure of different types have been recognized for some time in upland Wales, for example, in Glamorgan in the form of a series of compounds associated with house circles at Garreg Lwyd, Rhondda Fawr (RCAHM 1976b, 72-74 and no. 711) (fig. 5:11); and also in North Wales, for example at Crawwellt West, Merioneth (Crew 1989a) (fig. 5:11). They have also been recently discovered in the Brecon Beacons (Briggs 1985 and 1990). A more extensive, but comarable example of linear banks enclosing an area of landscape in the form of conjoined fields, lies near Ystradfellte, Breckonshire (fig. 5:11) (Leighton and Percival 1986).

Dating of such enclosure depends largely on material from associated annular foundations. This tends, on the limited evidence available from Wales, towards a wide 500bc to 500AD dating bracket (6.2.5 below). However, the possibility that such foundations with similar fields extend back into the second millennium bc has been suggested on the basis both of land-use criteria (Briggs 1985) and parallels with sites in other areas such as the south-west of England (Johnson 1980-82, 398-402). This suggested dating precludes an association between the enclosed areas and the rectangular buildings (sites 406 and 407) which are likely to be of broadly Medieval date (7.2.4 below).

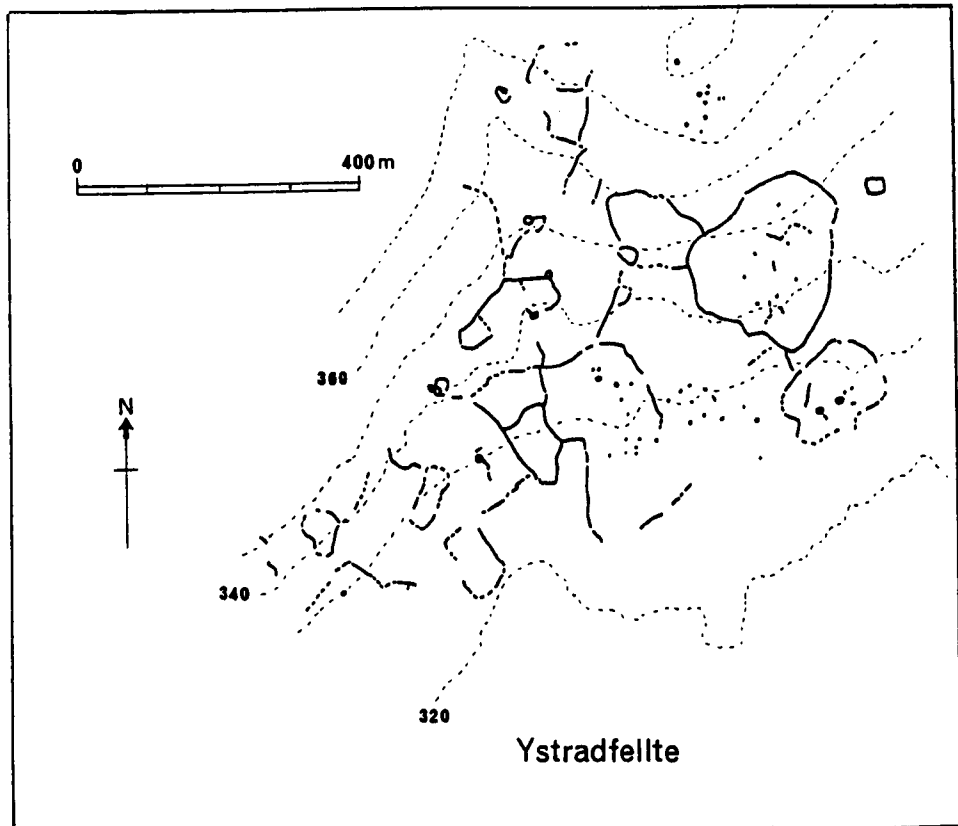
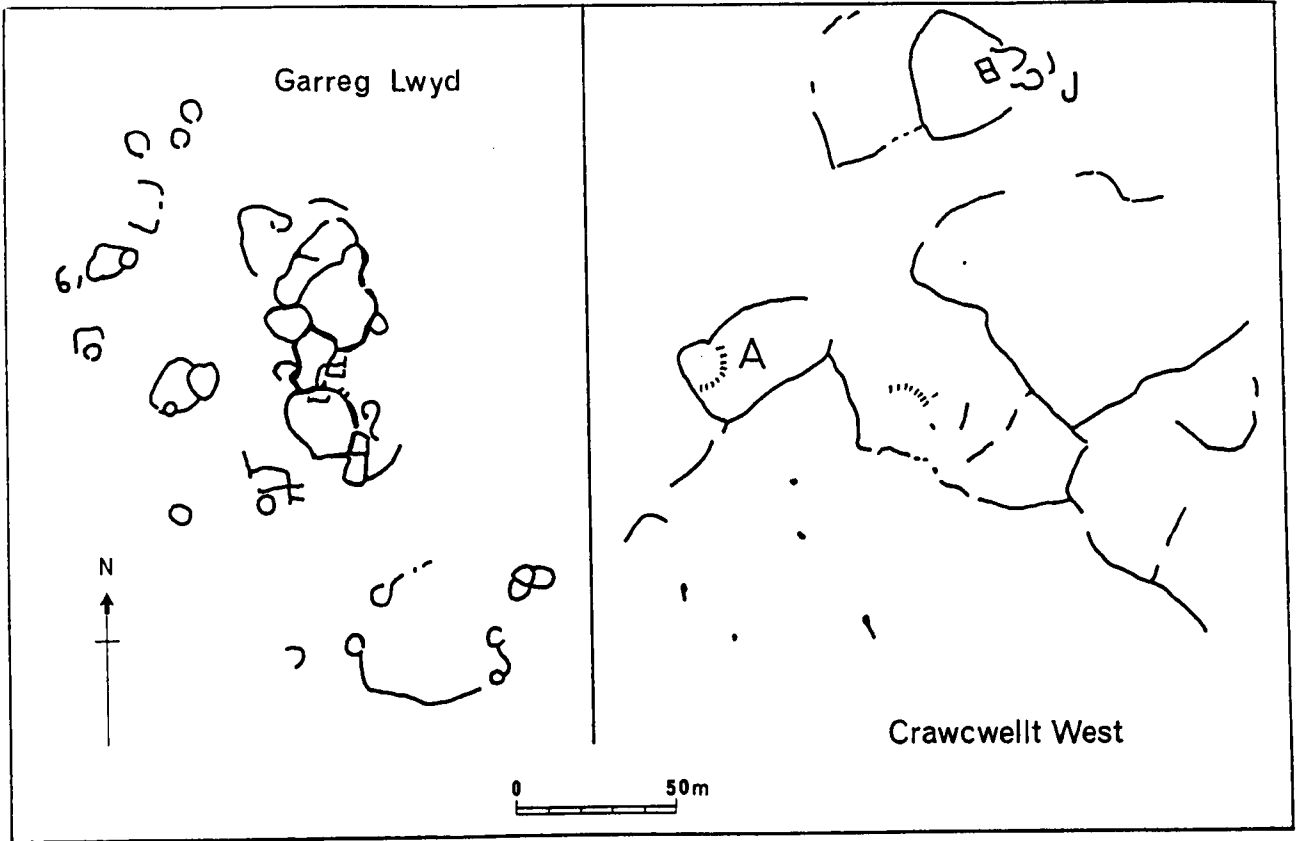


Fig. 5:11. Plans of plots and early fields. Garreg Lwyd, Glamorgan (after RCAHM 1976b); Crawcwellt West, Merioneth (after Crew 1989); Ystradfellte, Breckonshire (after Leighton and Percival 1986).

5.4.4 Contemporary Landscape

The linear or curvilinear banks, whether they partition the landscape or delineate conjoined fields, imply a relatively open landscape. This poses no problem as regards the most likely chronology for the conjoined fields, site 401, since the suggested late first millennium bc to early first millennium AD date would coincide with a significant increase in woodland clearance (2.5.4 Phase 5, above). A later second millennium or early first millennium bc date for the linear banks would coincide with the beginnings of more extensive woodland clearance on the lower slopes (2.5.4 Phase 4, above). This, however, was regarded as a significant phenomenon more particularly on the southern rather than the northern slopes. This is considered further in the discussion of land-use in *Chapter 13*.

CHAPTER 6: ANALYSIS OF
SMALLER FOUNDATIONS ON
OPEN SLOPES, MOSTLY
ANNULAR TO SUB-ANNULAR IN
FORM, AND THE ANNULAR TO
SUB-ANNULAR ENCLOSURES

6.1 INTRODUCTION

Two categories of monument are considered in this chapter, smaller foundations on open slopes, most of which are annular to sub-annular in form, and the annular to sub-annular enclosures. The distinction between the two categories may not be as clear-cut as the field evidence now suggests (6.3.4 below).

6.2 SMALLER FOUNDATIONS, MOSTLY ANNULAR TO SUB-ANNULAR IN FORM

6.2.1 Structure

Thirty-seven smaller foundations have been recorded on the slopes of the survey area in locations which have a relatively open aspect (fig. 6:1). Usually they are distinguished by their form, mostly annular to sub-annular but with some trapezoidal examples, from other foundations which sometimes occur in open locations such as rectangular compartmented foundations and single cell structures with opposed entrances (7.2.2 and 7.3 below).

The majority, some 81% or thirty sites, fall within the broadly annular to sub-annular category (fig. 6:1). A few are trapezoidal, for example, sites 505 and 739. There are a few foundations, such as sites 411, 510 and 804, which are distinctly rectangular to sub-rectangular (fig. 6:1), although they are readily differentiated from compartmented rectangular buildings and the single cell foundations with opposed entrances by their relatively small size and undistinguished structure (7.2.2 and 7.3 below). The maximum dimension of these foundations ranges from around 4m to 12m.

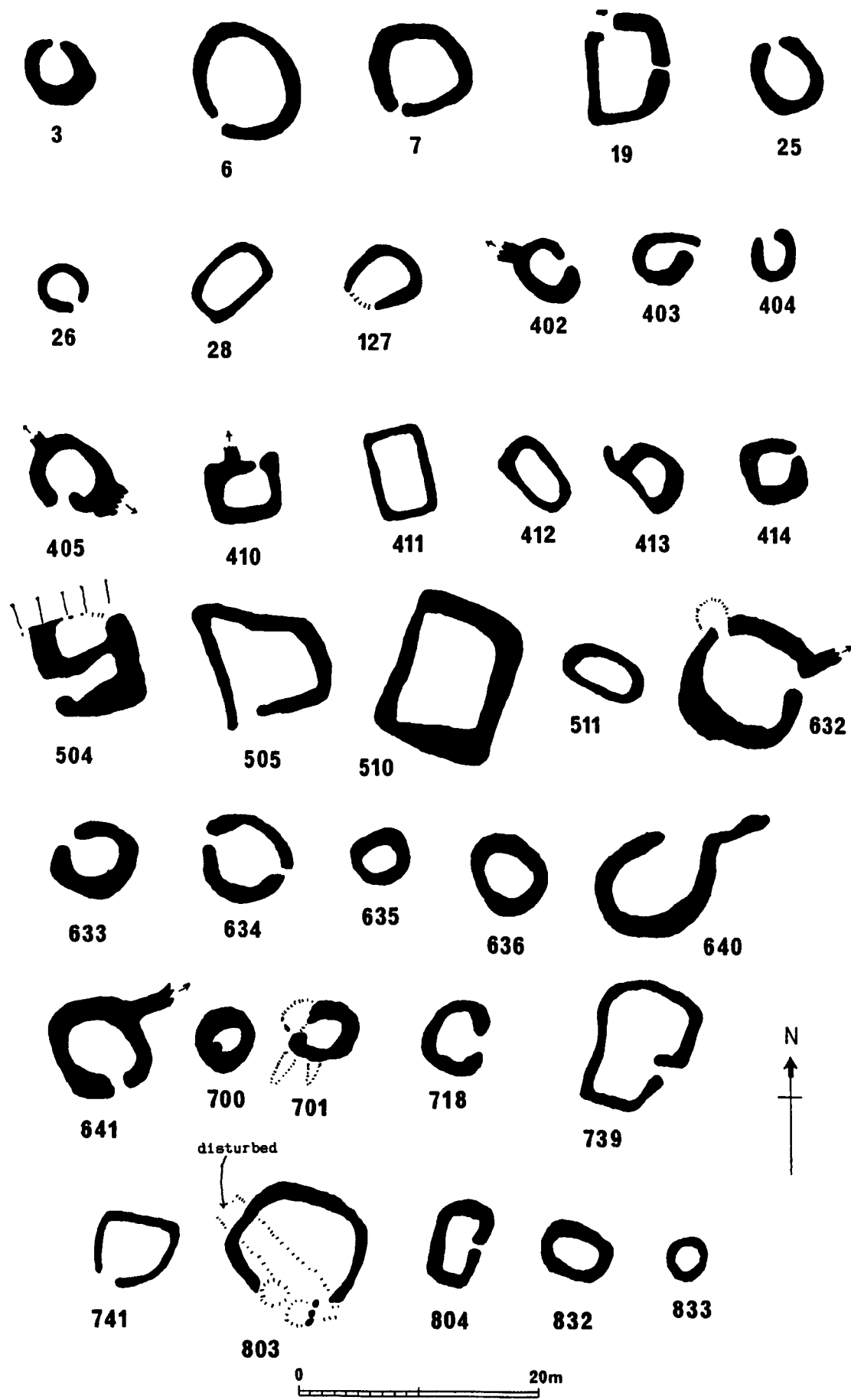


Fig. 6:1. Foundations on open slopes, mostly annular to sub-annular in form (except rectangular foundations with opposed entrances).

Around 70% have a maximum dimension between 4m and 8m, around 30% between 7m and 12m (fig. 6.2).

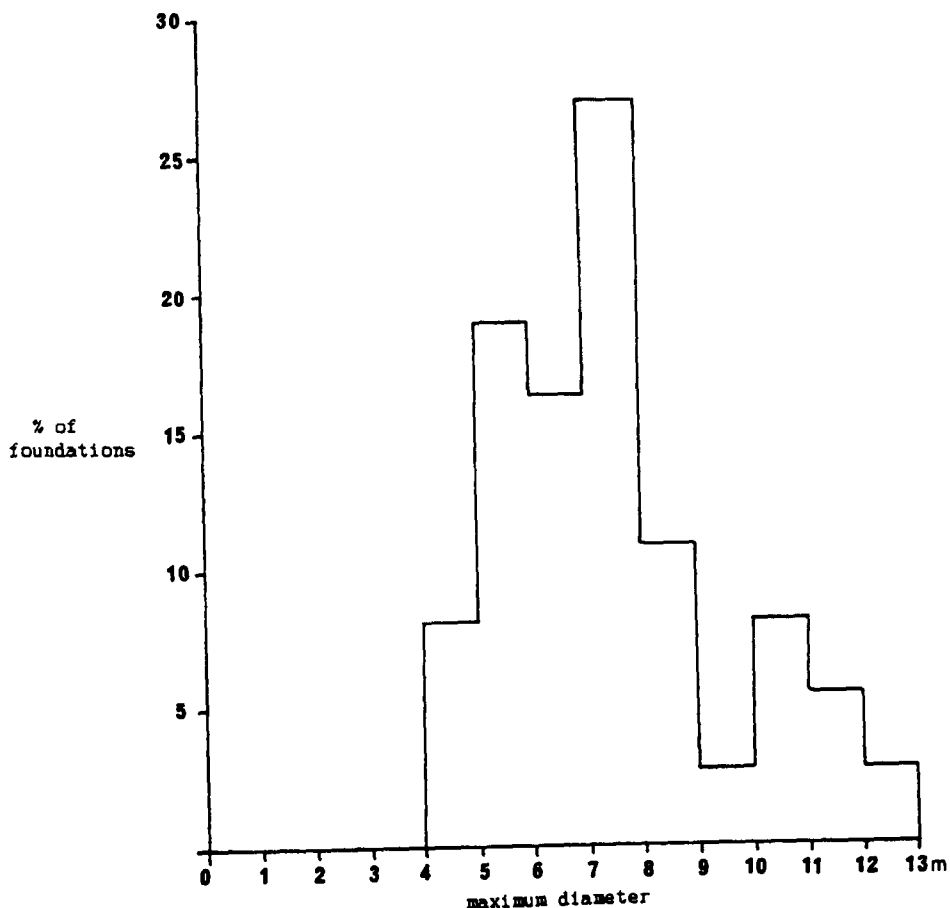


Fig. 6.2. Range of diameters of foundations on open slopes (except rectangular foundations with opposed entrances).

All are of drystone or boulder construction. Mostly the foundations survive as low vegetation-covered banks. Invariably they are superficially undistinguished apart from larger stones around the edges of some structures, for example, foundations 412 (fig. 3:36) and 718 (fig. 3:57). The potential or certain position of entrances was identified at twenty-three structures. Due westerly orientations are avoided; 65% of entrances have a north-north-west

to south-south-east orientation. The remaining entrances are orientated south-west and north-west in equal proportions. At a handful of sites, entrances were marked by larger boulders; for example, sites 26 (fig. 3:12), 402 (fig. 3:34) and 804 (fig. 3:65).

6.2.2 Location

The foundations are on relatively open slopes (fig. 6:3), as opposed to valley locations where the majority of other foundations within the survey area are sited (7.3 below). Some, however, are in relatively sheltered situations. For example, annular foundations 6 and 7 are sited towards the head of a dry gully on Garreg Las (fig. 3:4), and site 804 is in a hollow north of Cyllie Farm (fig. 3:63).

Only eight (21.6%) out of the thirty-seven structures are on the northern or north-western slope of the Mountain. The others are all on southerly or south-easterly slopes (fig. 6:3). As regards local aspect, only six sites (16.2%) have a northerly or north-westerly aspect, and only two sites (5.4%) have an easterly aspect. The other twenty-nine foundations (78.4%) have a south-easterly to south-westerly aspect.

A substantial 81% of this type of foundations lie within a one hundred metre band of altitude, between 240m OD and 340m OD. The absolute range is between 240m OD and 420m OD (fig. 6:4).

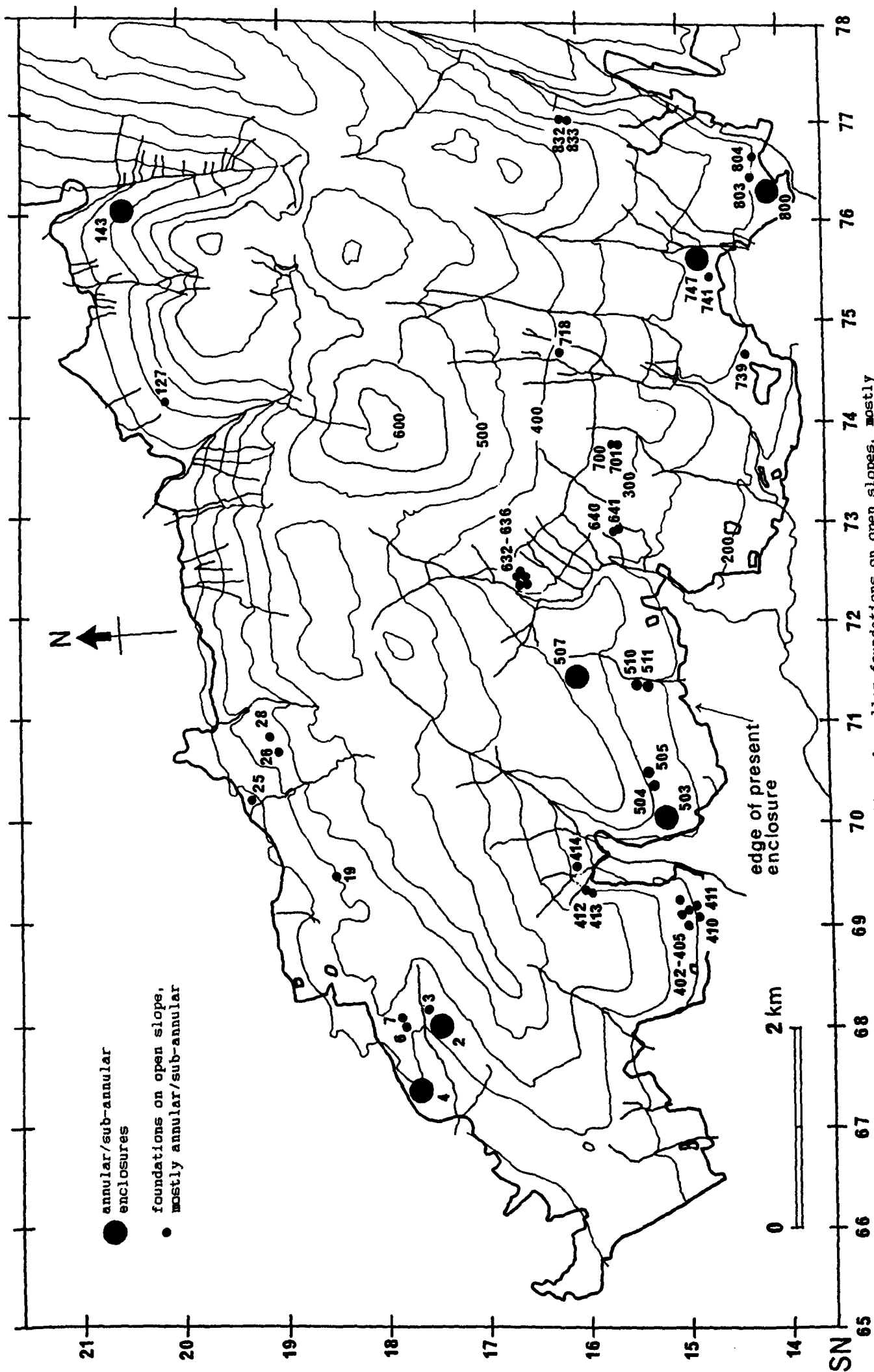


Fig. 6.3. Distribution of smaller foundations on open slopes, mostly annular to sub-annular in form, and annular to sub-annular enclosures.

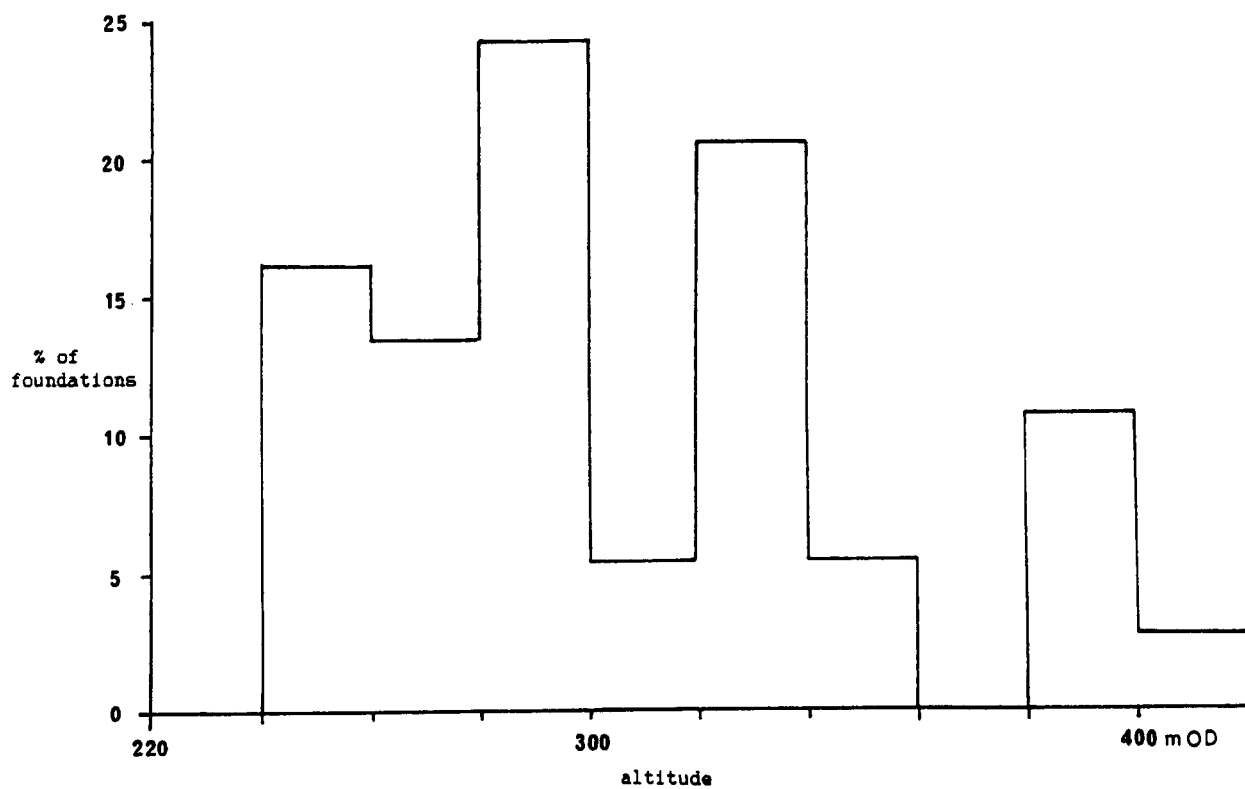


Fig. 6:4. Foundations on open slopes (except those with opposed entrances) in relation to altitude.

The foundations are situated on various soil-types. The large majority are either on cambic stagnohumic gleys or humo-ferric podzols (fig. 6:5). It is noticeable that several foundations are close to the boundaries between soil types.

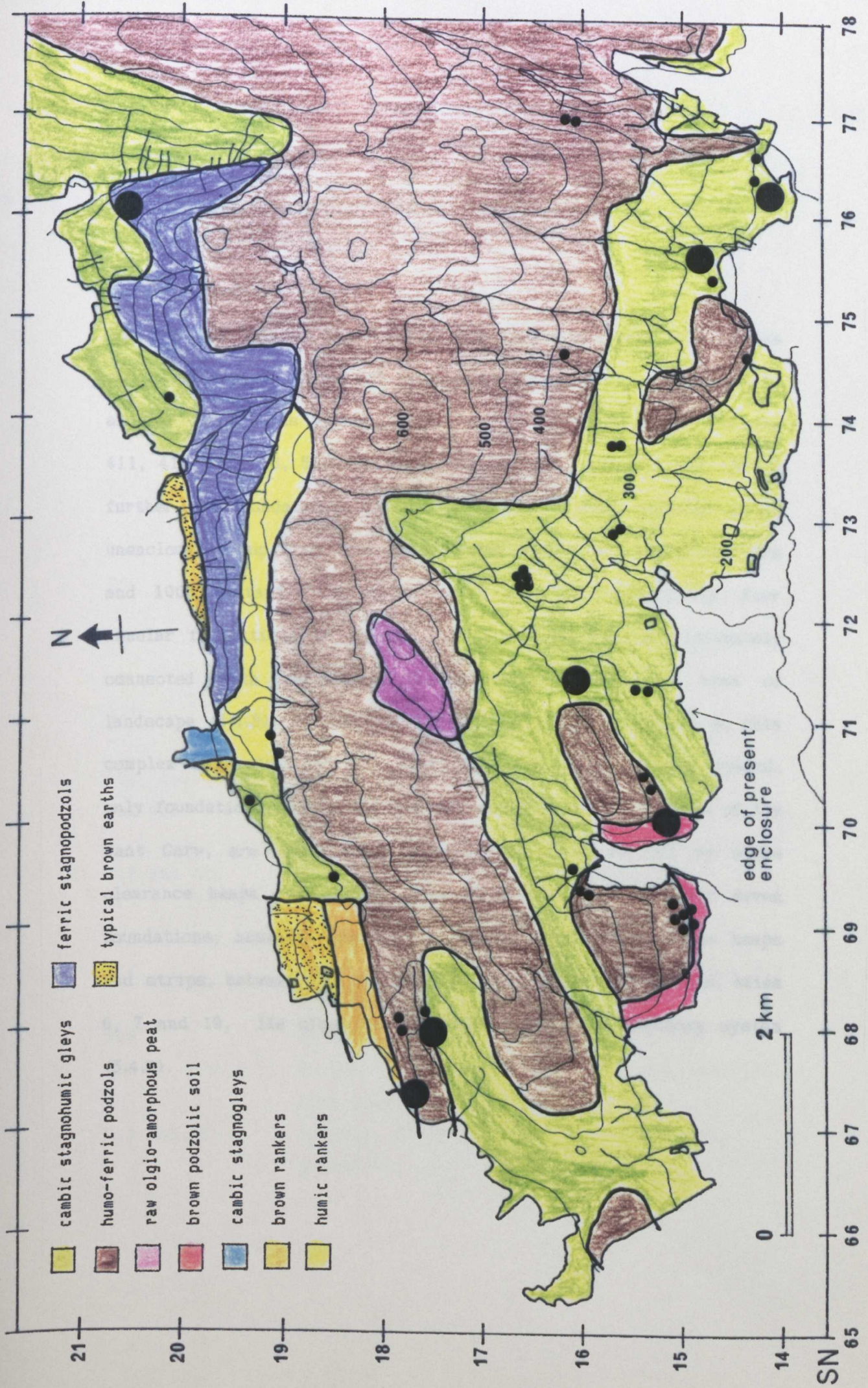


Fig. 6:5. Foundations on open slopes, mostly annular to sub-annular in form ● and annular to sub-annular enclosures ● in relation to soil types.

6.2.3 Associations

Associations between these foundations and other monuments can be suggested on the basis of proximity (Table 6:1). Six sets of annular foundations appear to be paired: sites 6 and 7, 410 and 411, 412 and 413, 510 and 511, 700 and 701, and 832 and 833. A further six foundations, sites 632 to 636, cluster together as an unenclosed group (fig. 6:3). Foundations 3 and 741, are around 70m and 100m distant from enclosures 2 and 747 respectively. Four annular foundations on Drysgol, sites 402 to 405, are intimately connected with curvilinear banks which enclose an area of landscape (5.4.3). Foundations 410 and 411 may also relate to this complex (figs. 3:33 and 6:3). Apart from the foundations on Drysgol, only foundations 632 to 636 and 641 and 642, on slopes east of the Nant Garw, are immediately adjacent to plots defined by stone clearance heaps and strips (figs. 3:42 and 4:14). Another seven foundations, however, are in the general vicinity of stone heaps and strips, between 75m and 250m distant. Other foundations, sites 6, 7 and 19, lie close to, or within the linear boundary system (5.4.2).

**Table 6:1 Potential Associations with Smaller Foundations on
Open Slopes**

<i>Smaller Foundation</i>	<i>Potential Association</i>
3	Lies about 70m NE of enclosure 2 (fig. 3:4).
6 and 7 .	Paired 18m apart within area of linear boundaries, sites 5 and 8 (fig. 3:4).
19	Lies close to linear boundaries (sites 16 and 18 (fig. 3:9).
25	Lies about 170-200m NE of linear boundaries, sites 23 and 24, and 500m NW of the cluster of stone heaps 27 (fig. 3:11).
26	Lies about 220m SW of the cluster of stone heaps 27 (fig. 3:11).
28	Lies about 220m SE of the cluster of stone heaps 27 (fig. 3:11).
127	Stone heap 128 lies 75m away to NNE (fig. 3:14)
402, 403, 404 and 405	Associated with field enclosure 401, and possibly with cluster of stone heaps 409 (fig. 3:33).
410 and 411	These foundations are around 60m apart (fig. 3:31.
412 and 413	Paired 3m apart (fig. 3:31).
414	No other sites apparent in vicinity. Sites 412 and 413 are 200m WSW (fig. 3:31).
504	No other sites in vicinity (fig. 3:37).
505	No other sites apparent in vicinity. Site 504 lies 180m SW (fig. 3:37).
510 and 511	Although of disparate character, possibly paired 60m apart (fig. 3:37).

Table 6:1 Potential Associations with Smaller Foundations on
Open Slopes (continued)

<i>Smaller Foundation</i>	<i>Potential Association</i>
632, 633, 634, 635 and 636 640 and 641	These cluster together, with two possible stone heaps 637 and 638 (figs. 3:42 and 3:50). Paired and associated with stone heaps and strips, site 639 (fig. 3:52).
700 and 701	Paired 23m apart, and 100m NNE of stone pile 702 (fig. 3:53).
718	No other sites apparent in vicinity (fig. 3:53).
739	Around 250m SE of cluster of stone heaps 737, 150m NE of stone pile 738, and 150m SW of stone strip 740 (fig. 3:53).
741	Possible stone heap 30m to SE. 200m SW of enclosure 747 (fig. 3:53).
803	Around 100m NE of enclosure 800 (fig. 3:63).
832 and 833	Paired 3.5m apart (fig. 3:63).

Figure 6:6 illustrates potential associations between the size of the annular foundations and different types of agricultural activity in relation to altitude. It is very noticeable that the smaller foundations under 7m across tend to be those least closely associated with evidence for agricultural activity in the form of stone clearance features. They also attain the greatest altitude, approaching 400m OD. The absence of immediate agriculture associations does not, of course, mean that the foundations were unconnected with food production. Another group of foundations mostly between 6m to 8m across, are connected with the curvilinear boundaries delineating enclosures on Drysgol, site 401 (fig. 3:33), while the majority of larger annular foundations, those in excess of 8m across, are in the vicinity of plots defined by stony heaps or strips, or with the linear banks partitioning the landscape.

- annular to sub-annular foundation without apparent agricultural associations
- annular to sub-annular foundations associated with stone clearance heaps and/or stony strips
- ◆ annular to sub-annular foundations close to boundaries apparently partitioning landscape
- ▲ annular to sub-annular foundations associated with curvi-linear banks enclosing area of landscape
- annular to sub-annular enclosure
- minor rectangular structure on open slope

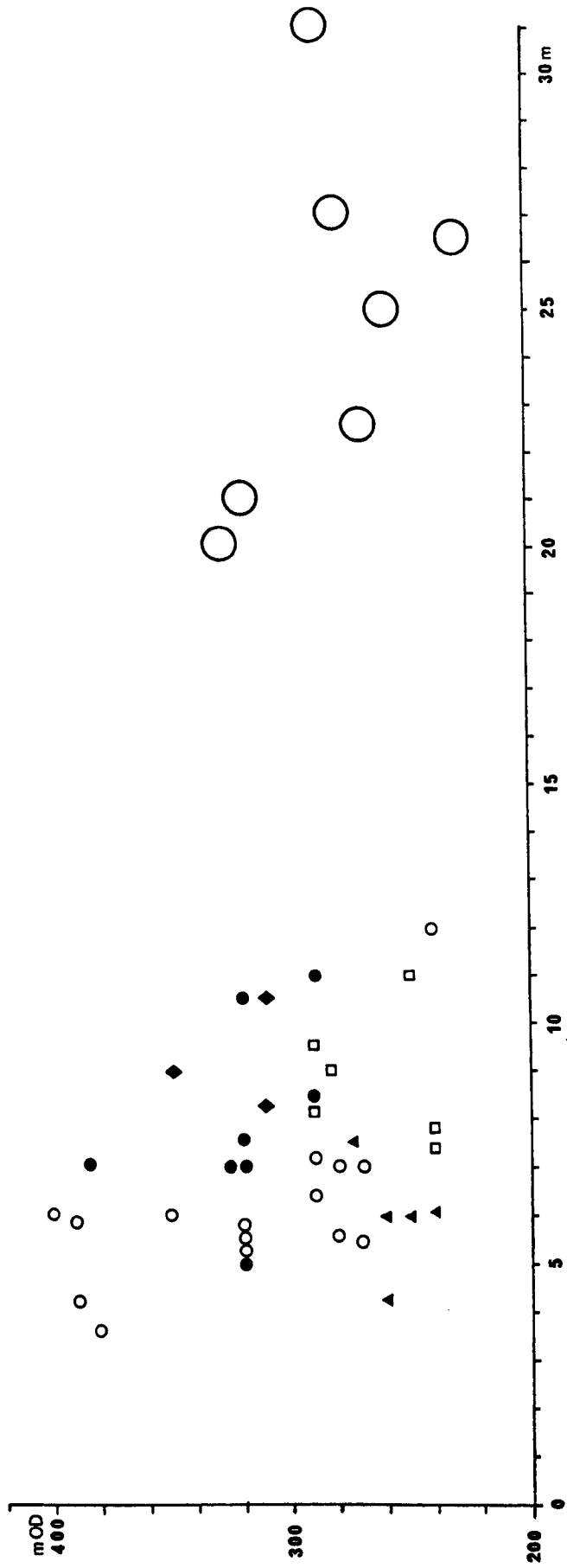


Fig. 6:6. Relationship to altitude of annular to sub-annular enclosures, and annular to sub-annular foundations and associated stone clearance features, boundaries and enclosure.

Distinctions can therefore be made between annular foundations based on size correlated to agricultural associations. However, this can only be a tentative conclusion on account of the relatively small sample which does not allow close definition of "association."

The possibility has also to be recognized that some annular foundations may be linked functionally to major buildings as ancilliary structures. These could be located some distance away, even beyond the survey area. The foundations on open slopes which are trapezoidal or square to rectangular in form may have had similar ancilliary rôles. The chronology for such associations is potentially very wide (6.2.5 and 7.3.7 below).

6.2.4. Characterization

The annular and sub-annular foundations in particular would usually be characterized as 'house' or 'hut' foundations or circles. Obviously they could fulfill other functions apart from human habitations. A range of functions is possible particularly within a group of potentially contemporary buildings such as foundations 632 to 636 on the slopes east of the Garw. Evidence for iron-working at such sites in the Welsh uplands is described below. The foundations now appear to be relatively insubstantial. A timber and/or turf superstructure could have added height to walls, or the roofs possibly extended down to dwarf-walls. Roofs would be thatched with straw or reeds, or perhaps turves or peat were used.

These foundations are probably much more common in upland Wales than is currently recognized, either as isolated structures or forming unenclosed groups, sometimes in association with clearance features. Indications of potentially widespread distribution comes from field-work carried out in various regions. The *Inventory for Caernarvonshire* (RCAHM 1956, 1960 and 1964) and other earlier field-work (Bowen and Gresham 1967) began to illustrate the extent of distribution in north-west Wales. This has been supplemented by more recent survey (Kelly 1982; Crew, various notes in *Archaeology in Wales*). In north-east Wales too the early record of the distribution of such sites (Ellis Davies 1929; 1949) has been extended (Manley 1986). Moving to the south, recent field-work in Breconshire has revealed many more such foundations (Briggs 1985 and *pers. comm.*).

It is important to note examples of stone structures with timber precursors in the highland zone, for example, house site F on Holne Moor, Dartmoor (Fleming 1979; 1988, 76-82), and, in Wales, site J, Crawwellt West, near Trawsfynydd, Merioneth (fig. 5:11). At Crawwellt West, two successive timber structures about 8.5m and 10m in diameter preceded an annular stone structure 5m across. Phases 2 and 3 were associated with iron working (Crew 1989b and 1991). Work at Crawwellt continues, and no definitive phase plans have yet been published. However, the round houses within the Moel y Gerddi and Erw-wen enclosures, also in North-west Wales, well illustrate the succession of timber and stone structures (fig. 6:8

and 6.3.4 below) which can provide chronological depth to the occupancy of a location.

It is also important to note that buildings constructed entirely of timber could complement or extend the distribution of stone foundations. For example, four successive phases of exclusively timber construction were recorded at building A at Crawwellt (Crew 1989a). This building, although associated with enclosure banks (fig. 5:11), seems best interpreted as an iron-working workshop on the basis of the fifteen clay furnaces and 600kg of iron-working residues found within the buildings. Local bogs are thought to have been the source of bog iron-ore. This cautions against the assumption that all foundations are necessarily 'houses.' In view of the evidence for iron-working from the excavations at Crawwellt, it is noteworthy that early excavations at 'round huts' at Garreg Lwyd, Rhondda Fawr, also produced evidence for iron-working (RCAHM 1976b, no. 711).

6.2.5 Chronology

Very little excavation has been undertaken on such foundations in Wales, and such as have been excavated, have produced limited datable material. The few upland unenclosed 'hut settlements' so far recorded in Glamorgan are assigned to the Iron Age and period of Roman occupation (RCAHM 1976b). Only Hen Dre'r Gelli, however, has produced datable material, pottery of the second or third century AD (Griffith 1906). At Cyfannedd Fawr, Arthog, Merioneth, the house-circle proved to be of at least two structural phases.

Datable material was confined to a sherd of black burnished ware (Crew 1978 and 1979b). While this again points to activity during the Roman occupation, it may well be that earlier phases of settlement left little distinctive material culture. A pre-Roman date is indicated at Crawwellt A, Merioneth, where archaeomagnetic dating suggests that the iron smelting kilns were last fired between 250BC and 25AD. A fragment of glass bangle is considered to date to the first half of the first century AD. It is concluded that the site was used entirely within the prehistoric period, and that in view of the four phases of timber building, activity was likely to have been long-lived (Crew 1989, 14-15). A house circle attached to an annexe recently excavated on Holyhead Mountain, Anglesey, also had a long period of not necessarily continuous usage, from perhaps 300bc to the fourth century AD, with some activity taking place around two centuries later (C. Smith 1987) (6.3.4 below).

It has been suggested that the size of a house circle may have a chronological significance. It has been proposed that, in the North of England, house circles over 7m in diameter are likely to be earlier, perhaps second millennium bc in date, compared to those under 7m, which are of later, perhaps Romano-British date (Burgess 1983, 98). On the other hand, in the south-west of England, the later house sites tend to be larger (Johnson 1980, 159). The problems of dating such foundations in a Welsh context are too great at present to warrant speculation about correlations between size or form, and chronology.

Although the very limited evidence for the date of house circles in the Welsh uplands points to a broadly 500bc to 500AD bracket, work elsewhere in the British highland zone does often indicate origins for such settlement in the second millennium bc or even earlier (Fowler 1983, 126-7). This can be illustrated in widely separated regions. For example, on Shetland, substantial sub-annular stone structures associated with stone heaps and strips, interpreted as houses with fields or plots, were in use by the second-half of the third millennium bc (Whittle 1986). In the south-west of England, it seems that circular stone houses associated with field systems of irregular layout may date to the earlier part of the Bronze Age, presumably the first-half of the second millennium bc, on the basis that they clearly predate the formal demarcation of the landscape by the 'reaves' around 1300bc (Fleming 1987a, 114-115). In the North of England too, unenclosed upland round houses are known from the first half of the second millennium bc onwards (Gates 1983, 117).

It is, therefore, well worth contemplating the possibility or even likelihood of later second millennium bc dates, at least, for some house circles in the Welsh uplands (Savory 1989, 166). As has been noted, there is the prospect that field systems of this period existed in areas such as the Black Mountain and Mynydd Llangyndeyrn (5.4.2 above). On the Black Mountain, there are house circles in the area of the field system, with one example, site 19, in close proximity to a linear boundary (Table 6.1). Also, given that the distinction between 'unenclosed' and 'enclosed' house

circles may sometimes be arbitrary (6.3.4 below), the late second to early first millennium bc radiocarbon determination, recently obtained for an enclosed house circle in North Wales (Manley 1990), is at least one indication of an earlier date for settlement of this general character in the Welsh uplands (6.3.4 below).

While a broadly prehistoric or proto-historic attribution is proposed for the majority of foundations within this category of sites on open slopes, as already noted, the category actually embraces a few structures with forms extending beyond the annular and sub-annular, towards the trapezoidal and sub-rectangular. While shape is not necessarily diagnostic as regards period of construction, some structures included in this section almost certainly will belong to other epochs. Possible examples are sites 504, 505 and 804 (fig. 6:1), which also lack associations with agricultural activity in the form of stone clearance features.

6.2.6 Contemporary Landscape

Taking the narrower dating band of 500bc to 500AD for most of the annular and sub-annular foundations in the survey area, they would coincide with widespread regional clearance of woodland at a time when there was also a marked rise in weeds of cultivation and cereal-type pollen (2.5.4, Phase 5). The suggestion that the most intensive activity was on the southern slopes of the Mountain (Cloutman 1983, 91) is interesting in view of the preponderance of foundations of this type on the southern slopes.

6.3 ANNULAR AND SUB-ANNULAR ENCLOSURES

6.3.1 Structure

There are seven enclosures which range from 21m to 31m in diameter (Table 6:2). They are, in essence, annular to sub-annular in form, even site 143 which is distorted by conjoined buildings (fig. 6:7).

The enclosures are remarkable for their diversity of form, while there is also a considerable range in the area enclosed, mostly from around 200m² to somewhat over 400m². The site with the smallest enclosed area of 65m² is site 143 but this calculation does not take account of three conjoined foundations, two annular to sub-annular and one sub-rectangular. Enclosure 4 has a sub-annular foundation incorporated within the bank, while a building platform abuts the inside face of enclosure 2. Enclosure 503 is so badly disturbed that it is difficult to say anything about its form and structure. However, an arc of earth-fast stones within the interior hints at an internal building. Slight bulges in the south-western section of the enclosure bank at sites 507 and 747 could indicate the position of internal structures (Table 6:2). At enclosure 507, this feature is accompanied by a platform levelled into the slope. A sinuous bank extends from the south-western arc of enclosure 507.

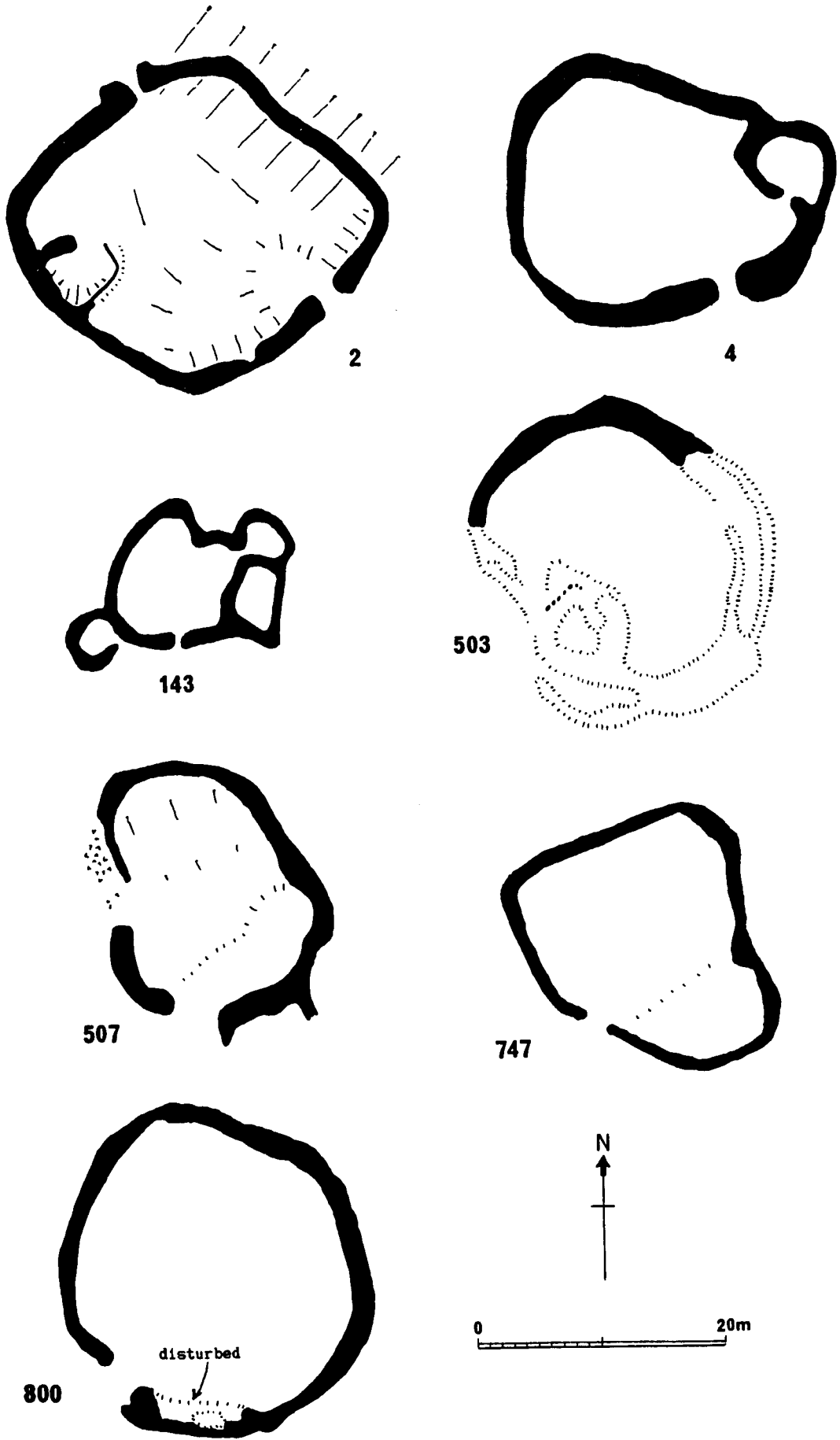


Fig. 6:7. Annular to sub-annular enclosures.

The enclosures survive mostly as low banks of stone sometimes faced with boulders. The banks at sites 507, 747 and 800 are less substantial compared to the other sites, those at 747 and 800 being particularly attenuated. Enclosure 2 is the most massively built with drystone walls containing transverse tie stones still standing in excess of one metre high.

Only the ruinous enclosure 503 has no visible entrance; the south-western arc is a possible position for such a feature if one existed. Enclosures intended to keep out stock, however, might not have an entrance. The wall surrounding the large settlement enclosure on Shaugh Moor, Dartmoor was unbroken, and access via a stile was suggested (Wainwright *et al* 1980, 74-5). Enclosure 2 has two opposed entrances. A broadly southerly orientation is preferred for the entrances (Table 6:2).

Table 6:2 Characteristics of Annular and Sub-Annular Enclosures

<i>Site no.</i>	<i>Max. dimension</i>	<i>Area enclosed</i>	<i>Buildings or platform</i>	<i>Orientation of entrance(s)</i>	<i>Altitude OD</i>
2	31m	430m ²	1	NW and SE	310m
4	25m	310m ²	1	S	260m
143	20m	65m ²	3	S	330m
503	27m	315m ²	?	SW?	280m
507	21m	225m ²	?	S	330m
747	22.5m	260m ²	?	SW	270m
800	26.4m	405m ²	-	SSW	230m

6.3.2 Location

The enclosures fall within a one hundred metre altitudinal band, between 230m and 330m OD (Table 6:2) (fig. 6:5). All are on open slopes, except enclosure 2, which is located within a sheltered hollow created by two parallel *cuestas* (fig. 3:5). Enclosures 2, 4 and 143 are on the north-western and northern slopes of the Mountain, the other enclosures are on the southern slopes (fig. 6:3). The enclosures are mostly located either on cambic stagnohumic gley soils or humo-ferric podzols, with one example, site 143, close to the boundary between ferric stagnopodzols and cambic stagnohumic gleys and another, site 503, close to the boundaries between brown podzolic soils, humo-ferric podzols and cambic stagnohumic gleys (fig. 6:5).

6.3.3 Associations

Small stone heaps, plots defined by clearance strips and house circles are all potential associations for the enclosures on the basis of a degree of proximity. Enclosure 4 lies within the general landscape partitioned by linear boundaries, while enclosure 2 lies just beyond this area (Table 6:3).

Table 6:3 Potential Associations with Enclosures

<i>Enclosure No.</i>	<i>Potential Association</i>
2	Lies south of linear boundaries, site 5, and about 70m SW of annular foundation 3 (fig. 3:4).
4	Lies adjacent to area of linear boundaries, site 5 (fig. 3:4).

<i>Enclosure No.</i>	<i>Potential Association (continued)</i>
143	Lies around 170m SE of cluster of stone heaps, site 142 (fig. 3:14).
503	none
507	Lies adjacent to plot 508, defined by stone clearance strips (fig. 3:40).
747	Stone clearance strips 750 are perhaps best linked to compartmented building 748, not enclosure 747. However, a plot defined by curvi-linear stone strip and heap, site 752, lies 200m SE of 747. Also annular foundation 741 is 200m to the W (fig. 3:53)
800	Stone heap 802 and sub-annular foundation 803 lie 40m N and 80m NE respectively (fig. 2:63).

6.3.4 Characterization and Chronology

The diversity of structure and association make it very difficult to make generalizations about this category of site. There are no excavated parallels from the uplands of South Wales.

Enclosure 143 is perhaps the most distinctive. It can be seen as a yard adjoined by three buildings, perhaps differentiated in function by their contrasting plans (two annular and one sub-rectangular), for example, living accommodation, workshop, barn or byre. This closely parallels the 'enclosed homesteads' of North-west Wales (C. Smith 1977). Much of the datable evidence from these sites is Romano-British material, and, at least in their final form, they are taken to be of Romano-British date (Cunliffe 1991, 271). However, there are indications that the origin of many

homesteads lies in the pre-Roman Iron Age, broadly the second half of the first millennium bc, a period characterised by a lack of closely datable domestic material (Smith 1977, 49). For example, occupation of an enclosure at Graeanog, Caernarvonshire seems to have begun as early as the third century bc continuing until the fourth century AD. After a hiatus there was further activity at the enclosure between the sixth and eleventh centuries AD (Kelly 1985 and 1988a). The enclosed homesteads of North-west Wales are now seen as a settlement form of potentially considerable longevity, commencing in the second-half of the first millennium bc, evolving in form into the Roman period, and continuing to be used into the early Middle Ages (Kelly 1990, 105-6).

An example of a house circle with a simple stone annexe, paralleling enclosure 4, was recently excavated on Holyhead Mountain, Anglesey (Smith 1984, 1985 and 1987) (fig. 6:8 and 6:9). This represented the earliest phase at a site with a complex structural history and several episodes of activity which provided radiocarbon determinations between around 300bc and 600ad (Smith 1987). A much less substantial example of such a site has been excavated at Graig Fechan on the Denbigh Moors, Clwyd (fig. 6:8). It was dated to the late second/early first millennia bc (Manley 1990, 523-5), although the possibility that the charcoal used for the determination derived from an earlier context has been raised (Briggs 1990, 69). This arrangement of house circle with annexe attached can be found throughout upland Britain. Its origins could well lie in the second millennium bc on the basis of analogy

with other areas, for example the south-west of England (Johnson 1980-82, 402).

The other site with a certain internal building platform, enclosure 2, is very different in character from sites 4 and 143. It is larger and more massive in terms of construction. Also its location between two cuestas sets it apart from the other enclosures which have entirely open aspects. No parallel can be drawn, or date attributed, with any confidence. However, it is suspected that it may be later in date than structures such as enclosure 4.

If buildings existed within enclosures 507, 747 and 800, it appears that they must have been substantially of timber construction. Timber buildings associated with enclosures of similar scale can be paralleled in North Wales. A stone building centrally located with an annular stone-built enclosure at Erw-wen, Gwynedd, dating to the second-half of the first millennium bc, was preceded by at least one timber round house (Kelly 1988b) (fig. 6:8). At Moel y Gerddi, Gwynedd, a decaying timber round house was consolidated with stone. Interestingly, at this site, the attenuated stone embankment defining the enclosure was also consolidating an earlier decaying timber palisade (figs. 6:8 and 6:9) offering parallels for enclosures 747 and 800 which have only slight stone walls. Moel y Gerddi was considered to have a relatively short life-span in the mid-first millennium bc (Kelly 1988b).

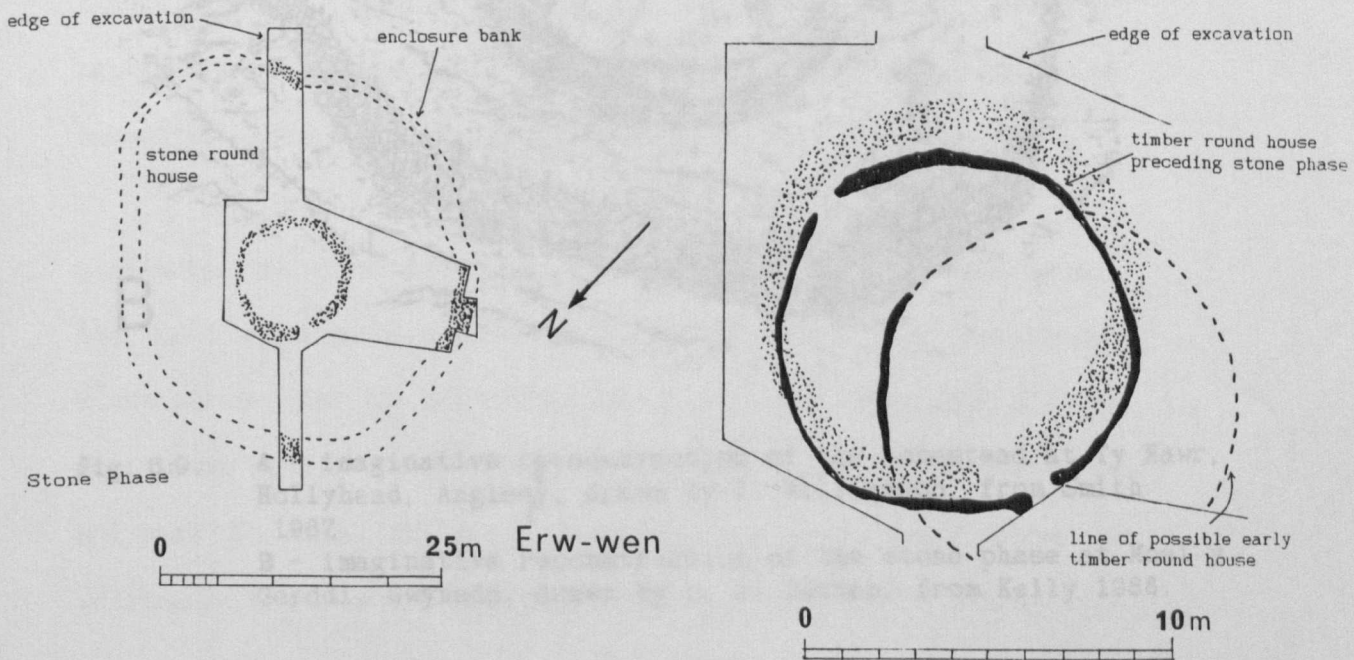
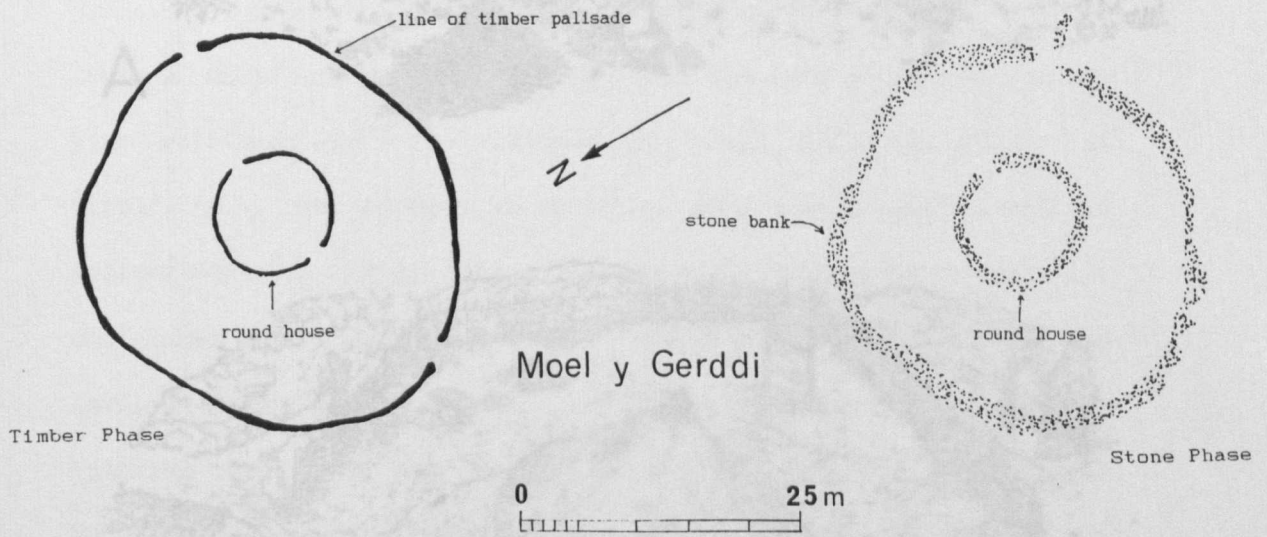
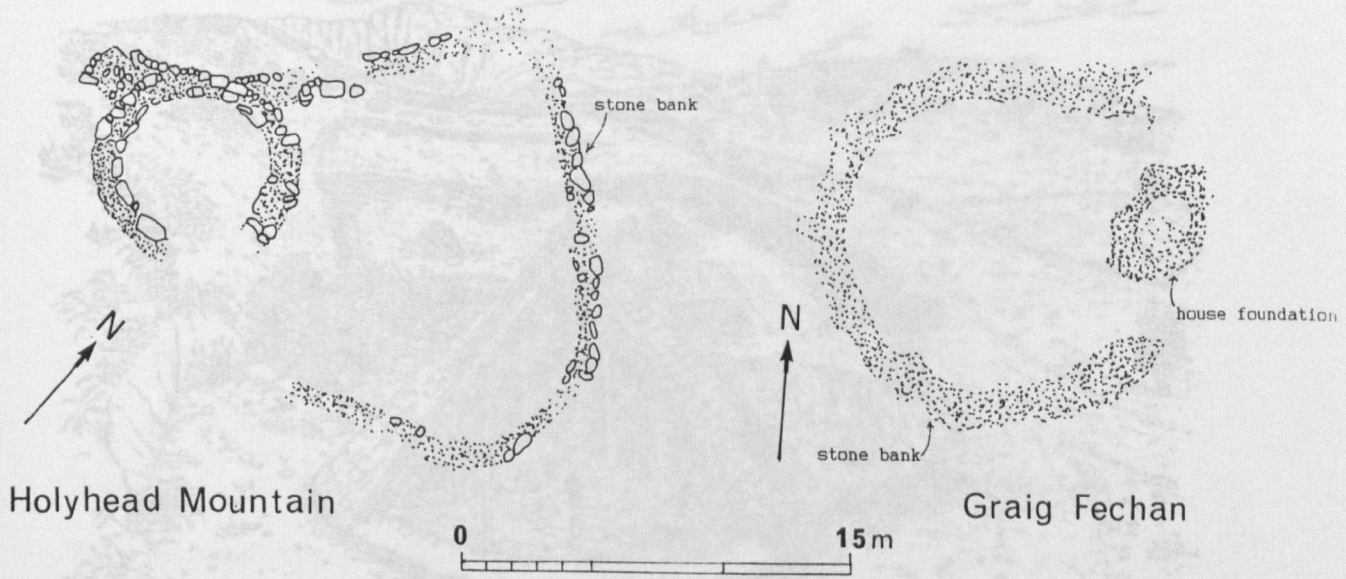
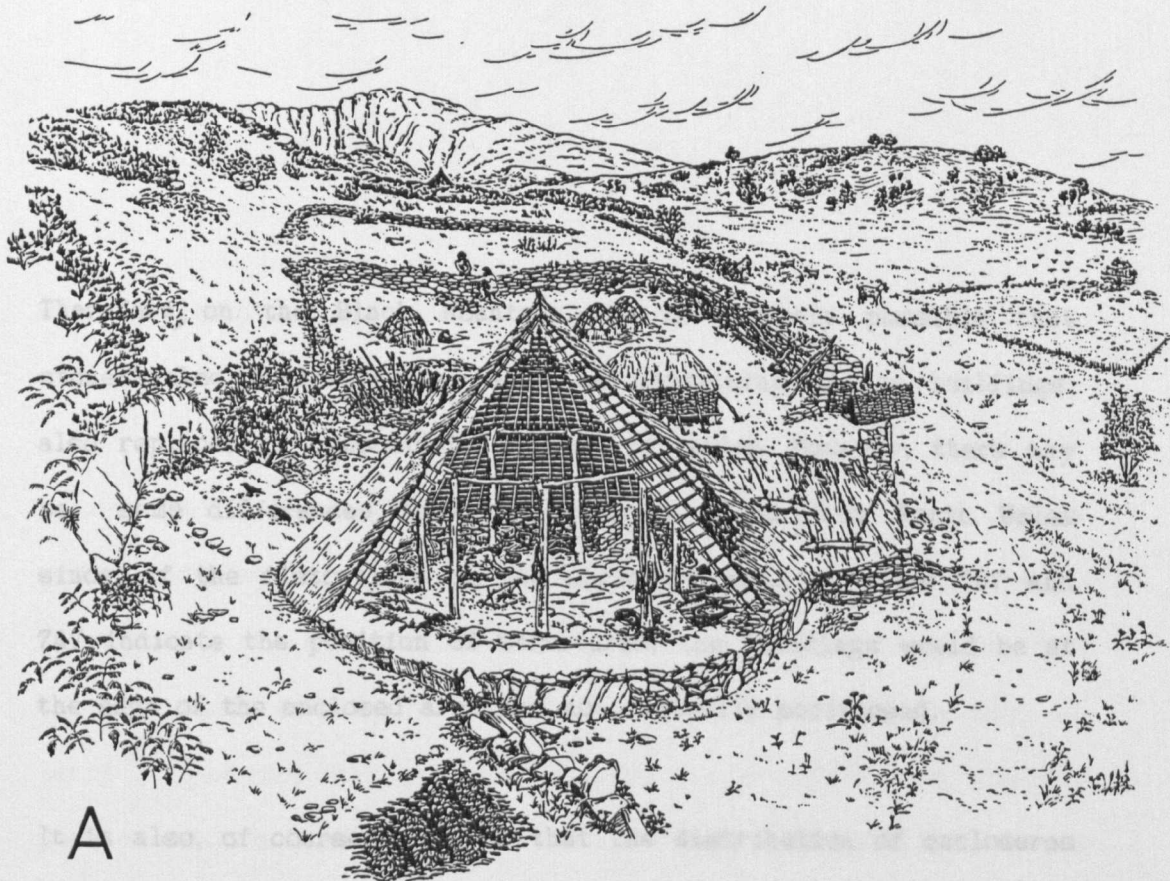
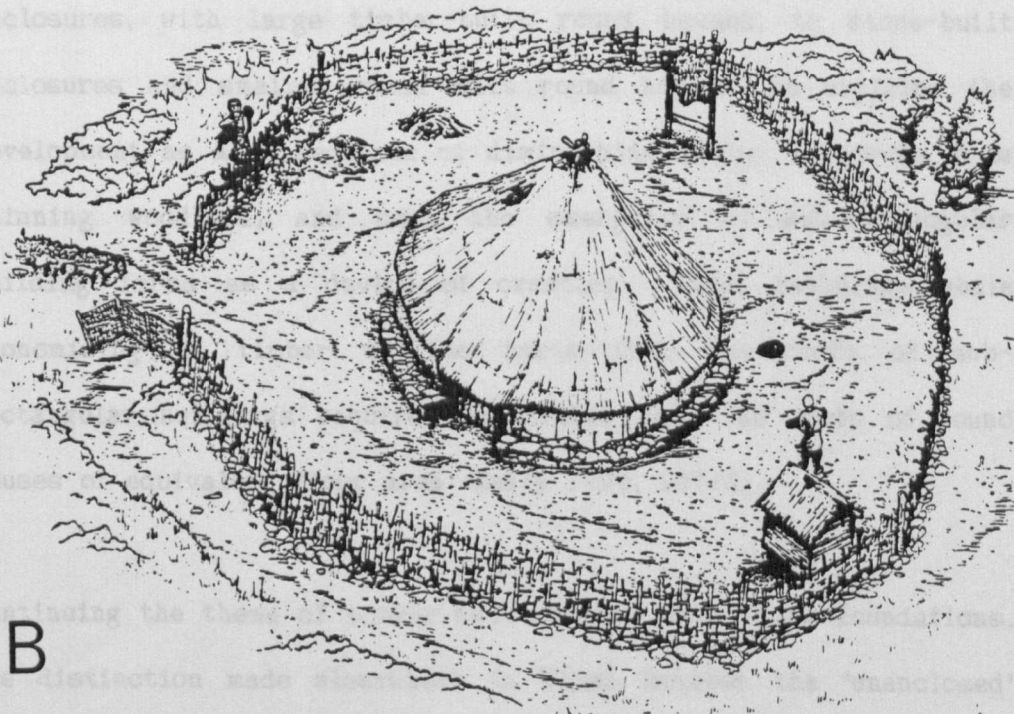


Fig. 6:8. Simplified plans of excavated enclosures in Wales: Holyhead Mountain (after Smith 1985); Graig Fechan (after Manley 1990); Moel y Gerddi and Erw-wen (after Kelly 1988).



A



B

Fig. 6:9. A - imaginative reconstruction of the homestead at Ty Mawr, Hollyhead, Anglesey, drawn by J. Williamson, from Smith 1987.
 B - imaginative reconstruction of the stone phase at Moel y Gerddi, Gwynedd, drawn by L. A. Dutton, from Kelly 1988.

Therefore, on the Black Mountain, it is entirely possible that stone-banked enclosures, as well as containing timber buildings, also replaced or consolidated timber palisades. However, there may be some differences from the examples cited from North Wales since, if the distortions in the enclosure bank at sites 507 and 747 indicate the position of structures, the buildings would be at the edge of the enclosed area and not centrally positioned.

It is also, of course, possible that the distribution of enclosures with buildings could be extended by sites built exclusively of timber. Kelly has proposed an evolution from timber-built homestead enclosures, with large timber-built round houses, to stone-built enclosures and smaller stone-built round houses. He explains the development as a consequence of diminishing timber resources from thinning woodland, and sees the emergence of sub-rectangular building forms as a device of creating large buildings while economising on timber on the basis that the roofs of sub-rectangular buildings require less timber than the roofs of round houses of equivalent floor area (Kelly 1990, 107-8).

Continuing the theme of timber associations with stony foundations, the distinction made elsewhere in Wales between the 'unenclosed' house circle and the simplest form of enclosed homestead, a house foundation with a stone-walled annexe such as that excavated on Holyhead Mountain, Anglesey (figs. 6:8 and 6:9), could often be arbitrary. There may not always be a real distinction since it is

always possible that some stone house foundations could have had annexes defined by timber fencing.

In conclusion, these rather diverse structures lack cohesion as a group, and they cannot be assigned to any very closely dated epoch. They could, individually, on parallels from elsewhere in the highland zone, have been constructed, used and re-used within at least a generous two millennium bracket, c. 1000bc to 1000AD, perhaps with a likelihood of a focus within a period c. 500bc to 500AD.

6.3.5 Contemporary Landscape

The potential length of the chronological span makes it difficult to describe the contemporary environment. It can, however, be said that the enclosures coincide with an epoch during which there was a major reduction of woodland, culminating in a virtually open landscape, with an increased emphasis on cereal cultivation between around 500bc to 500AD (2.5.4, *Phase 5*).

CHAPTER 7: ANALYSIS OF
MAJOR RECTANGULAR
BUILDINGS AND ASSOCIATED
STRUCTURES

7:1 INTRODUCTION

It was readily apparent during field-work that three principal types of large rectangular to sub-rectangular building in the survey area could be distinguished on the basis of structure and location:

- the compartmented building, which was the most numerous of the rectangular foundations (7.3 below);
- the single cell structures in valley locations (7.4 below);
- and single cell buildings with opposed entrances (7.2.2 below).

Additionally, there was also one example of a large building platform constructed at right-angles to the slope (7.2.1 below).

7.2 THE BUILDING PLATFORM, AND RECTANGULAR SINGLE CELL FOUNDATIONS WITH OPPOSED ENTRANCES

7.2.1 The Building Platform

Site 805 is a substantial building platform measuring 13m by 5m, located at right-angles to the contours on a steep slope at 250m OD on top of the western side of the Twrch valley (figs. 7:1 and 7:2). It is an example of a monument, often designated a 'platform-house,' which is well-known in the Glamorgan uplands to the east (RCAHM 1982, 17-21). No superstructure survives on this platform (fig. 3:65). Where it does elsewhere, or evidence for the building has been revealed by excavation, the structure appears to comprise

a single cell, often with a single entrance, or two opposed entrances, in the long sides (RCAHM 1982, 17-18). A possible reconstruction of the type of house which may have been built on these platforms is provided in *figure 7:4*, based on the result of excavations at Dinas Noddfa Lower House, Gelligaer, Common Glamorgan (A. Fox 1937) (*fig. 7:3*). Entrances in the down-slope end-wall are known where scarping had not produced a substantial platform-ramp, for example, at Cefn Graeanog, Gwynedd (Kelly 1981-82) (*fig. 7.3*), a reconstruction of which is illustrated in *figure 7:4*.

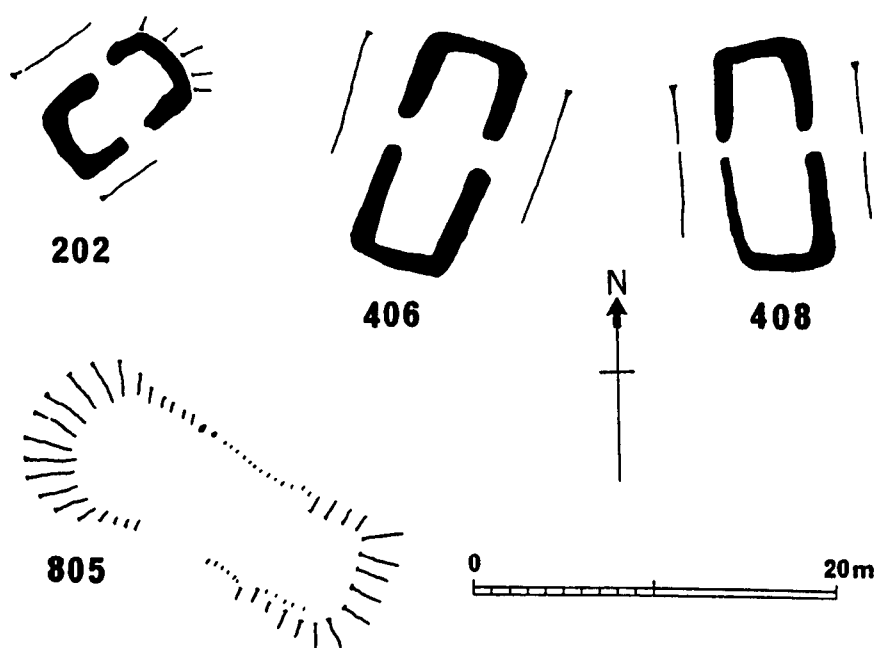


Fig. 7:1. Foundations with opposed entrances and the platform-house.

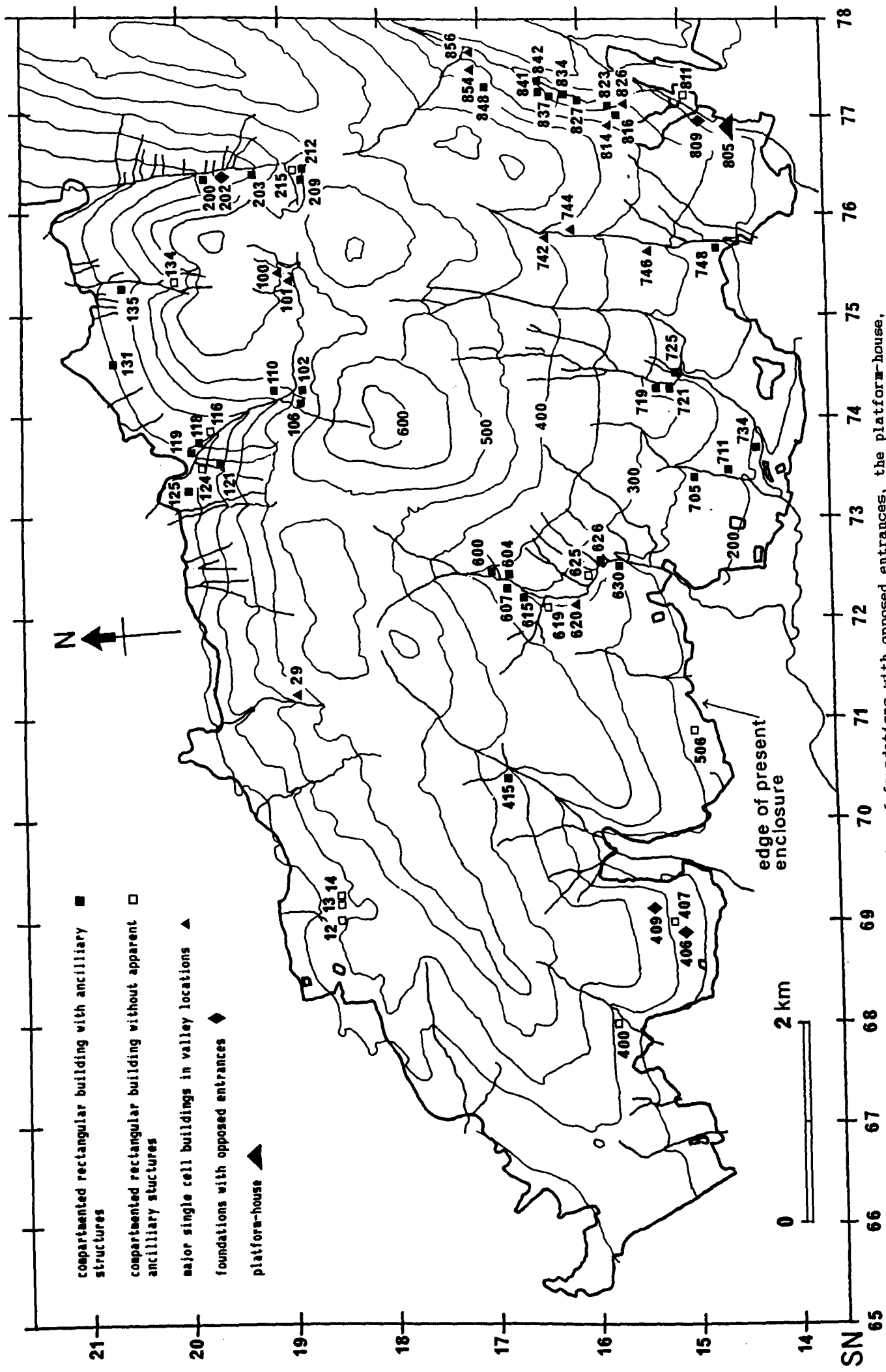


Fig. 7:2. Distribution of foundations with opposed entrances, the platform-house, compartmented rectangular structures, and major single cell buildings in valley locations.

7.2.2 Rectangular Single Cell Foundations with Opposed Entrances

Three examples of rectangular single cell foundations with opposed entrances were recorded; site 202 at 360m OD on a slope above the river in the valley of the Sawdde Fechan; and sites 406 and 408, at 250m OD and 295m OD respectively, on the open slopes of Drysgol (figs. 7:1 and 7:2). Each building is at right-angles to the contour. Sites 202 and 406 are certainly built on platforms, though these are much less substantial compared to building platform 805 (7.2.1 above). Site 408 may also possibly be built on a very slight platform. Foundations 406 and 408 are both roughly of the same size, c. 13m by 6m. Site 202 is considerably smaller, 8m by 5m. The low, relatively flat-topped banks at sites 406 and 408, built of small carefully laid stones, and the absence of significant quantities of tumbled stone, suggest that the banks served as footings for a timber or turf superstructure. This has been argued for some excavated sites, for example, Dinas Moddfa Upper House, Gelligaer Common, Glamorgan (A. Fox 1937, 253-4), and Beili Bedw, Powys (Courtney 1991, 242). The slump in the down-slope end-wall at site 406, an indication of a likely internal drain, is the only other feature of note.

It is unclear whether there is a real distinction to be made between this type of building and the building platform category of monument (7.2.1 above) which may have carried essentially the same form of building. The only difference may lie in the scale of the platform.

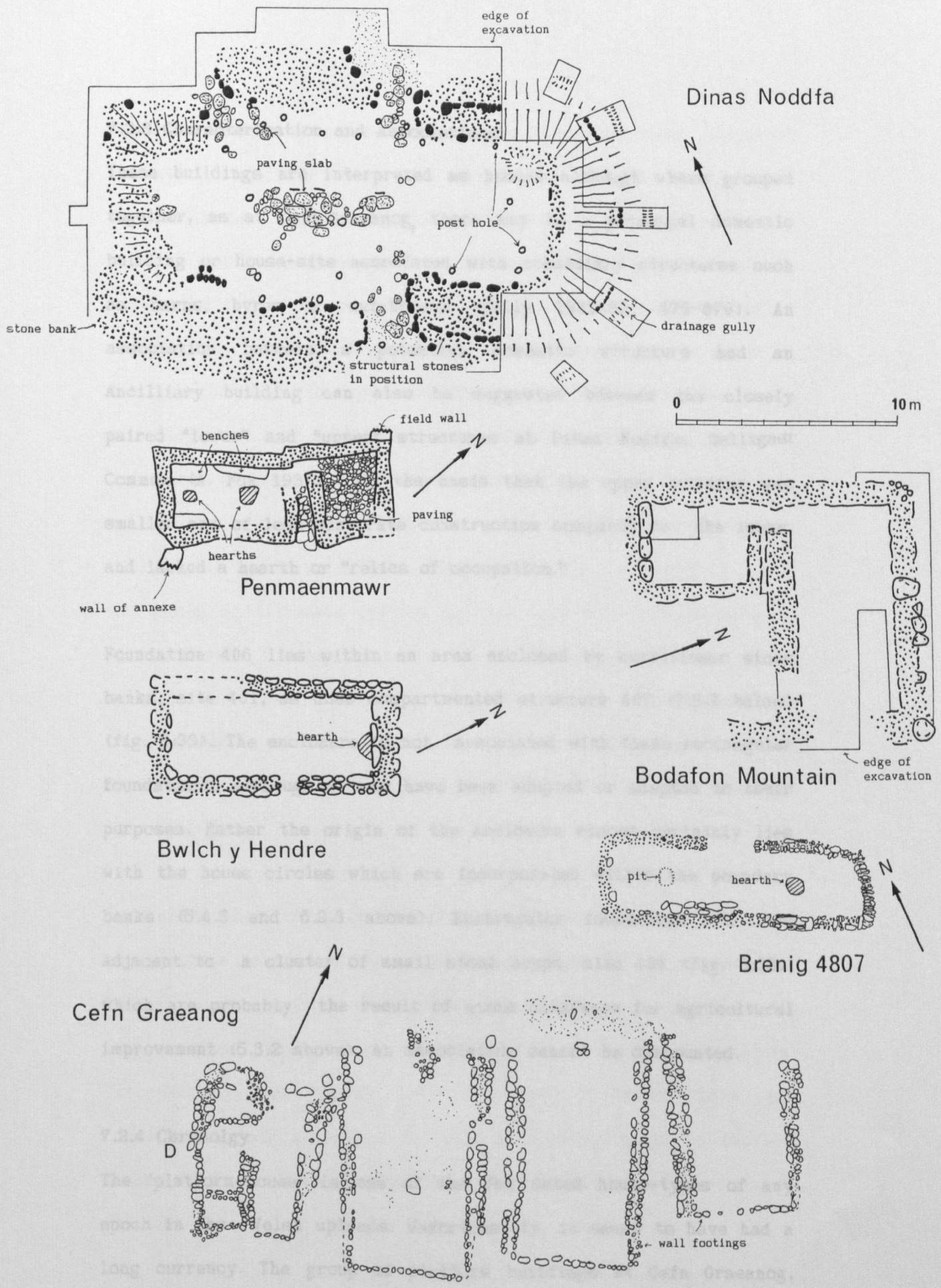


Fig. 7.3. Simplified plans of examples of excavated structures of Medieval or early Post-Medieval date from Wales: Dinas Noddfa Lower House (after Fox 1937); Penmaenmawr (after Griffiths 1954); Bwlch y Hendre (after Butler 1963); Bodafon Mountain (after Griffiths 1955); Brenig 4807 (after Allen 1979); Cefn Graeanog (after Kelly 1981-82).

7.2.3 Characterisation and Associations

These buildings are interpreted as houses although where grouped together, as at Cefn Graeanog, there may be a principal domestic building or house-site associated with subsidiary structures such as barns, byres or out-houses (Kelly 1981-82, 875-879). An association between a potential domestic structure and an ancilliary building can also be suggested between the closely paired "lower" and "upper" structures at Dinas Nodffa, Gelligaer Common (A. Fox 1937), on the basis that the upper building was smaller and of less elaborate construction compared to the lower, and lacked a hearth or "relics of occupation."

Foundation 406 lies within an area enclosed by curvilinear stone banks, site 401, as does compartmented structure 407 (7.3.2 below) (fig. 3:33). The enclosure is not associated with these rectangular foundations, although it may have been adopted or adapted to their purposes. Rather the origin of the enclosure almost certainly lies with the house circles which are incorporated within the boundary banks (5.4.3 and 6.2.3 above). Rectangular foundation 408 lies adjacent to a cluster of small stone heaps, site 409 (fig. 3:33), which are probably the result of stone clearance for agricultural improvement (5.3.2 above). An association cannot be discounted.

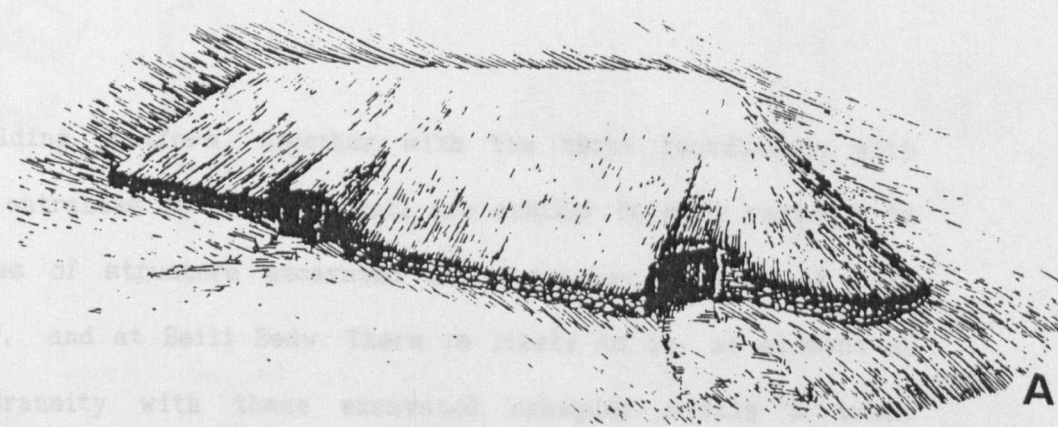
7.2.4 Chronolgy

The 'platform-house' is one of the few dated house-types of any epoch in the Welsh uplands. Unfortunately, it seems to have had a long currency. The group of platform buildings at Cefn Graeanog,

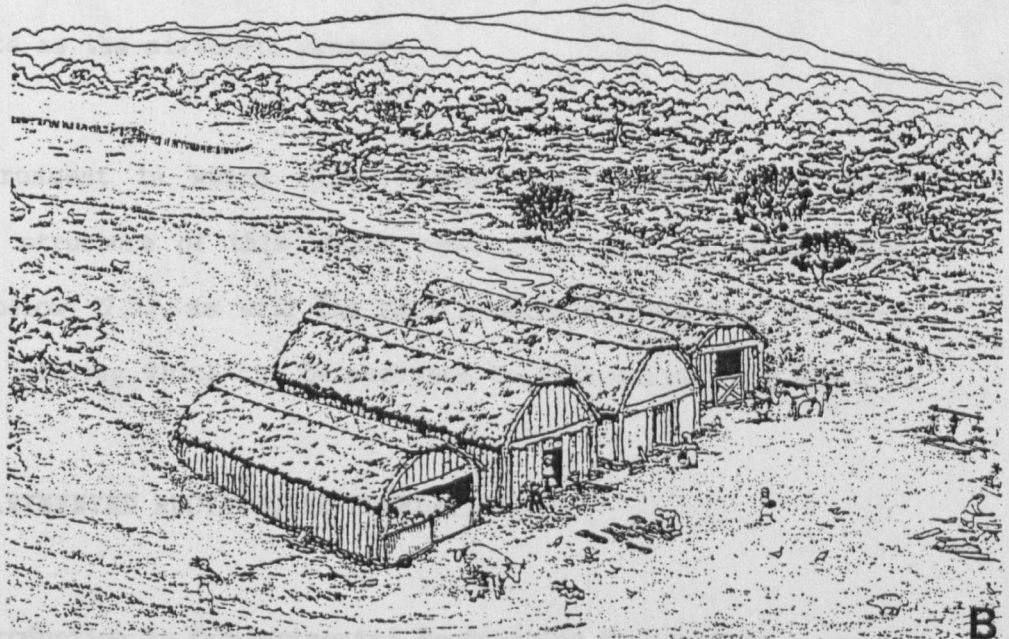
Gwynedd, was shown to have been used in the twelfth and thirteenth century AD on the basis of palaeo-magnetic and radiocarbon determinations (Kelly 1981-82, 875-882). Building A in this complex, which was interpreted as the house, had been preceded by a timber building with an unknown length of occupation. A period of activity at the platform house sites above Graig Spyddyd, Gelligaer Common, Glamorgan, was dated on ceramic evidence to the late thirteenth and early fourteenth centuries AD (A. Fox 1939). It has been suggested that timber features at the Dinas Noddfa buildings may relate to an earlier phase, though not earlier than the twelfth century (Knight 1984a, 401-2). A fragment of a fourteenth or fifteenth century jug was recovered from a ploughed platform site in the uplands west of Neath, West Glamorgan (H. Green 1953-4, 12). This type of structure appears to have continued to be used until the fifteenth and sixteenth centuries, as demonstrated by the ceramics from Belli Bedw, Powys (Courtney 1991, 241-2).

Excavation of three badly disturbed rectangular foundations built at right-angles to open slopes at Bryn Cysegrfan, Dyfed, showed that two, at least, had opposed entrances, while such an arrangement was evident from the survey of a fourth unexcavated structure. Unfortunately, no dating evidence was recovered from the foundations. Only a general Medieval attribution could be implied, taking into account associations with adjacent pillow mounds (Austin 1988).

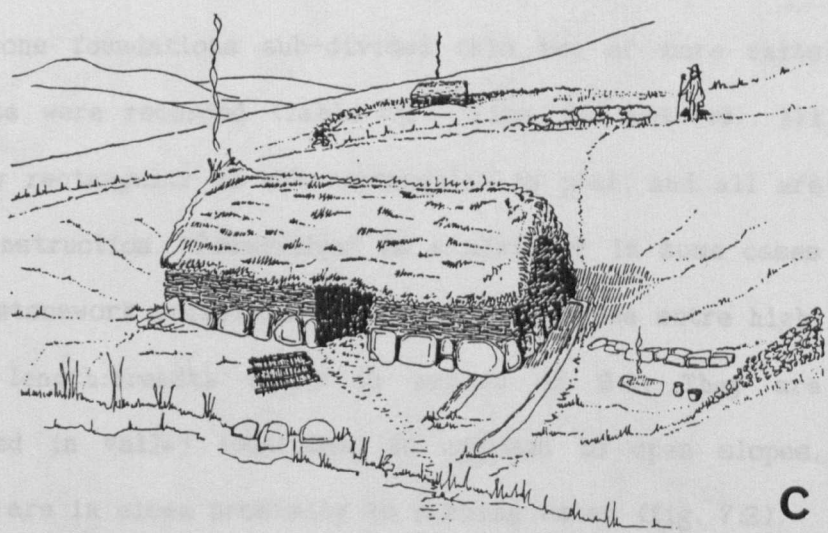
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Fig. 7:4. Imaginative reconstructions of excavated Medieval and early Post-Medieval buildings in the Welsh uplands. A: Dinas Noddfa Lower House (from Robinson 1983, drawn by J. Daly); B: Cefn Graeanog (from Kelly 1981-82, drawn by D. Lloyd Owen); C: Brenig 4805 (from Allen 1979).

The building platform, together with the three foundations with opposed entrances in the long wall are similar in many respects to the types of structure excavated on Gelligaer Common, at Cefn Graeanog, and at Beili Bedw. There is likely to be an element of contemporaneity with these excavated examples within a broad Medieval dating span, from perhaps as early as the twelfth century to as late as the sixteenth century.

The environment in which these foundations, and various other forms of structure of this epoch, were built will be considered further below (7.5), as will the relationship between the different types of building which can be assigned to this period (7.6 and 7.7).

7.3 COMPARTMENTED RECTANGULAR FOUNDATIONS

7.3.1 Introduction to Compartmented Rectangular Foundations

Forty-eight stone foundations sub-divided into two or more units or compartments were recorded (Table 7:1) (figs. 7:5 and 7:6). All are essentially rectangular to sub-rectangular in plan, and all are of drystone construction. "Foundation" is a misnomer in some cases since coursed stonework occasionally survives up to one metre high. Most have a length:breadth ratio in excess of 2:1. They are frequently sited in valley locations, as opposed to open slopes, and often they are in close proximity to running water (fig. 7:2).

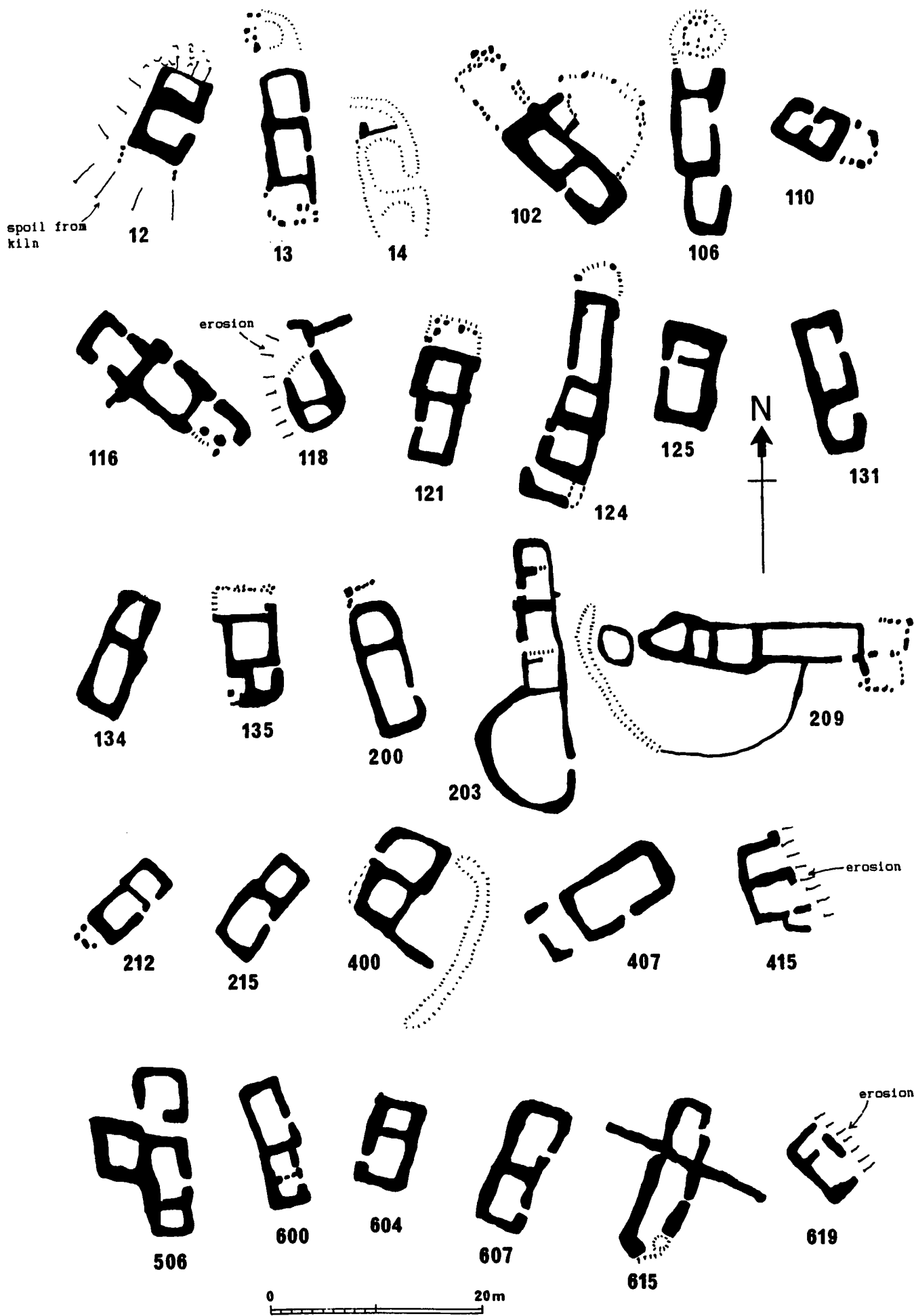


Fig. 7:5. Compartmented rectangular structures, sites 12 to 619 (except for building 119 the remains of which are too ephemeral to be planned).

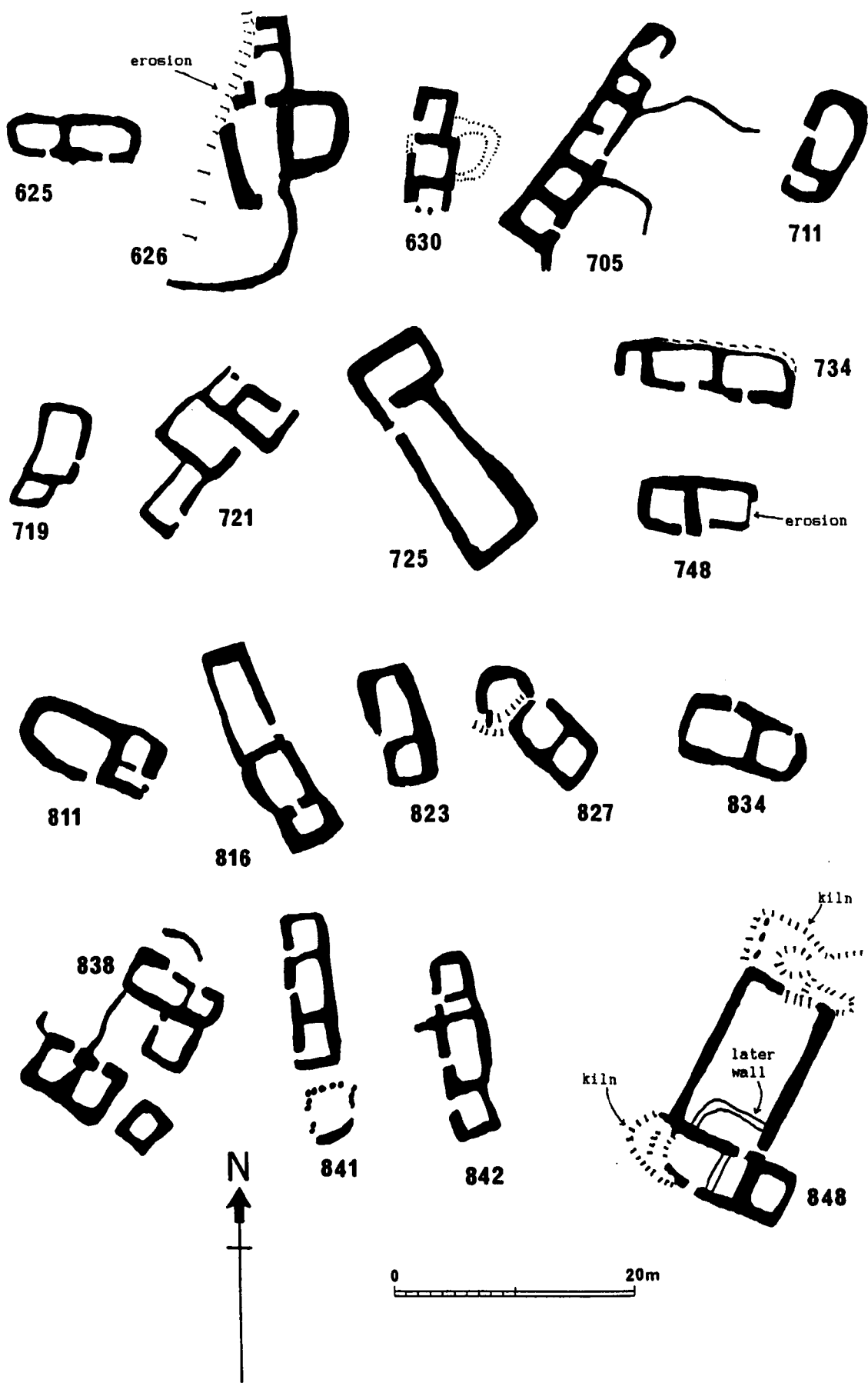


Fig. 7:6. Compartmented rectangular structures, sites 625 to 848.

Table 7:1 Compartmented Rectangular Structures

Site No.	On Platform	At Right-angles to Slope (Other Position)	No. of Compartments	Spaced-Boulder End Compartment
12	+	+	3	+
13	-	+	4	+
14	-	+	3	-
102	+	+	4	+
106	-	+	3	-
110	+	+	3	+
116	on river bank		3	-
118	on river bank		2	-
119	on river bank		2	-
121	+	+	3	+
124	+	+	4	-
125	+	+	2	-
131	-	+	2	-
134	-	+	2	-
135	-	+	4	+
200	on river bank		3	+
203	on river bank		4	-
209	across slight slope		6	+
212	across slight slope		3	+
215	on promontory		2	-
400	along terrace		2	-
407	across slight slope		2	-
415	-	+	2	-
506	-	+	4	-
600	-	+	3	-
604	on river bank		2	-
607	on river bank		2	-
615	on river bank		2	-
619	-	+	2	-
625	on river bank		2	-
626	on river bank		3	-
630	on river bank		3	-
705	on river bank		6	-
711	on river bank		2	-
719	on river bank		2	-
721	along terrace		4	-
725	along terrace		2	-
734	on river bank		3	-
748	+	-	2	-
811	+	+	3	-
816	-	+	2	-
823	along terrace		2	-
827	-	-	3	-
834	on river bank		2	-
837	+	+	3	-
841	-	+	4	-
842	+	+	4	-
848	along terrace		2	-

These are the most numerous foundations recorded, and tend to be the best-preserved. Also, they are the most complex in terms of the diversity of structural components. Hence they lend themselves to detailed analysis. However, while the analysis points to some interesting ideas, these should be treated with a degree of caution in view of the relatively small sample. The temptation to over-classify is resisted both on account of the sample size, and as will be indicated, because of the virtual absence of a close chronology (7.3.11 below).

7.3.2 Basic Form of Compartmented Rectangular Foundations

The compartmented buildings and foundations range in length from just over 7m to around 22m, with one example (site 209), 29.5m long. Generally the length:breadth ratio is at least 2:1. Of the forty-six structures for which reasonably reliable measurements could be taken (the length could not be determined at sites 12 and 119), twenty-five (54.3%) had a length:breadth ratio between 2:1 and 3:1; and fifteen (32.6%) had a ratio in excess of 3:1 (fig. 7:7). The numbers of compartmented buildings in relation to length are given in *Table 7:2*.

Table 7:2 Length	Length of Compartmented Buildings No. of Buildings
-10m	5 (10.8%)
10m-14m	25 (54.3%)
15m-19m	9 (19.6%)
20m+	7 (15.2%)

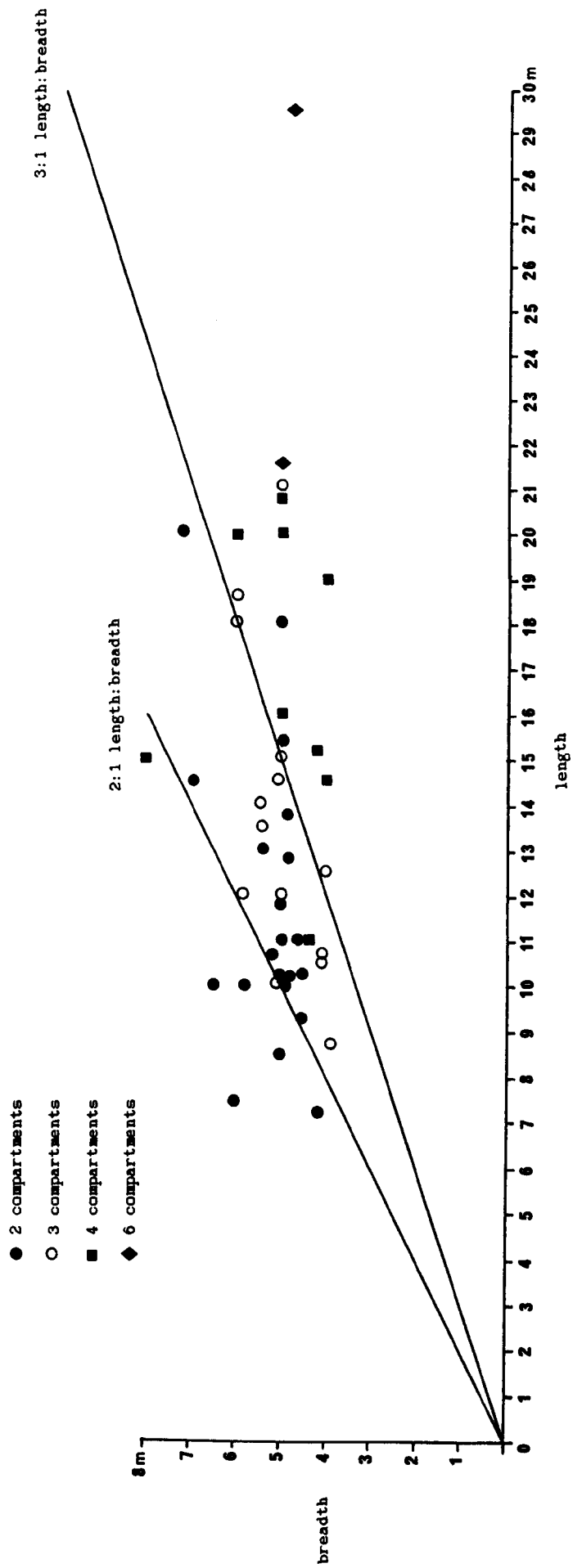


Fig. 7.7. Analysis of compartmented rectangular buildings in terms of length: breadth ratio and number of compartments.

While all the structures are in essence rectangular, some, such as sites 106 and 200, tend towards the sub-rectangular with one slightly rounded end, while others have slightly rounded corners, for example, sites 102, 131 and 203. Other buildings may be bowed, for example, foundations 124 and 816. A few have compartments attached to the long-axis wall, and a number have right-angled kinks in the long-axis wall, usually where compartments abut each other (7.3.3) (figs. 7:5 and 7:6).

Around twenty-one buildings, 43.75% of the total, are constructed at right-angles to the contours. Some are evidently on platforms scarped into the slope. Nine compartmented structures (18.6% of the total) are built on platforms which are at least partly artificial (Table 7:1, sites 12, 102, 110, 121, 124, 125, 811, 837, and 842). The artificial platform on which building 124 is built seems to be stepped since the floor levels of each compartment appear to descend with the slope (fig. 3:17). Another twelve compartmented foundations are also built with long-axes at right-angles to the slope, and some element of levelling may be suspected even if it is not now evident as a clear platform. For example, slight steps occur within the interiors of buildings 106, 125 and 203.

None of these buildings has a "hood" up-slope to provide protection from surface water. However, siting the structure end-on to the slope, as opposed to parallel to the contours, will of itself reduce the impact of storm waters (Fox 1940, 369).

Only one building, structure 748, seems to be constructed on a platform across the contours. Other buildings are on obviously natural terraces or on fairly level river banks (Table 7:1).

7.3.3 Compartments

Twenty-two structures (45.8%) have two compartments; fifteen (31.3%) have three compartments; nine (18.8%) have four compartments; and two (4.2%) have six compartments (Table 7:1). The two structures with six compartments are both in excess of 20m long. Of the nine with four compartments, eight are in excess of 14m long; the ninth, site 135, only 11m long, has two of the four compartments created by a dividing wall running down the long axis, an unique feature amongst these structures within the survey area (fig. 7:5). There does seem to be a correlation between the longer buildings over around 14m and sub-division into four or six compartments. However, foundations with two and three compartments span almost the entire length range, from c. 7m to 21m (fig. 7:7).

Nine foundations (18.8%) have an end-compartment defined only by a line of spaced-boulders (Table 7:1, sites 12, 13, 102, 110, 121, 135, 200, 209 and 212). These are all on the north face of the Mountain. Around thirty-two foundations (66.7%) have one or more compartments which, although of contiguous construction, are evidently of less substantial build than adjoining compartments: the walls or banks are slighter and perhaps lower, and often the compartments are considerably smaller. There can be a marked right-angled kink in one long-axis wall where compartments abut,

although this phenomenon is not confined to the junction between compartments of different scales of construction.

There are three instances in which compartments are built against one of the long sides of the building, sites 102, 506 and 837 (figs. 7:5 and 7:6). At four sites, compartments are separated from the main segment of the structure by a narrow break, although the detached compartment is on the same axis and clearly part of the range (sites 13, 209, 506 and 841) (figs. 7:5 and 7:6). Compartments at two buildings, adjacent sites 721 and 725 on the banks of the Afon Amman Fawr, are arranged in a roughly 'T'-shaped configuration (fig. 7:6).

7.3.4 Entrances

At site 506, it is possible that the gap between the northern end-compartment and the rest of the structure serves as a 'through-passage' since the entrance to the northern compartment gives on to it (fig. 7:5). 'Through-passages' or 'opposed-entrances' are present at sites 116 and 407, in both instances associated with smaller, end-compartments (figs. 7:5 and 7:6).

Except in two instances, external entrances are located in the long sides of the structures. The position of the entrance seems to be dictated by local topographical circumstance. There seems to be no preferred orientation for entrances as regards aspect, nor in relation to either running water or slope. Entrances may be flanked by larger boulders or orthostats. Others appear as simple gaps.

They are of varying dimensions, though usually not much more than one metre wide. Occasionally a sill-stone is visible. Entrances could not always be detected. Obviously dilapidation will have obscured some entrances. However, some compartments may have been entered through a gap in the wall above ground level.

Sites 415 and 626 are the two buildings which exceptionally have definite entrances in an end-wall (figs. 7:5 and 7:6). Both have long sides severely eroded by stream-action so it is possible that originally there were entrances in the long sides which had to be replaced by entrances in the end-wall.

Only nine foundations appear to have inter-connecting or partially-partitioned compartments, sites 110, 125, 203, 626, 705, 725, 811, 816, and 842 (fig. 4:25 and 4:26). Once again some compartments could have been interconnected above ground level through a break in the wall. No features which can be interpreted as window openings were noted.

7.3.5 Possible Structural Modification

Generally, structural modification after initial construction cannot be detected with any confidence, although it seems inherently likely that some buildings underwent repair, modification and extension. Compartments butting up against one another are common. A good example is building 600 where a slightly built southern compartment very clearly abuts a much more massively constructed northern compartment (fig. 3:43). However,

while a constructional sequence may be demonstrated, such evidence does not usually help elucidate the time-scale of the sequence. This is exacerbated by the often rather casual building techniques employed, which are considered in 7.3.6 below.

The best evidence for modification comes from building 626 in the valley of the Mant Garw. The possible addition of a later component was described in *Chapter 3*. Also in the Garw Valley, the northern compartment of building 615 may be a rebuild or later addition too. It is very different in character to the southern compartment; it overlies in part the northern end-wall of the southern compartment; and it also seems to be built on a slightly different alignment (figs. 3:42 and 3:46). It is also possible that building 13 succeeded building 14 on Pant Nant-fforchog, in view of their proximity and markedly different states of preservation (figs. 3:9 and 3:10).

7.3.6 Constructional Techniques, Materials and Fittings at Compartmented Rectangular Buildings

All the structures are of drystone or boulder-build. This is not to say that crevices between stones were not packed with some degradable material which has decayed or weathered away. No stone had obviously been dressed although some may have been split. Stone appears always to have been obtained locally. Millstone Grit, limestone and sandstones are all used.

The precise method of construction seems to have varied both according to the size and character of the material to hand, and the nature of the compartment since, as noted in 7.3.3 above, compartments within the same building may be constructed differently. For example, relatively small, and perhaps sometimes split, limestone blocks were used to build coursed-walls for the principal compartment of building 209. These were regularly laid and still stand to 1.1m high. The southern compartment at the well-preserved building 203 had footings and corners of larger boulders on which coursed-walls containing tie-stones were raised; yet the northern compartment was built largely of boulders and with much less care. This was described in *Chapter 3*.

Boulders were commonly used to buttress corners and walls on steeper slopes. While some compartments comprise several tiers of boulders, others are formed by only a single tier of contiguous boulders, or the spaced-boulders noted above (7.3.3). The use of boulders, including some orthostats, is particularly noticeable at buildings 719, 721 and 725 which are grouped in close proximity to one another along the Afon Amman Fach (figs. 3:53, 3:57 and 3:58). Another distinctive technique was the employment of parallel faces of stone slabs on edge to retain a rubble core. This was used not only in the construction of compartmented buildings, but also for some ancillary structures, for example sites 814, 816, 817 and 848 (figs. 3:63, 3:69, 3:70 and 3:75). Once again, this particular technique appears to have been favoured in one particular locality within the survey area, the valley of the Afon Twrch.

Timber and turves could have been used in a number of ways to sub-divide or extend the stone elements which are presently visible. Where surviving walls are relatively low and consistently level, as at building 102, they may have carried a superstructure of turf or wattle. Timber, wattle and hide could have been used to seal entrances when necessary.

No thinly split stone, which could have been used as roofing material, was noted amongst the tumble within or around any of the structures. It is therefore assumed that reed or straw thatch, or turves, most likely provided a roof covering over a timber framework, although the use of wooden shingles or hides cannot be entirely discounted. At building 604 a concentration of tumbled stone at the southern end of the structure possibly suggests a tumbled gabled end. However, evidence for roofing arrangements was almost entirely absent. Not all compartments in a range need necessarily have been roofed.

Little in the way of internal features is evident. Well-defined slumps in the end-wall of the main compartment at structure 203, and in end-walls at structures 134 and 604 suggest a collapse into an underlying drain (figs. 3:19 and 3:24). Flat slabs were noted paving the larger compartments at buildings 203 and 816 (figs. 3:24 and 3:70). A large flat-topped slab, against the end-wall of the central compartment at foundation 841, could have served as a bench (fig. 3:74). There is an arrangement of orthostatic slabs, about 1.6m across, partially obscured within tumble, in one corner

of the principal compartment at building 200 but this need not be a primary feature (fig. 3:23). However, it may be paralleled by a similar arrangement within building 100 (fig. 3:15 and 7.4.1 below).

7.3.7 Structures Associated with Compartmented Rectangular Buildings

Stone-built structures, which can be interpreted as ancilliary buildings, have been identified in association with thirty-five compartmented rectangular foundations, 73% of the total. They are regarded as ancilliary structures on account of, variously, their proximity to the major compartmented foundations, their smaller size and often even-simpler construction.

All the ancilliary structures are built with drystone or boulder techniques which echo those described in relation to the major foundations though they are often built still more simply. They are diverse in scale and shape (fig. 7:8). The most substantial ancilliary structure is a rectangular enclosure, site 818, measuring 22m NW-SE by 12.5m NE-SW, apparently associated with compartmented building 816 in the Twrch Valley (figs. 7:8 and 3:70). This may be interpreted as a pen and is probably analgous to some of the annexes discussed in 7.3.8 below. In contrast, other ancilliary structures are only simple boulder settings such as 613 (figs. 3:45 and 7:8).

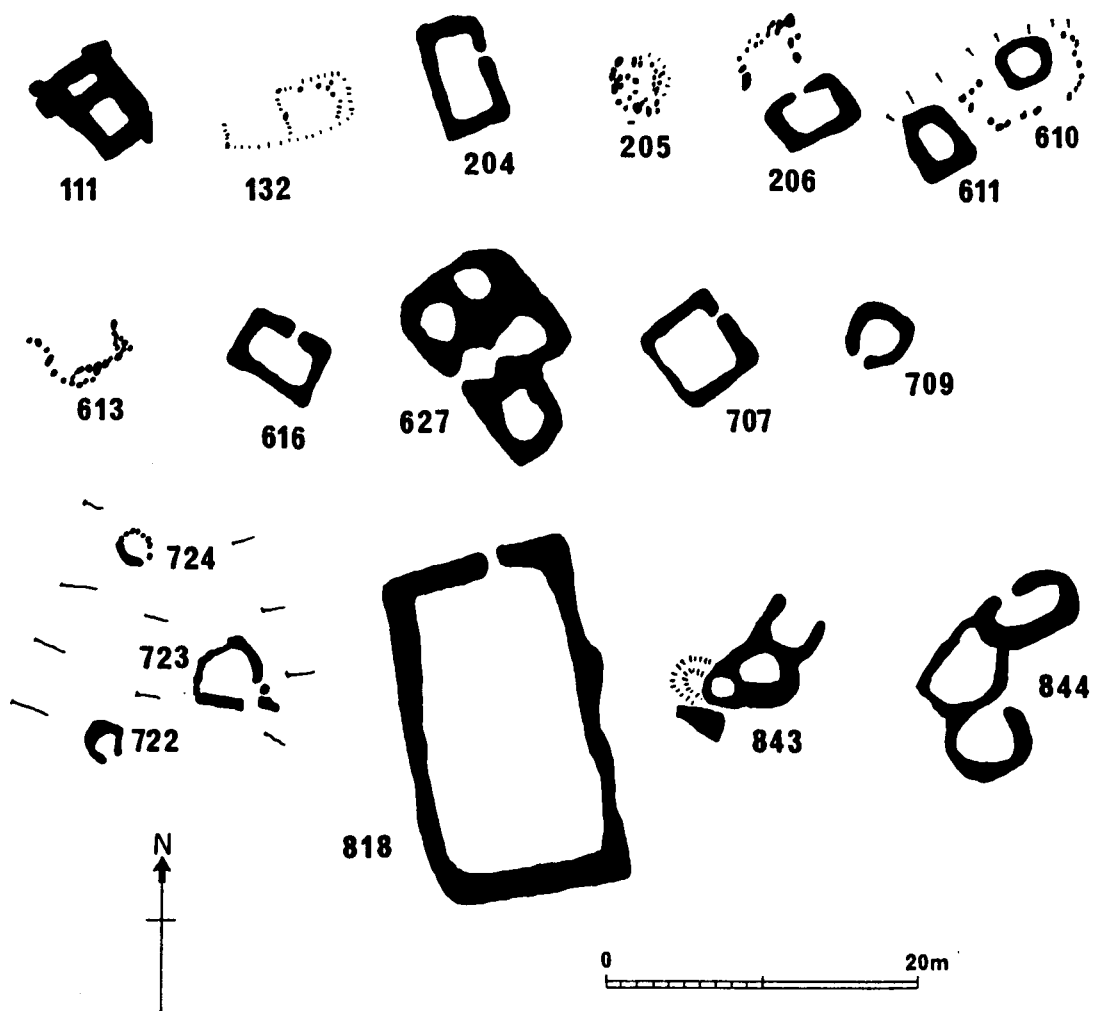


Fig. 7:8. Some ancilliary structures associated with compartmented rectangular buildings.

A relatively common form of ancilliary structure is an annular or sub-annular stone and boulder bank or wall, 2m to 5m across, perhaps with a break in the ring, enclosing a central open area. These may cluster together, for example, sites 722, 723 and 734, or indeed as at sites 627, 843 and 844 combine to form several

conjoined cells within a single structure (fig. 7:8). Other ancilliary buildings can be square, rectangular or sub-rectangular, such as 204, 206, 616 and 707 (fig. 7:8). These tend to be amongst the more substantial constructions and they may be sub-divided, for example, site 111 (fig. 7:8), and 838 (fig. 7:6). Some ancilliary structures may incorporate a second component of much slighter build, such as an area demarcated by boulders, for example, sites 206 and 610 and 611 (fig. 7:8).

Ancilliary structure 838 is joined to compartmented building 837 by a short length of wall (fig. 7:6). Its dwarf walls clearly distinguish the building from the much more massively constructed principal building 837. There is a similar link between compartmented foundation 705 and ancilliary structure 706 (fig. 3:55).

The extent to which any of these structures were roofed is speculative. However, at a couple of the smaller circular structures (205 and 617), there is so much stone within the interior that at least a partially corbelled roof can be suspected.

The number of ancilliary structures associated with any one compartmented foundation ranges from one to six, although 74% have only one or two (Table 7:3).

Table 7:3 Association of Ancilliary Structures with Compartmented Rectangular Buildings

<i>No. of Compartmented Buildings</i>	<i>No. of Ancilliary Structures</i>
12 (34.1%)	1
14 (40.0%)	2
4 (11.4%)	3
3 (8.6%)	4
1 (2.9%)	5
1 (2.9%)	6

There seems to be no particular correlation between the number of compartments within a rectangular building and the number of ancilliary structures (Table 7:4). Buildings with two compartments can have between one and six ancilliary structures, while buildings with four compartments can have between one and five ancilliary structures.

Table 7:4 Number of Ancilliary Structures in Relation to the Number of Compartments per Building

<i>nos. of compartments</i>	<i>no. of ancilliary structures</i>						
	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	
2	9	4	-	1	-	1)
3	3	4	2	1	-	-	<i>no. of</i>
4	2	1	2	-	1	-	<i>buildings</i>
6	-	1	-	1	-	-)

There also seems to be no correlation between the apparent absence of ancilliary structures and the number of compartments in a building. Twenty-seven percent of buildings with two compartments, 26.7% of those with three compartments and 33.3% of those with four compartments appear not to have any stone-built ancilliary structures.

Of course, ancilliary structures could have been built entirely of wood or turves. In any event, some apparently isolated lesser structures, both within the valleys (7.4.1 below) and on open slopes (6.2.3 above), might have been associated with compartmented structures. Further, compartmented buildings may have shared the facilities of ancilliary structures on a common basis.

7.3.8 Annexes and Cultivation Plots Associated with Compartmented Rectangular Buildings

Compartmented buildings with annexes or detached cultivation plots are listed in *Table 7:5*. An annexe is defined here as an enclosure which is either physically attached to the compartmented building, or is very close to it with banks converging on, if not actually touching, the building. Plots are adjacent to, but not apparently physically connected with, or aligned on buildings. Around 35% of compartmented buildings have annexes or plots.

Table 7:5 **Compartmented Buildings with Annexe or Cultivation Plot**

<i>Building</i>	<i>extent of annexed areas</i>	<i>extent of detached plot</i>
102	c. 40m ²	-
116	c. 190m ²	-
118	c. 50m ²	-
121	-	c. 600m ² (site 123)
203	c. 58m ²	-
209	c. 120m ²	-
400	c. 65m ²	-
615	unquantifiable	-
626	2 annexes at c. 14m ² and 50m ²	c.1000m ² (site 629)
630	2 annexes at c. 50m ² and 10m ²	-
705	c. 600m ²	possible clearance represented by linear banks (site 710) but area unquantifiable.
748	-	c. 800m ² (site 750)
811	2 annexes at c. 60m ² and 110m ²	area associated with stone clearance features unquantifiable.
848	c. 90m ²	-

Annexes are delineated by stony banks or boulders. They may be open on one side, or have a side formed by a steep slope or stream. The area enclosed varies considerably but most are in the range of around 40m² to 120m². They are present at up to twelve sites (25% of compartmented buildings), although the character of the feature formed by the banks projecting at right-angles from building 615 must be speculative (fig. 3:46). Three buildings, sites 626, 630 and 811, have two annexed areas. The distinction between an annexe and a compartment integral to

a building is not always clear. For example, the largish 'compartments' forming the long axis at the unusual 'T'-shaped buildings, 721 and 725, could be regarded as annexes (fig. 7:6), although for present purposes they have been deemed compartments. Annexes may have served as pens or as gardens. There are possible indications of hand-digging within the annexe attached to building 116 (fig. 3:16).

Plots are generally larger than the annexes, up to c. 1000m² (Table 7:5). They are defined by features which indicate stone clearance or cultivation. Plots are potentially associated with five compartmented structures, 10.4% of the total. Lynchets and small clearance cairns are present at plot 123 next to building 121 (fig. 3:18). Stony strips delineate small cleared areas at plot 629 alongside building 626 (fig. 3:48). Similar features lie adjacent to building 748 - an association between this plot and building 748, rather than with enclosure 747 (fig. 3:61), is preferred on account of its similarity to plot 629 alongside building 626 (fig. 3:48).

Stone clearance feature 812 alongside the Afon Twrch could be associated with building 811 although it is not possible to closely define a cleared or cultivated area. Two linear banks on the edge of the stream in the valley of the Nant Fydd, site 710 50m north of building 705, are likely to be the product of stone collection (fig. 3:55). As discussed in Chapter 3, they cannot be easily explained as entirely natural accumulations.

While no clearly defined plot can be seen on the adjacent slope, it is relatively stone-free and better drained than adjoining areas. The unusual position of these stone banks may be explained by a desire to consolidate the river bank against erosion in order to help protect the structures a short distance down-stream from flooding (7.3.9 below).

There are examples of another three possible clearance plots in valley locations, the stony accumulation and strip alongside the Afon Ceulan, site 139; the stony pile 623 close to the Nant Garw,, and the stony pile and stony strip, sites 730 and 731 on the floor of the Afon Amman (5.3.2, Table 5:2 above). These cannot be associated with any particular compartmented structure though compartmented buildings are the dominant structures in these valleys.

7.3.9 Topographical Location of the Compartmented Rectangular Foundations

The compartmented buildings are sited in locations ranging from c. 200m OD to approaching 500m OD. Seventy-three percent, however, lie within a 100m band of altitude between 240m OD and 340m OD (figs. 7:2 and 7:9). There seems to be no very marked correlation between building size as defined by length, and the altitude of location, apart from the location of a relatively large number of buildings 10m to 14m in length, between 260m OD and 319m OD (Table 7:6). This is unlikely to be of significance as 10m to 14m is the most common size band (Table 7:2). The largest building, site 209

(fig. 7:5), is sited at greatest altitude, at around 480m OD. However, there are two much smaller compartmented buildings, sites 212 and 215 (fig. 7:5), grouped with it at approximately the same altitude.

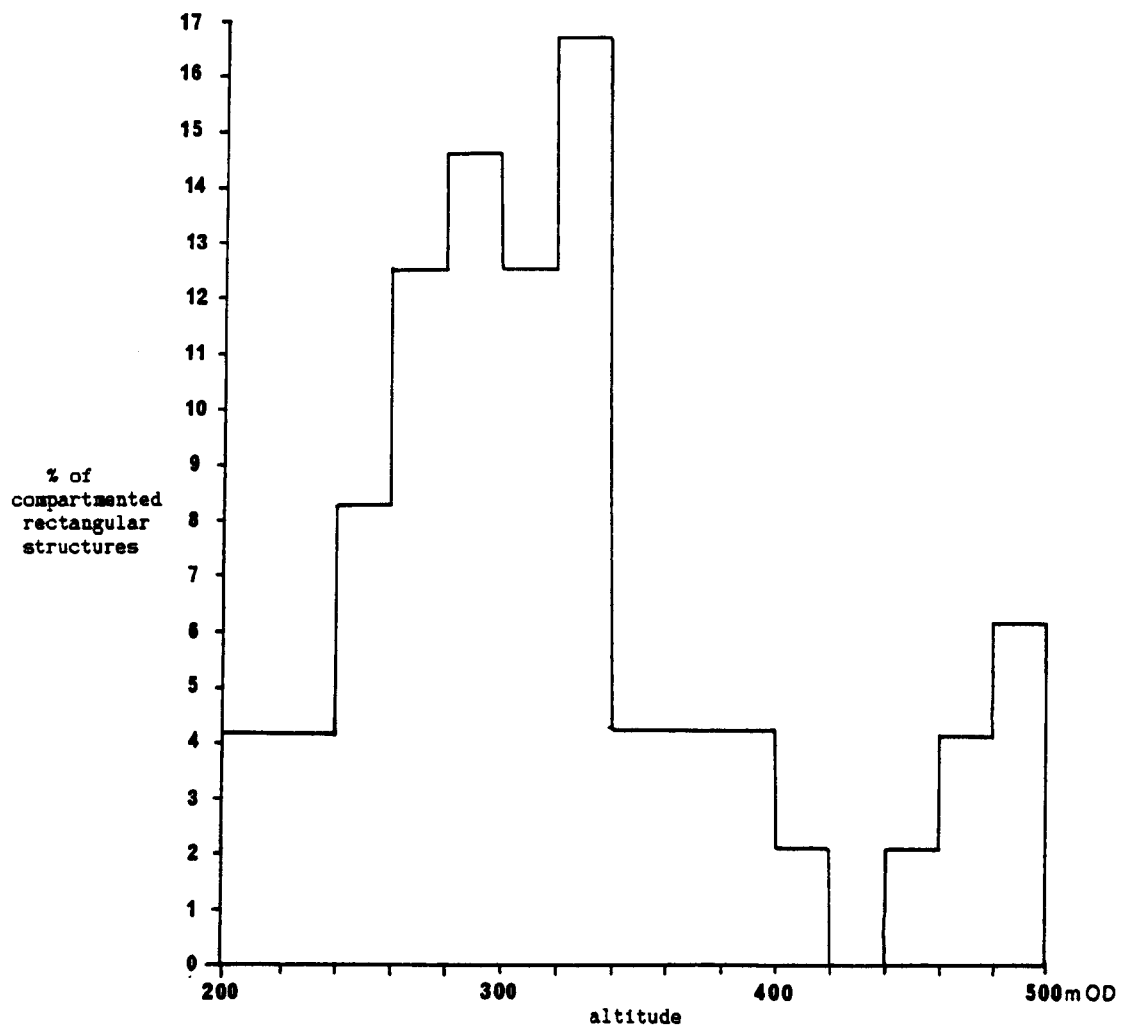


Fig. 7:9. Compartmented rectangular buildings in relation to altitude.

Around 85% of the compartmented rectangular buildings are located in the eastern half of the survey area, to the east of a line formed by the Clydach and Garw valleys (figs. 1:5 and 7:2).

Table 7:6 Correlation between Building Size, as Indicated by Length, and Altitude of Location

<i>Altitude OD</i>	<i>Maximum Length of Compartmented Buildings</i>				
	<i>5-9m</i>	<i>10-14m</i>	<i>15-19m</i>	<i>20-25m</i>	<i>25+</i>
200-259m	-	6.5%	6.5%	4.3%	-)
260-319m	6.5%	23.9%	6.5%	2.2%	-) % of
320-379m	4.3%	13.0%	4.3%	2.2%	-)compartmented
380-439m	-	4.3%	2.2%	-	-)buildings
440-500m	-	6.5%	-	4.2%	2.2%)

All the buildings associated with possible cultivation plots lie between 260m OD and 300m OD. Those with annexes, however, are located across the maximum altitudinal range.

Some ten compartmented buildings (21% of the total) are in locations which have an open aspect on the slopes of the Black Mountain. The large majority is in valley locations, on valley floors, on low promontories between streams, or on terraces in the sides of valleys (fig. 7:2). Those on valley-sides, such as buildings 816, 827 and 848 on the western slope of the Twrch valley (fig. 3:63), may also have a relatively open aspect in one direction.

Again, the large majority is proximate to flowing water (fig. 7:2). Those on valley floors, on promontories between streams, or on

valley sides adjacent to tributaries, about 73% of the total, are immediately adjacent to flowing water. It is difficult to say that any of the buildings were constructed away from flowing water because of the possibility of hydrological change since their construction. However, it appears unlikely that buildings 13 and 14, on the narrow floor of a dry gully on Pant Nant-fforchog (fig. 3:9), or building 125 towards the foot of the open slopes of Waun Lwyd (fig. 3:14), or building 131 at the foot of Truman (fig. 3:14), ever had flowing water particularly close by. Even some of the buildings high on the valley side above the Afon Twrch may not have had convenient access to flowing water, which was perhaps no more than 250m distant, on account of precipitous slopes (fig. 3:63).

Given the large number of buildings on low river banks which are exposed to erosion and flooding, it is noteworthy that there is little surviving evidence for protective measures. Only the stony banks, site 710, 50m north of building 705, can be interpreted as a possible attempt to consolidate the river bank and to maintain the course of the Nant Fydd (fig. 3.55) (Chapter 3, and 7.3.8 above).

There is a tendency for compartmented rectangular buildings to group together in, what might be called, patterns of dispersed-nucleation. Such distribution may in part result from an apparent preference for valley locations. However, clusters of buildings within general localities, such as sites 102, 106 and 110 beneath Moel Gornach; sites 116, 118, 119, 121, 124 and 125 at the lower

end of the valley of the Afon Clydach; sites 209, 212 and 215 at Blaen y Cylchau, are noteworthy (fig. 7:2).

The buildings are located over various geological solids. Similarly they are distributed across almost the total diversity of soil types, the majority being within areas covered by the two most widespread soils, cambic stagnohumic gleys and humo-ferric podzols (fig. 7:10). The precise character of the soils underlying many of the valley floor buildings may well show considerable variability on account of fluvial action.

7.3.10 Summary of Significant Features at Rectangular Compartmented Buildings

At this point, a summary of the significant features and characteristics of compartmented rectangular buildings, their associations, and siting can usefully be provided.

As regards structure:-

- a) all buildings are of drystone and boulder construction using locally available materials.
- b) all structures are rectangular to sub-rectangular in shape, and the large majority have a length:breadth ratio of at least 2:1.
- c) compartments vary in terms of size, scale of construction and method of construction within a single building. In particular some compartments are of slighter build, others are defined only by spaced-boulders.

d) some local design or constructional preferences can be identified such as the use of spaced-boulders at buildings on the northern slopes of the survey area; orthostats within buildings along the Afon Amman Fach; and slabs on edge retaining a rubble fill at sites in the valley of the Afon Twrch.

e) around 19% of buildings are obviously on scarped platforms at right-angles to the contour. However, in total, over 40% are built at right-angles to the contours.

As regards associations:-

a) ancilliary structures are associated with the large majority of buildings (73%).

b) annexes are attached to around 25% of buildings.

c) potentially, around 10% of buildings are associated with evidence of stone clearance, although only in three instances (6.3% of buildings) could actual plots be clearly defined.

As regards location:-

a) there is a tendency for compartmented buildings to group in dispersed clusters with the greatest concentration in the eastern part of the survey area.

b) only around 21% of buildings are located in positions affording an open aspect on the slopes of the Mountain. The large majority is in valley locations, 73% close to flowing water.

c) although they have a wide altitudinal range between 200m OD and 500m OD, 73% fall between 240m OD and 340m OD. They are also widely distributed across the various soil types.

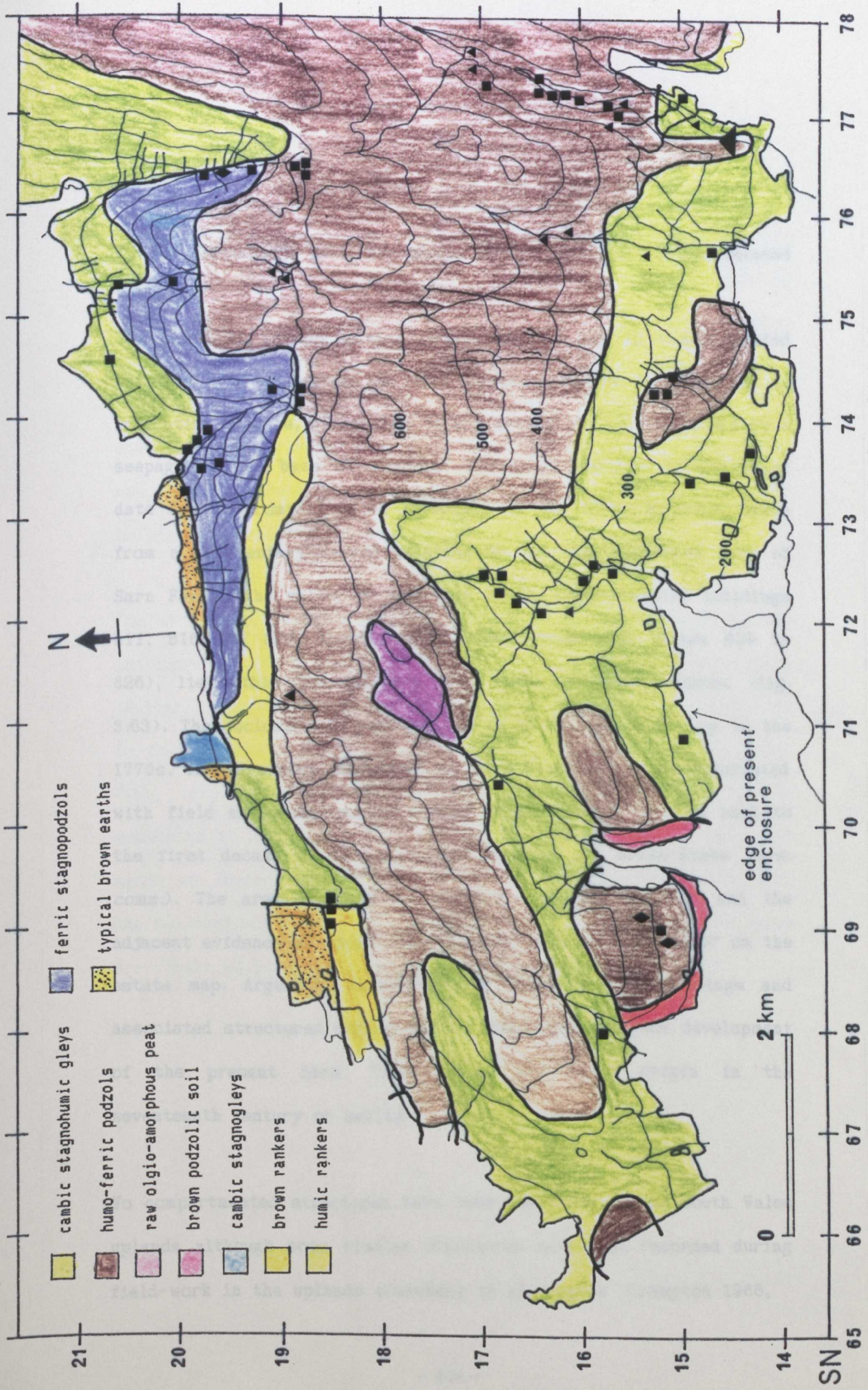


Fig. 7:10. Compartmented rectangular buildings ■, major single cell buildings in valley locations ▲, foundations with opposed entrances ◆, and platform-house ▲ in relation to soil types.

7.3.11 Chronology and Analogues for Rectangular Compartmented Buildings

The sherd of Romano-British flagon found close to compartmented building 116, alongside the Afon Clydach, cannot be taken as an indication of date, given that it was eroded out of the ground by a seepage at the base of a slope. The only positive indication of date for the compartmented buildings on the Black Mountain comes from a documentary source relating to the now abandoned farm of Sarn Fan in the valley of the Afon Twrch. Compartmented buildings 811, 816 and 823, together with other structures (sites 809 to 826), lie within the enclosed area north of the farmhouse (fig. 3:63). The enclosure is recorded on an estate map drawn up in the 1770s. The farmhouse, described as *Sarn Faen* [sic], and associated with field enclosure can be traced through estate records back to the first decade of the eighteenth century (M. Bowen-Evans pers. comm.). The area occupied by building 811, its annexes, and the adjacent evidence of stone clearance, is labelled "old walls" on the estate map. Arguably, therefore, the compartmented buildings and associated structures within the enclosure pre-date the development of the present farm. This should put their origin in the seventeenth century or earlier.

No compartmented structures have been excavated in the South Wales uplands although some similar structures have been recorded during field-work in the uplands elsewhere in the region (Crampton 1966,

1968; Miller 1967; RCAHM 1982; Davis 1988 and 1989). Comparison is often hindered by an absence of published plans but a close parallel is offered by a building at Cefn Cmw Llŵch, further to the east along the north face of the Brecon Beacons (Crampton 1966) (fig. 7:11, no. 2). Compartmented buildings in the Glamorgan hills seem to offer parallels too, although 'fireplaces' have been identified within these structures (Davis 1988 and 1989) (fig. 7:11, nos. 1 and 3), features which are not apparent in the compartmented buildings within the survey area.

The excavation reported as having taken place at a compartmented building at Nant-y-Moch in the Upper Wedd valley, Breckonshire (Butler 1971, 259 and 270; RCAHM 1982, 18) seems to have amounted to no more than a detailed planning exercise (C. Fox 1940) (fig. 7:11, no. 7). Compartmented buildings are described in the mountains of North Wales too (RCAHM 1956, 1960 and 1964), although again an absence of published plans inhibits comparison. However, the building at Ddol, site A, Caernarvonshire, illustrates that some are likely to be comparable (Gresham 1954) (fig. 7:11, no. 4).

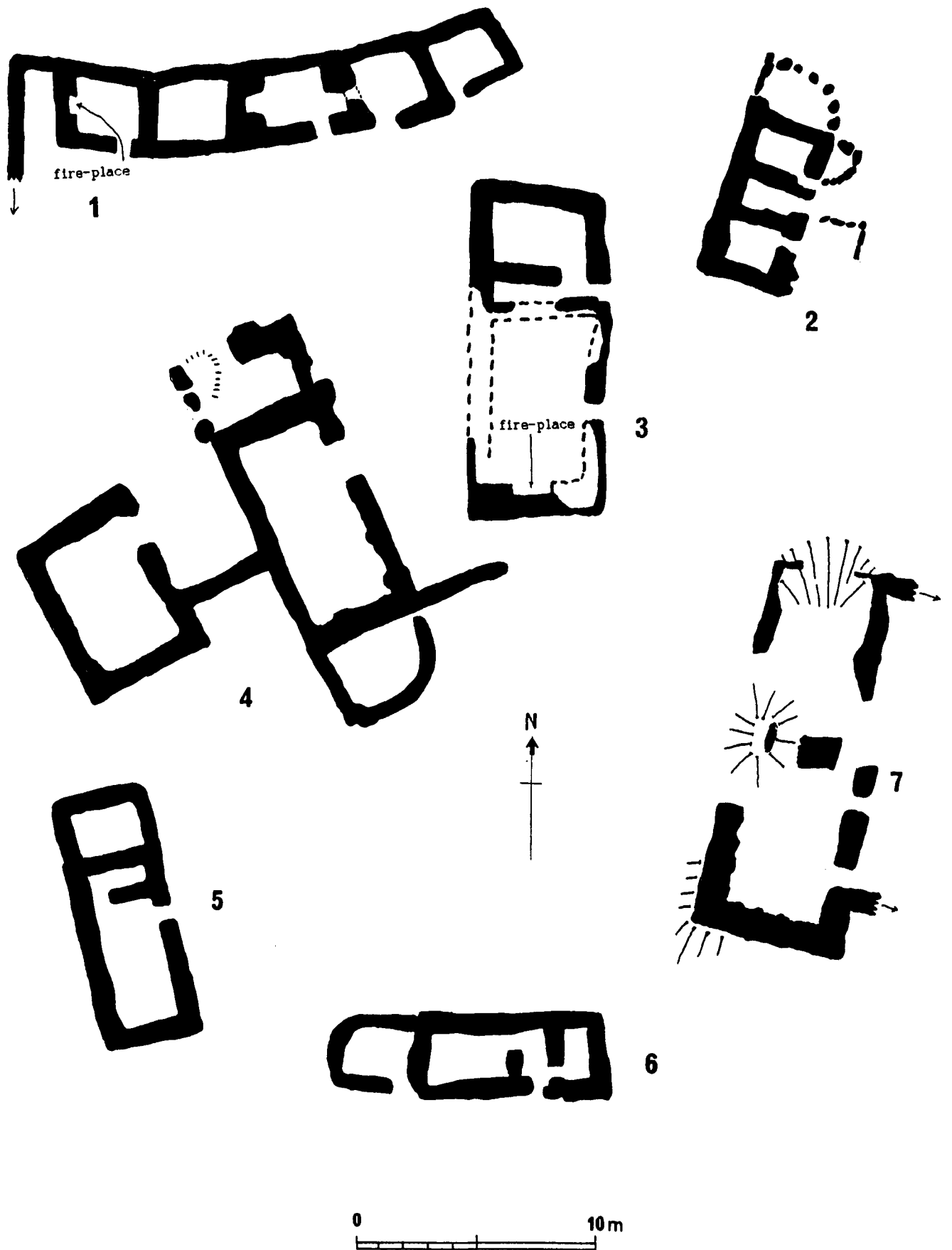


Fig. 7:11. Comparative plans of compartmented rectangular buildings. 1: on Rhigos Ridge, Hirwaun, Mid-Glamorgan (after Davis 1989); 2: Cefn Cwm Lluch, Brecon Beacons (after Crampton 1966); 3: Cwm Saerbryn, Rhondda Valley (after Davis 1988); 4: Ddol Site A, Caernarvonshire (after Gresham 1954); 5: Askerton North Moor, Cumberland (after Ramm *et al* 1970, fig. 1, no. 16); 6: Tynedale Liberty, Northumberland (after Ramm *et al*, fig. 1, no. 87); 7: Upper Nedd Valley, Ystradfellte, Brecknockshire (after Fox 1940).

A compartmented rectangular structure, excavated on Penmaenmawr, Caernarvonshire (fig. 7:3), gave the "impression" that it was not earlier than the 16th century AD (W. E. Griffiths 1954, 83), illustrating the problems of close dating when material culture is entirely lacking. This site was associated with field walls and may not be strictly comparable to the structures within the survey area. A rectangular building of rather different form, with an annexed second compartment, on Bodafon Mountain, Anglesey (fig. 7:3) produced pottery of sixteenth to eighteenth century date (W. E. Griffiths 1955, 19).

Building D at Cefn Graeanog, Gwynedd, was interpreted as a structure covered by a single roof. It was viewed as a stable with internal divisions for stalls (Kelly 1981-82, 873) (fig. 7:3). The configuration of the internal compartments resembles buildings within the survey area. An alternative reconstruction of the building would be as a roofed compartmented rectangular structure fronted by a partially enclosed yard. Building D was contemporary with the other adjacent platform structures dated to the twelfth and thirteenth centuries AD (7.2.4 above). However, even with a re-interpretation of the structure, it probably does not provide a good analogy with the compartmented buildings of the survey area which were probably habitations (7.3.12 below), while building D at Cefn Graeanog remains a probable ancillary building within the complex. Similarly, further afield at Simy Folds, Upper Teesdale, Co. Durham, two compartmented buildings within a cluster of excavated drystone buildings were considered to be subordinate to

a rectangular single cell structure (Coggins et al 1983, 6, and 12-14).

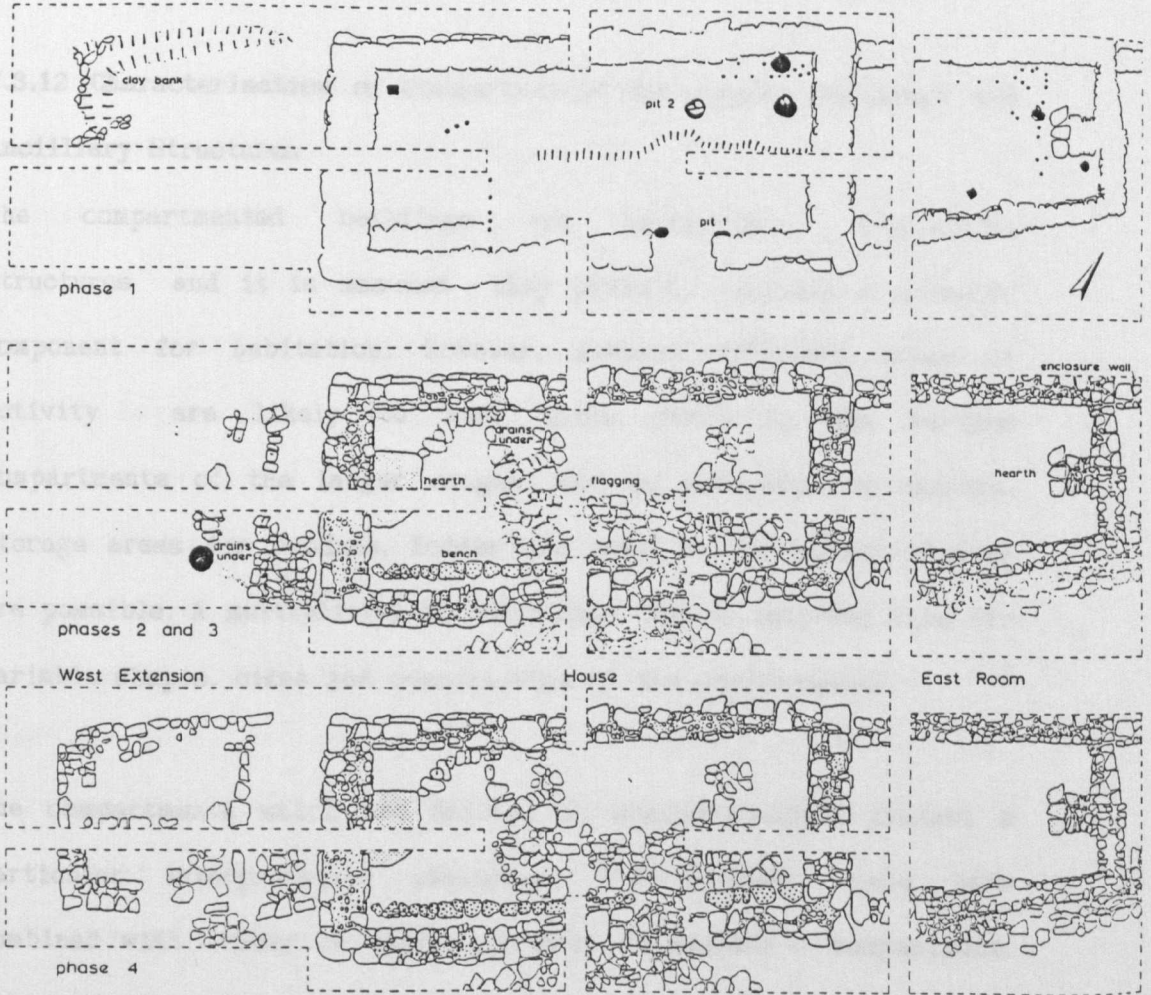
Other structures recorded in the North of England offer better potential parallels. There are closely comparable compartmented forms which seem to be principal buildings, often with associated lesser ancillary structures. Frequently they are sited close to running water (Ramm et al 1970, 9-39; Harbottle and Newman 1973, 154-8, and 1977, 124-9) (fig. 7:11, nos. 5 and 6). Some are taken to be associated with the practice of transhumance. This provides a very general indication of the period to which they belong since transhumance in the area is documented from as early as the 13th century although place-name evidence can take the practice back to the tenth and eleventh centuries AD. It appears to have survived to the sixteenth and seventeenth centuries AD (Ramm et al 1970, 3-4).

However, dating based on problematic distinctions between seasonal and permanent occupation (14.4.4 below) is difficult. Excavation of substantial compartmented buildings at Sandboard Knowe and Longwalls, North Tynedale (fig. 7:12), has been interpreted as confirming the possibility that some of compartmented buildings were permanently occupied from the mid-sixteenth through to the early seventeenth centuries, albeit for brief periods (Harbottle and Newman 1977, 139-154). Sandboard Knowe is a particularly interesting structure. A stone building, with four phases of construction between the seventeenth and early eighteenth century, is predated by possible late Medieval activity (Harbottle and

Newman 1977, 139-42). Another potentially analogous site was dated by excavation, at Smithy Beck, Ennerdale, Cumberland. Pottery dating from the late fourteenth to sixteenth centuries was recovered (Fletcher and Fell 1987, 31-35). However, this building differs from the structures within the survey area in that the primary compartment is tightly girdled by an outer wall to the outer face of which a second compartment is attached. It is taken to have been a habitation for miners rather than associated with transhumance (Ramm *et al* 1970, 36).

The relationship of the compartmented structures in the survey area to classic platform-house type buildings (7.2 above) and single cell structures in valley locations (7.4 below) will be discussed below (7.7) where it will be argued that there was chronological overlap between different forms. As has been demonstrated, closely dated parallels for the compartmented structures are difficult to find. Certainly in Wales they are the least well-dated group within this general category of rectangular foundations. On the basis mostly of analogy with examples from the North of England, a broad Medieval to early Post-Medieval dating band is proposed. They could be as early as the twelfth century AD although excavated examples in the North of England tend towards the late Medieval to early Post-Medieval periods.

SANDBOARD KNOWE



LONG WALLS

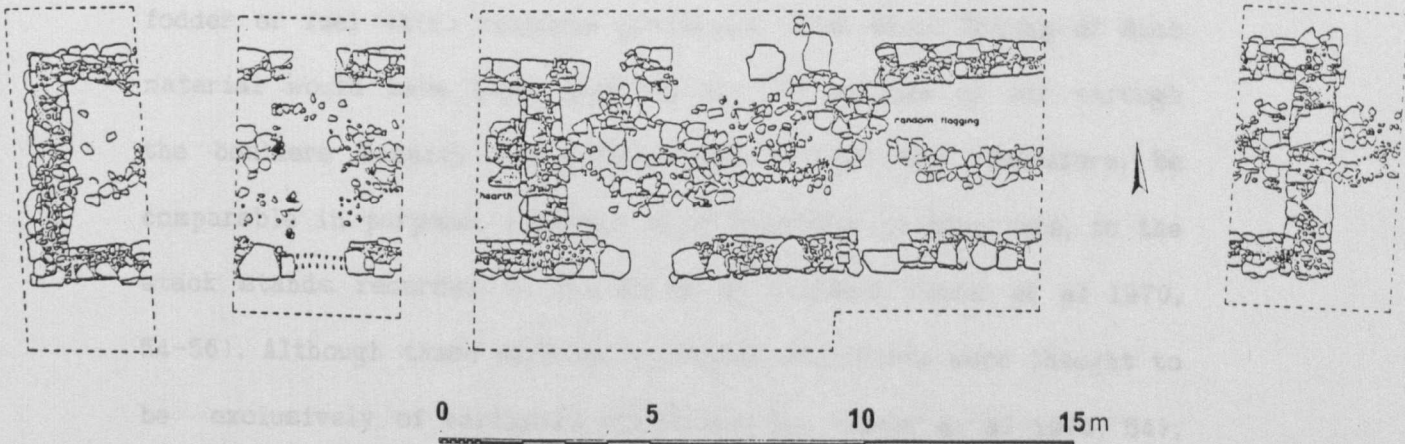


Fig. 7:12. Plans of the excavation of compartmented rectangular structures from Sandboard Knowe and Long Walls, North Tynedale (taken from Harbottle and Newman 1977, figures 7 and 9 with minor modification).

7.3.12 Characterisation of Compartmented Rectangular Buildings and Ancilliary Structures

The compartmented buildings are particularly substantial structures and it is assumed they probably included a domestic component for habitation. However, several different types of activity are likely to have taken place in the various compartments of the larger ranges. Use as workshops or dairies, storage areas for produce, fodder and fuel, or for animal housing are possible. A multiplicity of functions can be inferred from the variable shapes, sizes and construction of the compartments.

The compartments which are defined by spaced-boulders present a particular interpretative challenge. The boulders could have combined with timber or wattle uprights to enclose a compartment. Alternatively they could have been footings for a timber superstructure or platform raised off the ground for the storage of fodder or fuel which required protection from damp. Drying of such material would have been assisted by the passage of air through the boulders beneath the superstructure. They may, therefore, be comparable in purpose, although very different in structure, to the stack stands recorded in the North of England (Ramm *et al* 1970, 54-56). Although these circular embanked structures were thought to be exclusively of earthwork construction (Ramm *et al* 1970, 54), excavation of a suggested drying stand on Black Lyne Common, Bewcastle revealed a setting of large boulders projecting above a stony platform, which were thought to provide ventilation (Richardson 1979). These distinctive end-compartments can also be

compared to the stony platforms attached to Medieval and early modern buildings in north-east England which have been interpreted as rick stands (Jobey 1977, 18).

Compartments within a range may also have accommodated animals as well as humans. Such compartments need not have been roofed and would have served as pens. Even allowing for the apparently small size of cattle of the twelfth and thirteenth centuries (Armitage 1980, 406), it seems unlikely very many cattle could have been accommodated within even the larger compartments. It has also been observed in respect of the building on Penmaenmawr, Caernarvonshire, which provides the closest excavated parallel in Wales, that access through relatively narrow entrances would have been difficult for mature cattle (W. E. Griffiths 1954, 76-77). Perhaps only smaller species, pig, goat, sheep or geese, and possibly immature cattle, were housed within a range, particularly as the trend, on the basis of evidence from butchered beasts from English urban sites at least, was towards larger cattle in the later Middle Ages and early Post-Medieval period (Armitage 1980, 408-10), a time to which the structures could well date (7.3.11 above).

Much the same spectrum of activities can be suggested for the lesser ancilliary structures, as for the compartments within a range. These can only be suggestions in the absence of excavation, which combined with phosphate analysis and recovery of environmental data, offer scope for elucidating the variety of

uses to which these often complicated buildings and their ancilliary structures may have been put.

7.4 SINGLE CELL RECTANGULAR TO SUB-RECTANGULAR FOUNDATIONS AND OTHER STRUCTURES IN VALLEY LOCATIONS

7.4.1 Types of Single Cell Structure

There are a number of miscellaneous buildings, foundations and plots in valley locations in addition to the compartmented rectangular buildings with their associated features. Many of these are illustrated in *figure 7:13*, but additionally there are the following features:

- in the valley of the Clydach, a small 'L'-shaped boulder feature (site 114), and two oval boulder settings 3.3m and 6.3m across (sites 114 and 115) (fig. 3:14).
- along the valley of the Afon Ceulan, a sub-circular structure, 5m across, (site 138), and a square boulder accumulation associated with a 40m long boulder strip (site 139) (fig. 3:14).
- in the valley of the Nant Garw, a 'L'-shaped section of dry stone walling, apparently the corner of a structure which has been otherwise totally destroyed by erosion (site 624) (fig. 3:42).
- in the valley of the Afon Amman Fawr, an oval boulder-built structure, 5.8m across (site 728), and a rectangular boulder-built structure 5m long (site 729) (fig. 3:53).

- in the valley of the Afon Amman, a 3.5m long rectangular boulder-built structure (site 732); and a penannular boulder-built structure 4.5m wide (site 733) (fig. 3:53).
- on the bank of the Afon Twrch, a rectangular structure, 4m across, of drystone-build (site 813) (fig. 3:63).

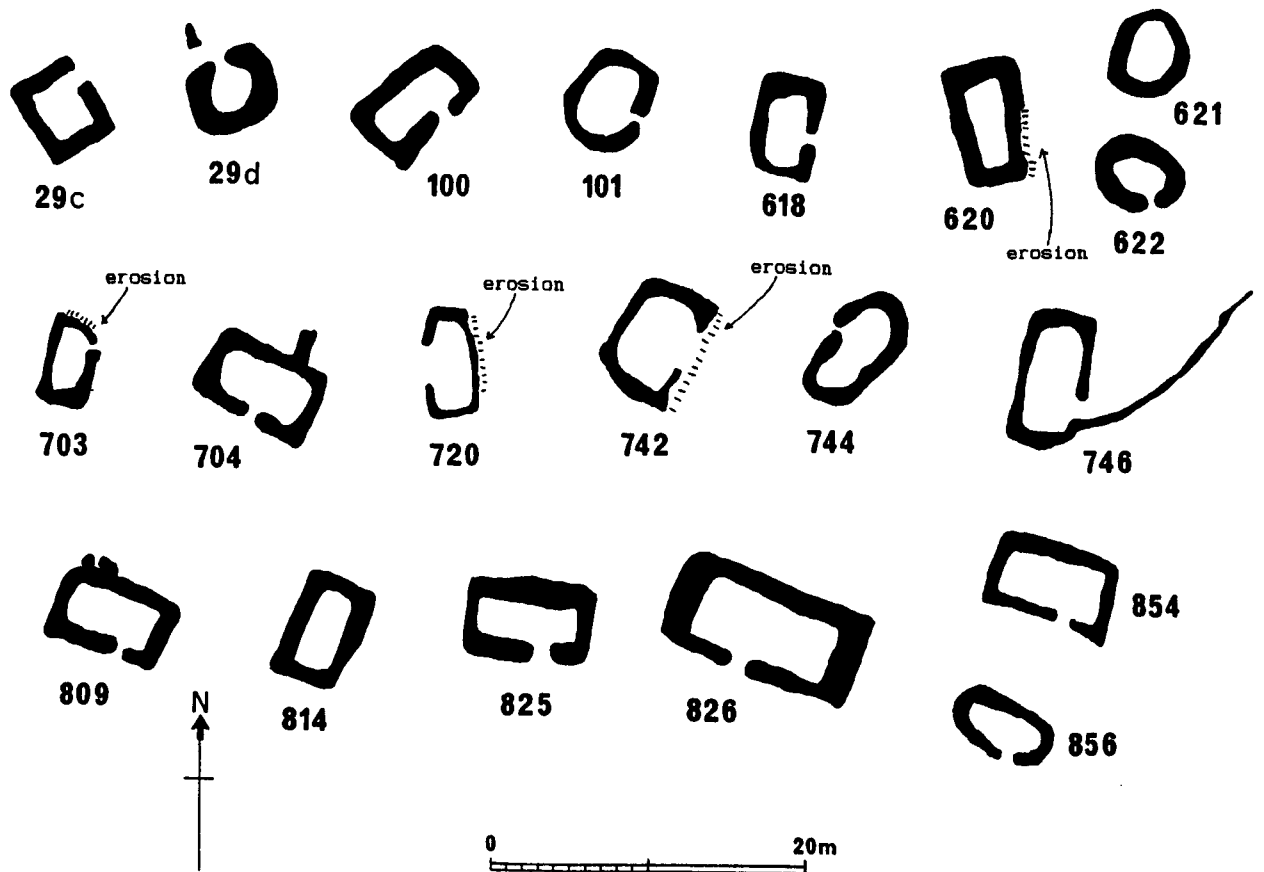


Fig. 7:13. Some single cell structures in valley locations which are not apparently linked to compartmented rectangular buildings.

The structures illustrated in *figure 7:13* show a diversity of shapes and sizes. The range of constructional techniques noted in relation to compartmented rectangular structures (7.3.6) is present. For example, both buildings 101 and 826 are at least partially constructed on platforms at right-angles to the slope.

Some of these, such as building 600 in the Nant Garw valley or buildings 703 and 704 in the valley of the Fydd, could be isolated subordinate structures, at a greater distance than usual from associated compartmented buildings (7.7.7 above). Structure 600 could relate to either compartmented buildings 615 or 619 (fig. 3:42), while structures 703 and 704 could have been associated with building 705 (fig. 3:53).

Some of the larger structures, such as rectangular foundation 620 which is 8m long by 4.6m wide, or foundation 826, 12.4m long by 6m wide, can be regarded as relatively substantial buildings in their own right, equivalent to, but less elaborate than, the compartmented buildings. Each has smaller foundations close-by which may be ancilliary structures: sites 621 and 622 associated with 620, and 825 with 826 (fig. 7:13).

Similarly, the rather less substantial sub-rectangular foundations in the valley of the Llynfell, sites 742 and 744, are very close to the still more slightly built structures, sites 743 (fig. 7:13) and 745 (fig. 3:60) respectively. An orthostatic arrangement amongst tumble in the western corner of structure 100 (fig. 3:15) may be an

internal fitting similar to that noted within compartmented building 200.

The largest, most substantial structure in the Llynfell valley, site 746, is 9m long by 5m wide with coursed stonework still standing to 1.3m high (fig. 7:13). A 15m long boulder bank, curving away from its entrance along the edge of the river bank, is an unusual feature which illustrates the problem of assessing such a diverse range of structure - it could be regarded as the wall of a plot or annexe, a protection against erosion of the river bank, or a device to channel animals into the structure.

7.4.2 Principal Single Cell Structures

Tentatively, on account of the disparate character of this grouping of structures, the twelve foundations listed in *Table 7:7* are designated "principal buildings." These are rectangular to sub-oval in form, 6m to 12m long, with a single entrance in the long side. Some can be associated with ancilliary structures of slighter build and, in one instance (site 29c), a plot cleared of stone.

The designation of the single cell structures in the valley of the Nant Llynfell as "principal buildings," equivalent in some respects to, but less elaborate than, the compartmented buildings, is perhaps supported by the absence of examples of compartmented buildings within that valley.

**Table 7:7 Single Cell Constructions Tentatively Designated
"Principal Buildings"**

<i>Building</i>	<i>Associated Structures</i>	<i>Location</i>
29c	29d and plot	Nant Oesglyn
100	-	Afon Clydach
101	-	Afon Clydach
620	621 & 622	Nant Garw
742	743	Afon Llynfell
744	745	Afon Llynfell
746	-	Afon Llynfell
809	810	Afon Twrch
814	815	Afon Twrch
826	825	Afon Twrch
854	855	Afon Twrch
856	857	Afon Twrch

7.4.3 Plots

Foundations 29c and 29d are associated with a plot of around 1500m², defined by discontinuous stone strips, on a terrace in the valley of Nant Oesglyn at 420m OD (figs. 7.13; 3:12 and 3:13).

7.4.4 Topographical Location

The location and altitudinal range is broadly the same as for the compartmented structures (7.3.9).

7.4.5 Chronology and Analogues for Single Cell Buildings

Single cell structures are commonly found in surveys of upland landscapes in Wales. They appear to occupy much the same terrain as the compartmented rectangular structures and they seem to figure in the same survey work (Crampton 1966 and 1968; RCAHM

1956, 1960, 1964 and 1982; Davis 1988 and 1989). Once again the paucity of published plans makes it difficult to make meaningful wider comparisons.

Dates have been suggested for some potentially comparable sites. The single cell building excavated at Bwlch-y-Hendre, Cardiganshire, lacked direct dating evidence but was considered on land-use considerations to have been initially occupied in the sixteenth or early seventeenth centuries, continuing to be used until the mid-eighteenth century AD (Butler 1963, 405-6) (fig. 7:3). A group of structures, originating with a single cell building, excavated in the Aber Valley, Caernarvonshire, was given a Medieval foundation date on the basis of one sherd of pottery and a tentative association with a mid-fourteenth century AD documentary reference (Butler 1962) (fig. 7:14). Additional buildings were subsequently constructed, and the complex was also used in the eighteenth and early nineteenth century. A single cell building with evidence for internal timber division excavated at Caio, near Pumpsaint, Carmarthenshire, again lacked dating evidence, but was argued to be of Roman date on account of its proximity to the alleged Roman aqueduct system feeding the gold mining complex at Pumpsaint (Hook 1970).

Within these generous proportions... comparable single cell... Denbigh House being an... building consisted...

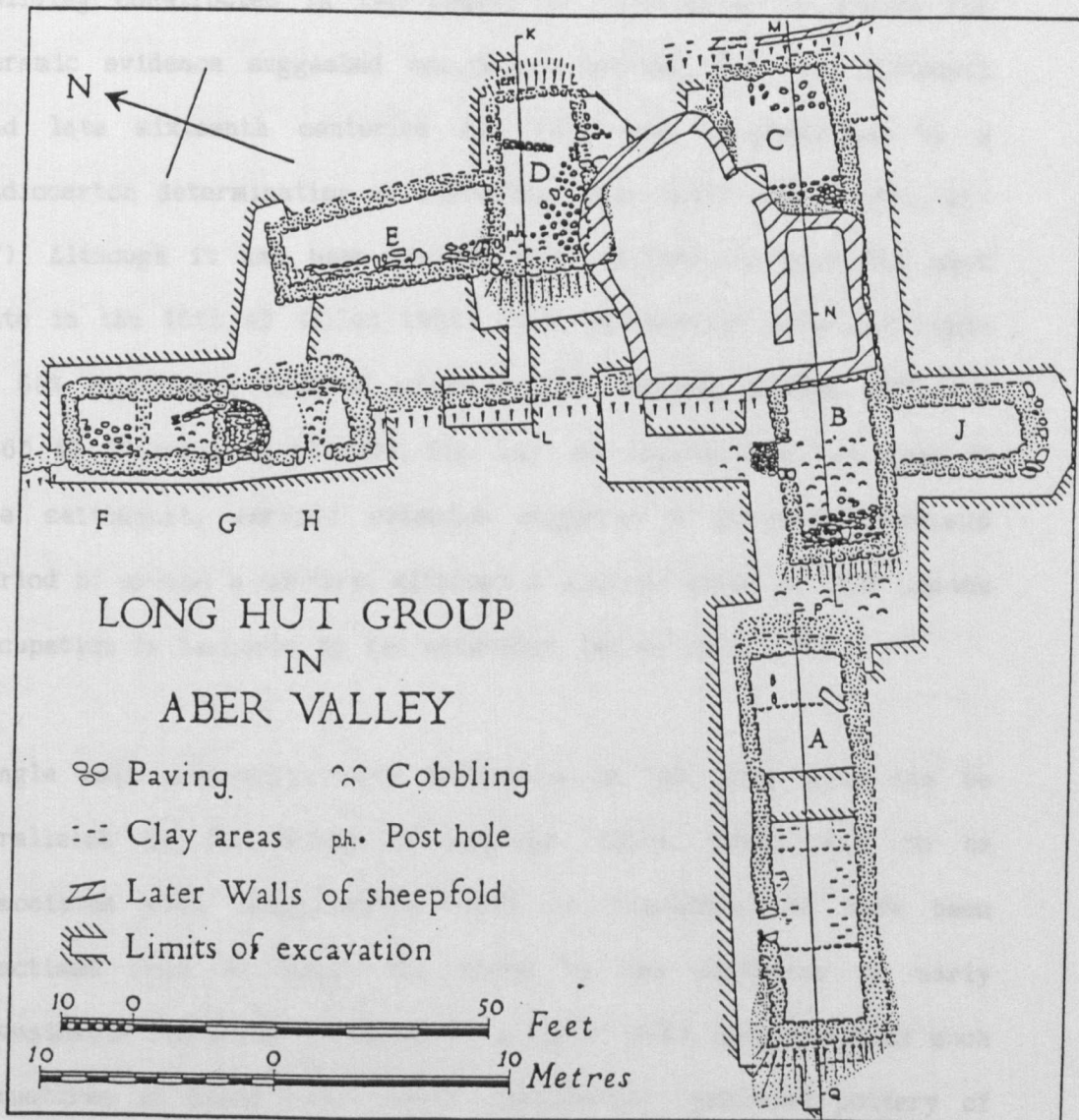


Fig. 7:14. The excavation of the Medieval and Post-Medieval structures in the Aber Valley (from Butler 1962)

Within these generous parameters, the excavations at a group of comparable single cell structures in the Brenig Valley on the Denbigh Moors bring an element of precision. One example of a building constructed in two phases is illustrated in *figure 7:3*. Ceramic evidence suggested occupation between the late fifteenth and late sixteenth centuries AD. This was complemented by a radiocarbon determination of 1620 ± 70 ad (Har-1435) (Allen 1979, 46-47). Although it has been claimed that calibration puts the mean date in the 16th AD (Allen 1993, 179), calibration at a one sigma c. 60% confidence interval gives a date between around 1470 and 1660 AD (Pearson *et al* 1986, fig. 1A). As regards the life-span of the settlement, ceramic evidence suggests a potential maximum period of around a century, although a shorter three or four season occupation is favoured by the excavator (Allen 1993, 179).

Single cell structures with entrances in the long side can be paralleled in the North of England. Again these tend to be associated with transhumance which is considered to have been practised from at least the tenth to the sixteenth or early seventeenth centuries AD (Ramm *et al* 1970, 3-4). Excavation of such structures at Black Lyne Common, Bewcastle, produced pottery of early fourteenth century form (Richardson 1979, 25-27), and at Smithy Beck, Ennerdale, pottery of mid-seventeenth to mid-eighteenth century type (Fletcher and Fell 1987, 29). The house at Black Lyne Common was of wattle, clay and probably turf construction and did not survive as a monument on the surface. It

was enclosed by a stony bank similar to site 29 within the survey area.

On the Isle of Man, small oval turf built single cell structures incorporating a wattle element and sometimes stone foundations, have been claimed as buildings associated with the exploitation of summer grazing. They appear to be 3m to 4.5m long by around 2m to 3m wide. They occur in groups alongside streams on valley floors at around 300m OD. Structures appear to have been rebuilt through time causing the creation of low mounds. There is occasional evidence for cultivation in the form of plots defined by stone clearance, and some buildings are accompanied by structures interpreted in one instance on the basis of excavation as possibly a corn-drying kiln and in another as a pen, possibly for geese. Banks in the vicinity of some structures may have facilitated animal management. A Medieval date is suggested for the structures since the practice of transhumance on the island may have disappeared by the mid-sixteenth century AD (Gelling 1962-3).

By way of conclusion, once again only a broad Medieval to early Post-Medieval dating band can be proposed for single cell rectangular to sub-rectangular foundations recorded during the survey, with hints that a later rather than earlier date is perhaps more likely.

7.4.6 Characterisation

Some of the problems of characterising these structures have already been noted (7.4.1 above). The structures identified as "principal buildings" may well represent habitations with ancilliary structures meeting some of the roles proposed for compartmented buildings (7.3.12 above). The character of these structures, their simpler forms and fewer ancilliary structures, may indicate less complex and/or less prolonged activity compared to many compartmented buildings.

7.5 CONTEMPORARY LANDSCAPE

These rectangular structures would have been built and used in a landscape that was predominantly open grassland, over soils which in some cases were being subjected to further degradation through gleying (2.4.2 and 2.5.5 above).

7.6. THE DESIGNATION OF THE STRUCTURES

7.6.1 Introduction

The buildings have been classified as neutrally as possible in relation to structural and locational characteristics. Such structures and analogous buildings have attracted various descriptions in the literature. While the importance has rightly been stressed of an interdisciplinary approach to the investigation of buildings (Meirion-Jones 1977, 344-45), the choice of a particular descriptive term often seems to reflect the perspective of the student, whether a field archaeologist initially concerned

primarily with classification (eg. RCAHM field-workers), a historian of architecture interested in placing the structure in a developmental scheme (eg Peate 1946; Meirion-Williams 1977, 371-98), or a social or economic historian or geographer concerned with use (eg. E. Davies 1980). Examples of terminology which might be applied to the buildings analysed in this chapter include, platform-house, long hut, long house, house-and-byre homestead, *hafod* and *lluest*.

However, the use of any of these terms to describe the rectangular buildings recorded may present problems. For example, terms describing diagnostic archaeological attributes have been used with inconsistency from one part of Wales to another; other terms seek to define an architectural form with a precision which is unrealistic in the context of investigation of frequently dilapidated and fragmentary remains by field survey alone; a description can imply distinctive functions for different elements of a building, again a basis of definition which is difficult to address with confidence through field survey; or they may require an assumption that the buildings are integral to particular forms of economic or social activity.

This section will discuss the difficulties presented by the application of such terms, not with a view to alighting upon the *most appropriate* description (which would probably be a fairly futile task), but in order to air issues and ideas raised by the use of these terms which will be relevant to future discussion of

the character of these buildings in relation to the use of the landscape through time.

7.6.2 "Platform Houses" and "Long Huts"

'Platform house' was originally used to describe a platform at right-angles to the contours of the slope, on which there was sometimes visible evidence for a superstructure (A. Fox 1939, 179-80). 'Long hut' was coined to describe rectangular structures during field-work for the RCAHM's *Caernarvonshire Inventories* (1956, 1960 and 1964). It was applied to all kinds of rectangular stone-built structures, whether or not they were on platforms at right-angles to the slope. In a later *Inventory*, produced for Glamorgan, the definition of 'long hut' was explicitly changed. Its use was restricted to structures which were sited parallel to the contours. 'Platform house' was reserved exclusively to describe platforms at right-angles to the contours on which buildings could be either seen or inferred (RCAHM 1982, 43-44). The platform, therefore, was considered as the diagnostic feature, not the character of any surviving superstructure.

As regards the application of these terms to the structures recorded during the survey, 'long hut' is an unfortunate description since it seems inappropriately pejorative in view of the scale of many of the buildings. Often this is comparable to that of the Medieval 'houses' excavated in village contexts in the lowland Englishry of South Wales (Robinson 1982a) (fig. 7:15),

although, of course, such comparisons can beg questions as to the division and use of space within structures.

As regards a 'platform house' designation, a potentially high percentage of all the rectangular buildings recorded are constructed on platforms at right-angles to the contours but this embraces each of the sub-categories described (7.2.1, 7.2.2, 7.3.2 and 7.4.1 above). With the exception of building platform, site 805, the most useful diagnostic feature for classification is the character of the visible superstructure, sometimes also taking account of location, ie. buildings divided into compartments and often in valleys, single cell structures with one entrance usually in valley bottom locations, and single cell structures with opposed entrances.

Certainly on the basis of the present survey it is felt the character of the superstructure should be given primacy in definition wherever identifiable, not the presence and orientation of any platform. This view dervies support from the most recent volume of the *Inventory for Glamorgan* which concedes that structures laid out across the contours need not be a different type of dwelling from those on platforms at right-angles to the contour (RCAHM 1988, 5). Therefore, neither long hut or platform-house really seems an entirely appropriate description for the large majority of rectangular buildings in the survey.

Survey Area



131



134



407



506



816



842

Lowland



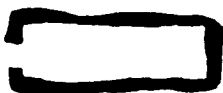
A



B



C



D



E



F

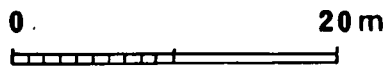


Fig. 7:15. Comparison of scale of some medium sized compartmented buildings from the survey area with examples of excavated Medieval houses from the lowland Englishry. A and B from Barry, Glamorgan; C from Llanmelin, Gwent; D from Sudbrook, Gwent; E from Merthyr Dyfan, Glamorgan; and F from Sully, Glamorgan (simplified from Robinson 1982a, figures 36 and 38).

7.6.3 Long House and House-and-Byre Homestead

'Long house' is a term which has been used to describe buildings across the British Isles, including upland regions (William 1986, 17). Perhaps unfortunately for the archaeologist, the term has acquired very specific connotations when used by historians of vernacular architecture which extend beyond those of the linear building seemingly implied by the phrase. Its use is often restricted to linear buildings which comprise one structural unit, with opposed entrances forming a cross-passage, sometimes functionally a feeding-walk, separating accommodation for people from that for animals, usually cattle. Sometimes it is used to describe buildings in which animals and people are housed under the same roof space but which have only a single entrance (Peate 1946, 56).

Well-known in terms of the vernacular architecture of the Post-Medieval period (William 1992), the long house description has been attached to various excavated buildings in the British Isles. These range in time and space from the twelfth to thirteenth century AD in Wales where the structures on platforms on Gelligaer Common, Glamorgan were called long houses (A. Fox 1937 and 1939); to the thirteenth century AD and later in Cornwall (Preston-Jones and Rose 1986, 146-148); and to the eighteenth century AD in Scotland (J. H. and M. B. Stewart 1988). As a vernacular architectural tradition the long house survives in parts of southern-central Wales to the twentieth century including the hinterland of the survey area (William 1992, 18).

Sites 202, 406 and 408 with opposed entrances could be examples of long houses in terms of the above narrow definition (fig. 7:1). Compartmented structures 116, 407 and 506 seem also to have "cross-passages" within or between compartments, possibly feeding passages echoing a functional element of the opposed entrances in the common long house form (fig. 7:5). One or two of the larger major single cell structures in valley locations, although lacking opposed entrances, seem big enough to have accommodated both humans and beasts under the same roof (fig. 7:13), perhaps with an internal timber partition similar to the structure excavated at Caio, near Pumpsaint in Carmarthenshire. It was suggested that this single cell structure was shared by humans and animals on account both of the internal timber partition and an internal drain (Hook 1970).

For present purposes this attribution begs uncertainties as to whether it was physically possible for mature cattle to gain entry into the structures described through entrances which frequently were narrow (7.3.11 above). More generally, the term has the obvious disadvantage of requiring assumptions about the internal usage of the building which are difficult to make objectively on the basis of field survey alone (Meirion-Jones 1973; Wrathmell 1989, 261-2). When narrowly defined in terms of animals and humans sharing the same living/roof space, it cannot readily be applied to the large majority of rectangular buildings surveyed, the compartmented rectangular structures, without considerable distortion. Although obviously 'long' in form, their compartmented character makes it difficult to assert any probability of animals

and human sharing the same compartment under the same roof space in the sense usually understood by 'long house.'

However, the notion of a 'long house derivative' has in fact been canvassed to take account of linear structures divided into compartments each with a separate entrance (Meirion-Jones 1977, 389-90). They have also been described in terms of the 'house-and-byre homestead' where a number of ancillary structures relating to animal husbandry are added to the domestic quarters to form a single linear range although the relationship of this building form to the structurally less complex long house is considered unclear (Smith 1975, 144-5).

7.6.4 *Hafod* and *Lluest*

Structures similar to those recorded on the Black Mountain have frequently been interpreted as dwellings occupied only in the summer pursuant to transhumance, the *hafod* or *lluest* (eg. Crampton 1966 and 1968; Allen 1979 and 1993; Butler 1988, 956). Transhumance will be considered further in *Chapters 10* and *11*, and its applicability to these buildings will be discussed at length in *Chapter 14* particularly in relation to the challenges of determining seasonality of occupation from the archaeological record (14.4.4 below). However, it is important to note that there is no clear idea as to the particular building form or forms of the *hafodydd*, and transhumance in Wales has been associated with a range of buildings types (P. Smith 1967, 772, and 1976, 142-143; Wiliam 1986, 83-84). Evidence from Post-Medieval sources certainly

suggests that seasonally occupied dwellings could vary considerably in appearance (11.6.7 below).

7.7 SUMMARY AND SEQUENCE

The diversity of rectangular building foundations identified echoes that found throughout the Welsh uplands. There are problems in applying the terminology which is commonly used in the literature to describe the structures (7.6. above). There is also difficulty in defining chronological relationships between different types in the context of poor dating evidence (Butler 1977 and 1988). This diversity, and the challenges of dating and interpretation, are inherent in the archaeology of dispersed Medieval and Post-Medieval settlement elsewhere in Britain (Austin 1989), for example, in comparable parts of the Highland Zones in Northern England (7.3.11 above) or Scotland (Mercer 1980).

Four types of building can be distinguished. There is a single example of a building platform at right-angles to the slope without evidence of a superstructure (7.2.1 above); three single cell foundations with opposed entrances (7.2.2 above); twelve single cell buildings with one entrance only in a side wall (7.4. above); and forty-eight buildings sub-divided into two or more units (7.3 above). There is small value in comparing the four building types because of the overwhelming dominance of the compartmented foundations. There is also the blurring of definition when it is recalled that many buildings are in fact constructed on platforms at right-angles to the slope (7.6.2 above). However, ancilliary

structures, plots and paddocks seem to have been associated only with compartmented buildings and single cell structures with one entrance only.

On analogy with excavated examples, mostly in the North of England, the compartmented buildings may belong to the later Middle Ages or early Post-Medieval period (7.3.11). However, the possibility of an earlier origin cannot be excluded, particularly since many are constructed on platforms at right-angles to the slope, a feature which has a long chronology from the twelfth through to the fifteenth and sixteenth centuries (7.2.4 above). Single cell structures in valley locations also have a potentially longer chronology extending either side of the later Middle Ages (7.4.5 above) although it can be argued that locally a degree of contemporaneity with the compartmented buildings is suggested by similarities in siting.

It is entirely possible, however, that there is a chronological progression within the range of Medieval to early Post-Medieval settlement forms in the survey area which some would be prepared to tie into an architectural sequence. This may extend from the potentially early single cell buildings with opposed entrances, perhaps a simple 'long house', through compartmented forms displaying a potential 'cross-passage/feeding-passage' element, to the buildings comprising the most substantial ranges of compartments, perhaps analagous to house-and-byre farmsteads, at the end of the sequence.

A version of this suggested structural sequence is provided in *figure 7:16*. The tentative nature of this scheme should not need emphasising in the context of the paucity of dating evidence and the difficulties of using very specific descriptive terms. A sequence of this sort does not preclude earlier forms continuing to be built, extended and otherwise modified through to the ultimate abandonment of settlement within the area. Buildings on platforms at right-angles to the contours, which are relatively well-researched in the Welsh uplands, certainly seem to be a long-lived form (7.2.4). Such longevity indicates that the distribution of Medieval to early Post-Medieval settlement within the survey area could be the product of something more than a single episode although the intensity and character of the activity may well have varied through time.

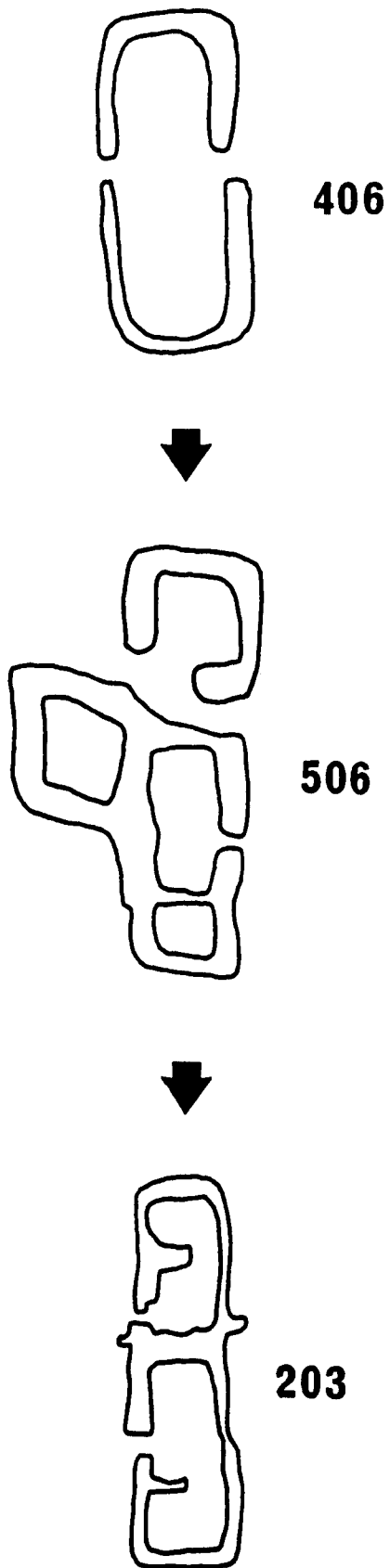


Fig. 7:16. A possible developmental sequence for the rectangular buildings of broadly Medieval to early Post-Medieval date.

CHAPTER 8: ANALYSIS OF
MISCELLANEOUS SITES

8.1 THE BURNT MOUND

One possible example of a mound of burnt stone has been identified, site 140 (fig. 3:14). Radiocarbon dates from burnt mounds in west Wales fall mostly within the second millennium bc but third millennium bc and eighth century ad determinations are also known (G. Williams 1985a; James 1986, 259-60; Caseldine and Murphy 1989). Various industrial, ritual and social uses have been suggested for these features (James 1986, 248) although the traditional explanation of 'cooking mound' continues to be favoured (Ó Drisceoil 1988). This category of site is remarkable within the survey area for its virtual absence, apart from this one example, given the large numbers of 'burnt mounds' recorded in south-west Wales. For example, around a dozen examples were recorded within a much smaller survey area on Cefn Bryn, Gower (Appendix 4).

8.2 STONE STRUCTURES ASSOCIATED WITH THE QUARRY SCOOPS AND LIMEKILNS IN THE TWRCH VALLEY

Two small structures, sites 845 and 849, in the Twrch valley are unusual in that both have a fireplace set into the end-wall. Sites 846 and 847 are built on a similar scale. Sites 845, 846 and 847 are of drystone build and are within the belt of quarry scoops (fig. 3:63). Structure 849 has carbonised material packed between the stones. It is adjacent to compartmented building 848 which has been altered by the insertion of simple limekilns (fig. 3:75). The limekilns seem to be examples of intermittent or "field" kilns perhaps built to meet local agricultural requirements rather than

industrial-scale production. An origin in the sixteenth century has been suggested for these kilns (R. Williams 1989, 12).

It is suggested that structures 845, 846, 847 and 849 relate to the quarrying of limestone, and perhaps extraction of mudstone, along this limestone belt, and that they are later than the compartmented structure, with an essentially early modern date. Hence, they probably fall outside the chronological scope of this survey. They may, however, predate nineteenth-century industrialisation in the vicinity of the Twrch. This included lime preparation and coal mining lower down the valley, and silica and lime extraction on slopes to the west (Strahan *et al* 1907). Some overlap between later Medieval activity, represented in particular by the compartmented rectangular buildings, and limestone quarrying cannot be ruled out. However, both the secondary nature of the limekilns at compartmented building 848, and the spoil from a simple limekiln which overlies part of compartmented building 12 on Pant Nant-fforchog at the edge of an extensive area of lime workings (fig. 3:10), hint at a later date for lime preparation adjacent to these sites. Perhaps this took place in the eighteenth century coinciding with massively increased agricultural demand for the product (R. Williams 1989, 7). Certainly by the early nineteenth century, the western end of the Black Mountain was remarkable on account of the scale of lime production (T. Rees 1815, 274-5).

CHAPTER 9: SYNTHESIS OF
THE ANALYSES OF THE
ARCHAEOLOGICAL DATA

9.1 INTRODUCTION

This chapter draws together aspects of the preceding analyses in preparation for discussion of the general theme of land-use in the survey area in *Chapters 12, 13 and 14*. A chronological sequence for the monuments is suggested; the characterisations and associations of the various structures are summarised; and the location of the different types of monument is discussed on a comparative basis, in relation to relief, contemporary landscapes, and the present-day soils.

9.2 SUMMARY OF THE SUGGESTED CHRONOLOGY FOR THE MONUMENTS

The chronology suggested for the structures recorded is summarized in *Table 9:1*. The tentative character of much of the scheme hardly needs further emphasis. Three broad but discrete epochs of activity which produced the monuments can be identified:-

- i) monumental cairn construction in the second millennium bc (5.2.5 above).

- ii) evidence for habitation in the form of annular to sub-annular foundations and enclosures. These may focus on the later prehistoric to proto-historic period, 500bc to 500AD, but could extend several centuries either side of these dates (6.2.5 and 6.3.4 above).

- iii) a phase represented by several types of rectangular foundation, apparently Medieval to early Post-Medieval in date,

perhaps from as early as the eleventh and twelfth centuries AD to the sixteenth or seventeenth centuries AD, but possibly with a focus towards the end of the Middle Ages and in the early Post-Medieval period (7.7 above).

Paralleling the evidence for settlement is that for agriculture in the form of stone banks, stone piles, and stony strips which, variously, partition the landscape, enclose fields, and, most frequently, indicate unenclosed plots cleared of stone. On the basis of the associations discussed below (9.3), these features could clearly represent activity over two to three millennia, possibly starting as early as the end of the second millennium bc. They, too, perhaps focus in the period 500bc to 500 AD, and extend, but probably only to a limited degree, into the Middle Ages.

It is important to remember that the visible structures will by no means represent the totality of human activity. For example, the environmental record indicates modification of the post-glacial woodland. This is at least partly a result of human activity prior to the construction of the monumental cairns, the earliest surviving structures, in the second millennium bc. Human influence is detectable in the pollen record by around 4000bc and possibly in the preceding millennium (2.5.4 above). The character of this will be discussed in *Chapter 12*. It has been suggested that stone clearance for agricultural improvement only becomes necessary after an initial phase of agricultural activity which results in soil erosion and the exposure of stone (Limbrey 1975, 165). This argues

for the still earlier practice of agriculture than that inferred from the stone clearance features. There is also the possibility of another potential gap in the record represented by the monuments in the centuries after 400/500 AD. Interpretation of land-use will need to take account of the periods for which there appears to be little or no archaeological evidence as well as those periods for which the record is more obvious in terms of surviving monuments.

Table 9:1 A Summary of the Chronology Proposed for Structures Recorded During the Field Survey

Key: ----- possible dating range ***** most likely dating range

	2000bc	1000	-	1000	1500AD
Monumental Cairns	--*****-----				
Clearance Features	-----*****-----****				
Linear Banks	*****-----				
Enclosed Fields	-----*****				
Smaller mostly Annular Foundations	-----*****				
Annular Enclosures	-----*****----				
Compartmented Foundations	---*****				
Single Cell Rectangular Foundation	---*****				
'Platform House-type'	*****				

9.3 SUMMARY OF CHARACTERISATION AND ASSOCIATIONS

The monumental cairns are almost certainly sepulchral monuments. Many of the annular to sub-annular foundations are likely to be the foundations of houses or shelters for humans although, as has been noted, they may have served other functions connected with agriculture, craft or industry. The annular to sub-annular foundations can be termed homesteads, an actual or putative house associated with a yard or compound.

The possibility of timber structures modifying the distribution or categorisation of house circles and homesteads has been canvassed (6.2.4 and 6.3.4 above). However, it should be noted that particular regard was had during the survey to the identification of unenclosed platform structures. In northern England and parts of Scotland, circular to oval platforms have been found to carry circular timber buildings dating broadly from the later second millennium to first millennium bc. Often congregating in groups, they have considerably increased perceptions of the extent of upland occupation at this period (Jobey 1980). None was seen.

Most of the rectangular to sub-rectangular foundations are probably houses too, although, as noted, both people and animals might be accommodated under the same roof space, or discrete parts of a range used for various purposes other than providing shelter for humans (7.6 above). Subsidiary structures around these houses presumably met various needs ancillary to agricultural and craft activities.

There is obviously an element of uncertainty in discussing associations between buildings and evidence for agricultural activity in the form of stone banks and stony heaps and strips on the basis of general notions of comparable location and proximity. Further, as already noted, timber structures could alter patterns of distribution. However, most although not all of the evidence for stone collection, enclosure and a partitioned landscape appears to be associated with the house circles and enclosed homesteads of presumed later prehistoric and proto-historic date rather than with the foundations of Medieval or later date (Tables 6:1 and 6:3 cf. Tables 7:5 and 7:7).

It is unfortunate that there is no indication of the detailed chronological relationships between monuments within the two broad categories of site in which variants are likely to be at least partially contemporaneous, the house circles and the enclosed homesteads, and the various forms of rectangular building. This detail is likely to be very relevant to the dynamics and character of land-use and social organization.

9.4 LOCATION IN RELATION TO RELIEF

The general three-fold chronological division for the visible monuments summarised in 9.2 above can be paralleled in terms of differences in their topographical location (fig. 9:1).

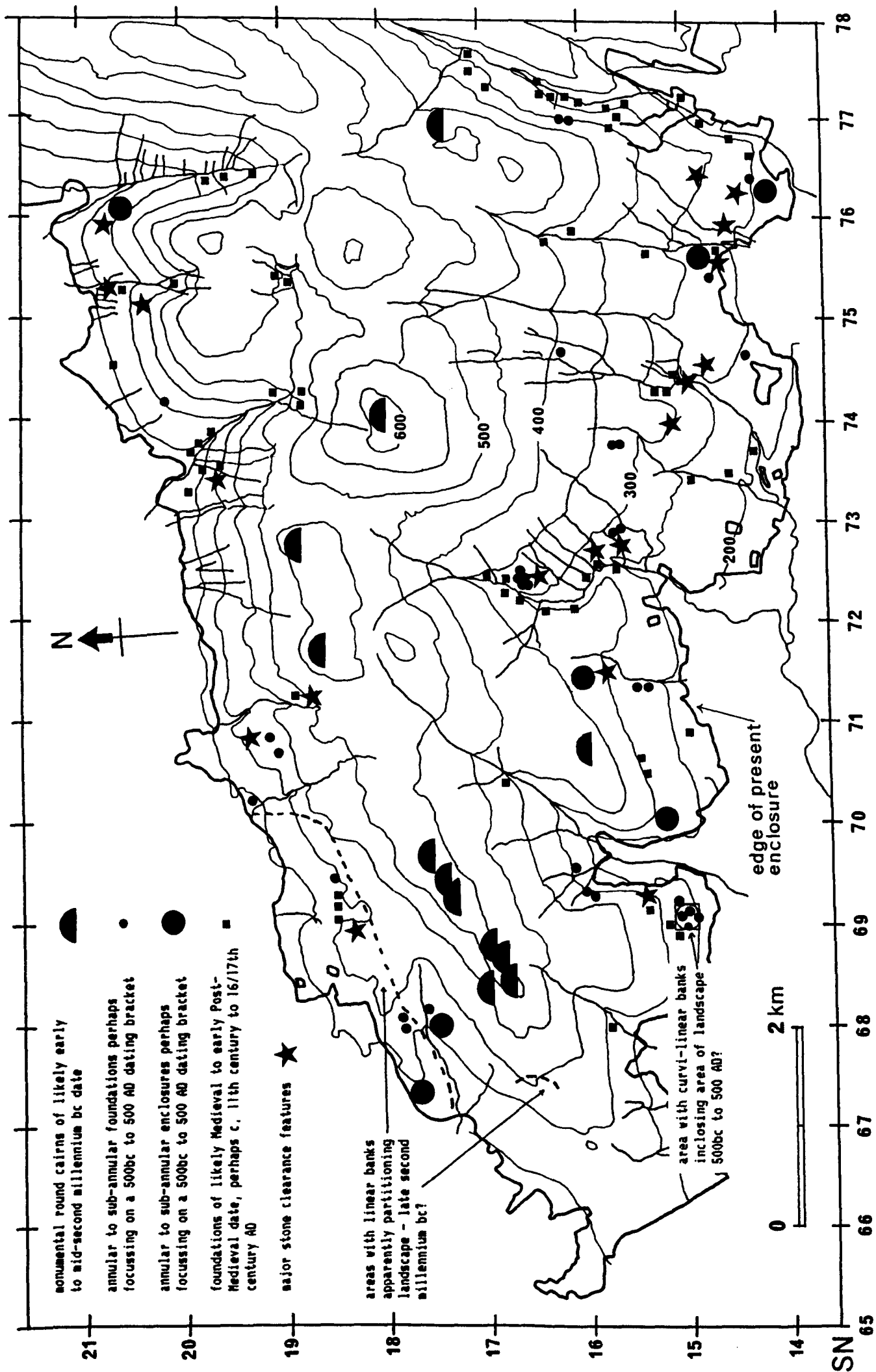


Fig. 9.1. Distribution of monuments according to putative chronology.

The monumental cairns are on ridge tops and tend towards the highest altitudes, away from any house foundations. The house circles are situated on open slopes between 240m and 420m OD, the large majority between 240m and 340m OD (figs. 9:1 and 9:2). The smaller house circles, however, tend to be at higher altitude, around 400m OD (6.2.3 above). The location of the enclosed homesteads also falls within these parameters (fig. 9:1). The large majority of the rectangular buildings is in valley-floor or valley-side positions, markedly different to the open aspects occupied by the house circles and enclosed homesteads (fig. 9:1). While the altitudinal distributions of the rectangular buildings and house circles and enclosed homesteads overlap, the upper limit of the altitudinal range of the rectangular buildings is rather higher towards 500m OD (fig. 9:2).

Most of the clearance features and the partitioned areas of the landscape fall within a 220m to 380m altitudinal range, generally paralleling the range for the foundations, particularly the house circles and enclosed homesteads (fig. 9:2) - 85% of clearance features are in the 240m to 360m OD band (5.3.5 above). Only a little clearance activity is recorded in excess of 400m OD, in one case obviously associated with a structure of likely Medieval or early Post-Medieval date, site 29.

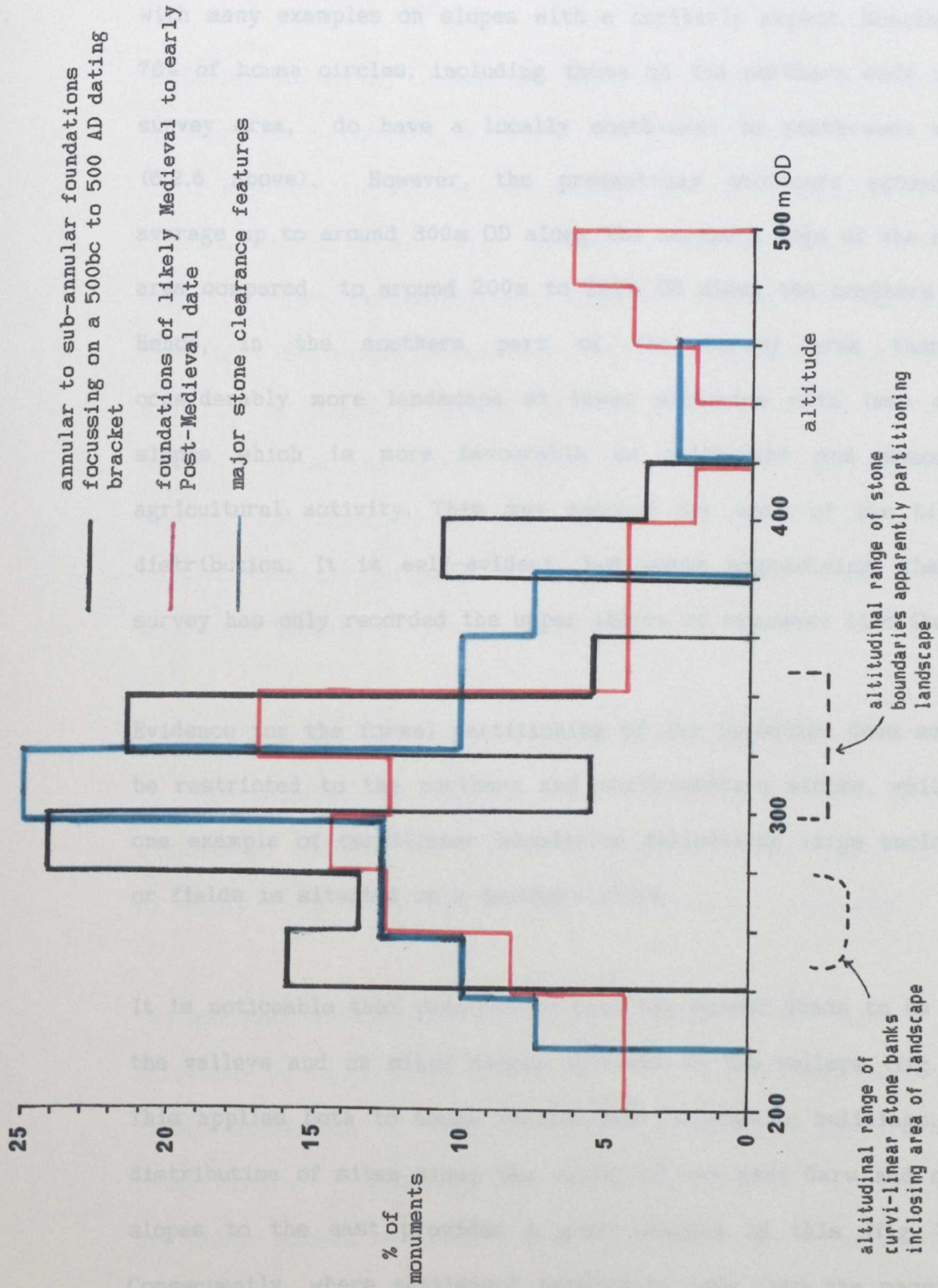


Fig. 9:2 Comparison of altitudinal ranges of various categories of monuments.

While there appears to be some preference for house foundations of all types, and also the clearance features, to be situated on the southern slopes (fig. 9:1), this is not a dominant characteristic with many examples on slopes with a northerly aspect. Nonetheless, 78% of house circles, including those on the northern side of the survey area, do have a locally south-east to south-west aspect (6.2.6 above). However, the present-day enclosure extends on average up to around 300m OD along the northern edge of the survey area compared to around 200m to 220m OD along the southern edge. Hence, in the southern part of the survey area there is considerably more landscape at lower altitudes with less severe slopes which is more favourable to settlement and associated agricultural activity. This may account for some of the bias in distribution. It is self-evident, but worth emphasising, that the survey has only recorded the upper limits of monument distribution.

Evidence for the formal partitioning of the landscape does seem to be restricted to the northern and north-western slopes, while the one example of curvilinear boundaries delineating large enclosures or fields is situated on a southern slope.

It is noticeable that penetration into the massif tends to be along the valleys and on minor slopes adjacent to the valleys (fig. 9:1). This applies both to house circles and rectangular buildings. The distribution of sites along the valley of the Nant Garw and on the slopes to the east provides a good example of this (fig. 3:42). Consequently, where settlement penetrates deep into the massif, it

has a relatively lower altitude on account of its situation on slopes within and around valleys and valley heads. The main slopes of the massif tend to be avoided particularly at altitude.

Altitude, therefore, seems an important factor in the choice of location for settlement. A likely reason for this is the additional local exposure to weather for houses and any associated plots or paddocks which comes with increasing altitude (2.2.4 and 2.2.5 above). Where settlement does occur at altitude, in the form of some of the compartmented buildings, for example sites 209, 212 and 215 on Blaen y Cylchau at just under 500m OD, it is well protected from the direct impact of weather by surrounding high ground. The location of many compartmented buildings within valleys probably reflects a considerable concern for shelter as much as a need to be adjacent to water.

9.5 LOCATION AND THE CONTEMPORARY LANDSCAPES

It is possible to mirror the chronological and locational differences between the different categories of monument in terms of likely distinctions between the contemporary landscapes.

The earliest monuments, the monumental round cairns, were built at altitudes at which there had always been thinner woodland. By the second millennium bc, these areas were largely open and affected by podzolisation of soils and peat formation. This is in contrast to the lower slopes on which there had been only relatively minor woodland clearance (2.5.4 *Phase 3* above).

The chronology of the pre- and proto-historic house circles and enclosed homesteads appears to match a phase in which woodland on the lower slopes declines over several centuries (2.5.4 *Phases 4 and 5 above*). Most of the stone clearance for agricultural improvement, which in large measure is associated with the house circles and enclosed homesteads (9.3 above), probably relates to this prolonged episode of woodland decline, as does the partitioning of the landscape at the north-western edge of the survey area.

The rectangular structures of Medieval to early Post-Medieval attribution correspond to a period during which the slopes are essentially grassland and virtually devoid of trees (2.5.4 *Phase 6 above*).

The impact of climatic change on environment and land-use will be discussed in *Chapters 12, 13 and 14*.

9.6 MONUMENTS AND SOILS WITHIN THE SURVEY AREA

Soils contain information on past environments, their economic potential, and its realisation through human intervention (Limbrej 1975, 233-235). It has been argued that present-day soils contain clues to past land-use despite pedological change through time in response to various climatological and biological changes as well as human intervention (Webley 1978, 18-23).

Studies of the distribution of archaeological monuments in relation to soils in parts of South Wales has led to the conclusion that considerable human choice was being exercised as regards the siting of structures in relation to soils (Crampton and Webley 1960 and 1963). Drainage is seen as a particularly important factor. For example, second millennium bc round cairns in Glamorgan are located on permeable and semi-permeable soils, as are clusters of clearance heaps (RCAHM 1976a, 46 and 107). Enclosed settlement of assumed first millennium bc date is on freely drained soils while unenclosed house groups are on semi-permeable or even impervious soils (RCAHM 1976b, 10 and fig. 1).

On Cefn Bryn, Gower, West Glamorgan, the location of stone clearance heaps has been studied in detail (Appendix 4). It was found that the clearance heaps clustered on the better drained brown earths and ferric podzols which today are considered to have the greatest agricultural potential. The poorly drained gleyed soils appear to have been very deliberately avoided, the groups of stone clearance features occupying islands of better drained soils surrounded by impervious soils. On Mynydd Llangyndeyrn, south-east Dyfed, the linear walling, partitioning the landscape, was located on wetter humo-ferric podzols over Millstone Grit and appeared not to extend on to adjacent better drained brown earths over limestone (Appendix 2). The sensitive location of different forms of settlement and agricultural activity according to soil types has been noted elsewhere, for example in North Wales (Grimes 1945; Johnson 1980-82) and in the West Yorkshire Dales (Fleming 1976).

In view of the often marked correlation between soil types and monuments form, presumably implying differential land-use according to soil conditions, it is at first sight surprising that no obvious association between soil-type and monument type is evident within the survey area apart from the location of monumental round cairns exclusively on humo-ferric podzols (fig. 5:9). When all other monuments are plotted against soil-types (fig. 9:3), it is evident that the various types of structure are distributed across the range of present-day soils without apparent preference. Sites of all types are present on the two dominant soils, the cambic stagnohumic gleys and the humo-ferric podzols which seem equally unattractive according to present-day land-use criteria. The humo-ferric podzols at altitude, say above 350m to 400m OD, show activity only at the margins. However, this seems to be a reflection of altitude rather than soil-type since there is activity apparent at 300m OD or lower on the pockets of humo-ferric podzols present along the southern edge of the survey area on Drysgol, on Foel Deg and Twyn y Moch.

An understanding of the distribution of monuments in relation to soils within the survey area can be approached in two ways, taking account of changes in the character of the soils through time, and the likelihood of local variability in present-day soil conditions not accounted for in mapping.

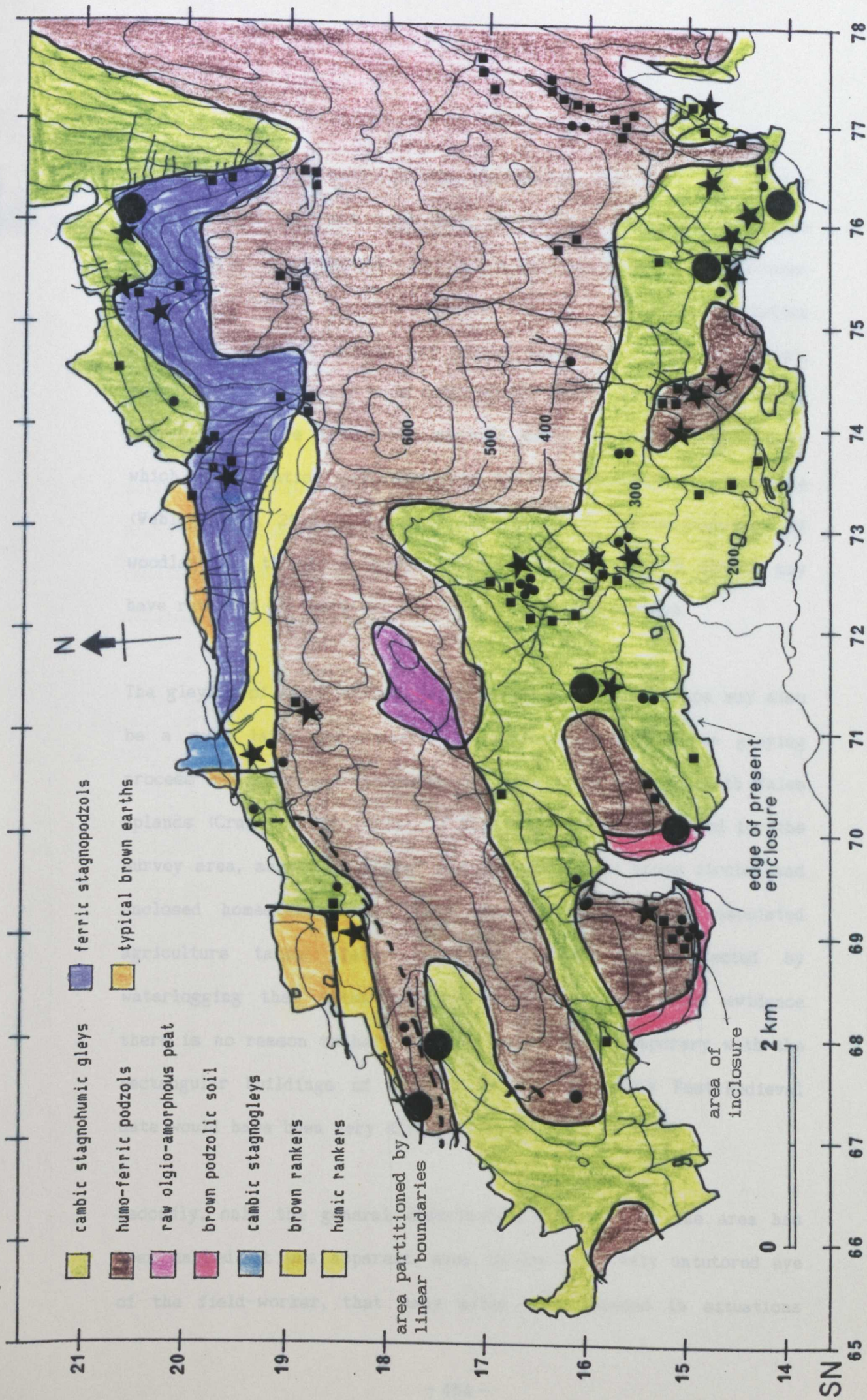


Fig. 9:3. Distribution of settlement monuments on soil types. ● enclosed homestead; ● house circle; ★ evidence for stone clearance; ■ rectangular building/foundation.

Firstly, soils are not a static phenomenon and their present-day disadvantages may not have been as extreme when the monuments were created. For example, although a relatively early date between 4000bc and 3000bc has been recorded for the onset of podzolisation at higher altitude within the survey area (2.5.4 Phase 2 above), podzolisation may well have occurred at much later dates on lower slopes with more favourable aspects (2.4.2 above). The extent to which podzolisation was influenced by human activity is debatable (Webley 1978, 26-27). However, the relatively late clearance of woodland on the lower slopes (2.5.4 Phases 4 and 5 above) may have retarded or inhibited the inception of the process.

The gleying of soils across major tracts of the landscape may also be a much later development. An historic date for the gleying process has even been proposed for some areas of the South Wales uplands (Crampton 1965, 224). If this suggestion holds good for the survey area, many of the pre- and proto-historic house circles and enclosed homesteads could have been built, and any associated agriculture taken place, on soils rather less affected by waterlogging than those of today. However, on present evidence there is no reason to believe that the soils contemporary with the rectangular buildings of broadly Medieval to early Post-Medieval date would have been very different from those of today.

Secondly, only the general distribution of soils in the area has been mapped. It was apparent, even to the relatively untutored eye of the field-worker, that many sites were located in situations

with locally much more favourable conditions. Drier conditions underfoot and better vegetation often indicated patches of relatively more freely drained soils. A good example is plot 639 defined by stony bands and stone heaps, associated with two annular foundations, sites 641 and 640 (fig. 3:52), on the slopes east of the Nant Garw. As on Cefn Bryn (Appendix 4) particular advantage seems to have been taken of islands of more favourable soils. This emphasises the importance of recognizing adaptation to micro-environmental conditions (2.3.2 above) in areas where macro conditions are, and most likely always have been, relatively unfavourable for agricultural activity.

CHAPTER 10: ASPECTS OF
LAND-USE IN THE UPLANDS
AND THE PRACTICE OF
TRANSHUMANANCE

10.1 INTRODUCTION

The purpose of this chapter is to introduce various ideas which will help inform discussion of land-use in the survey area and the Welsh uplands generally in succeeding chapters. These include aspects of the way in which upland environments are exploited for subsistence, particularly in terms of seasonality or mobility, either by hunting and gathering communities or agro-pastoralists, and the challenges posed to archaeologists by such forms of land-use.

10.2 SOME CHARACTERISTICS OF UPLAND LAND-USE

10.2.1 Subsistence: Environment, Seasonality and Predictability

Almost all natural environments are seasonal in character, particularly those away from equatorial zones. Hence the nature, quantity and quality of food will vary with the annual cycle of the seasons to which humankind adapts (Harrison 1988, 26-27). Additionally, communities that expect to be self-sufficient may plan their exploitation of the environment over a timescale which extends beyond the annual cycle, anticipating on a balance of probabilities some exceptional disruption of food supplies through disease, extremes of weather or other natural disaster, or economic disruption through plague, warfare or other social upheavals (Colson 1979).

The interplay of the various components comprising the environment sets basic parameters for subsistence activity in upland areas

(Brush 1976, 127). Such interaction produces parameters which are, of course, dynamic, not static through time (Chapter 2 above), and it includes interaction between the environment and humankind as humans adapt to the environment.

As a simple principle, altitude will affect the character of the climate which in turn affects soil, vegetation and animal life. In Wales, as noted in Chapter 2, altitudinal influence is the major determinant of climatic conditions, increasing precipitation and decreasing temperature combining to shorten the length of the growing season, a particularly important constraint on the use of the landscape. Altitude will therefore accentuate the effects of seasonality on the subsistence resource of an area. Often this occurs along a short but steep altitudinal gradient (Sumner 1977, 43 and 55-59 and 2.2.4 above).

Further, upland climates often have more unstable climatic patterns and there is an additional risk to subsistence posed by this unpredictability which needs to be taken into account in planning for the future (Huss-Ashmore and Thomas 1988, 453-2).

10.2.2 Decision-Making in Relation to Adaptations to Seasonality and Unpredictability of Food Supply

There is the capacity for the exercise of human choice and judgement when adapting to fluctuating food supplies, within the tolerances of environment and within the constraints of contemporary technology (Eyre and Jones 1966, 13-18; J. A. Talyor

1980b, 313). Judgement can be unsound and human responses to the environment will from time to time occasion changes which can be maladaptive, resulting in environmental degradation to which the relatively fragile highland zone is particularly susceptible. Such maladaptive changes may be of only short term benefit to the community and in turn generate further adaptations (Huss-Ashmore and Thomas 1988, 452 and 456-8).

Decision-making in relation to environmental circumstances can take account of social and cultural as well as economic requirements (Huss-Ashmore and Thomas 1988, 462). For example, tradition may inhibit appropriate responses to novel conditions. Innovation may be seen as introducing an unacceptable level of risk in unpredictable environments (Colson 1979, 24). The significance of traditional farming practice in agricultural decision-making in the uplands is well illustrated in a recent survey of farmers just to the south of the survey area for whom it ranked far higher compared to those who farmed on the environmentally more uniform and secure Gower Peninsula (Henderson and Ilbery 1974).

Unfortunately, such cognitive inputs are not directly accessible for the prehistoric past, remote from the studies of anthropologists, geographers and historians. Hence, perceptions of the importance of social and cultural factors compared to economic factors may differ according to the chronological perspective of the enquiry. It has been argued by some that the social and cultural factors influencing decision-making are largely short term determinants

and are, in any event, frequently beyond the capacity of archaeology operating in isolation to detect. However, on the long time scale employed by the archaeologist, it is possible to chart trends in economic change, and it has been suggested that, on this longer time scale, economic practices and change will be seen to determine social behaviour (Jarman *et al* 1982, 4-6). There are, however, many views in archaeology on the relationship between subsistence and cultural and social organization, which is now recognized as being affected by a complex matrix of variables (Gamble 1978; Orme 1981, 54-5; Binford 1991, 367).

10.2.3 Adaptations to Seasonally Available or Unpredictable Resources

Given the necessary imperative, in which population pressure may be one if not the only important factor, intensification of human-land relationships can lead to the exploitation of the full range of inhabitable and viable economic niches across the range of environmental zones (Jarman *et al* 1982, 6-12; Fleming 1990, 11). Those living in or around upland landscapes will be presented with just such a series of zones.

The resources of the zones will change qualitatively and quantitatively with altitude and with season (10.2.1 above). An upland zone with a continental climate will rarely support sufficient resources to permit subsistence specialisation in that zone alone. Hence, subsistence-based communities will need to spread their activities into several zones to respond to both the

seasonal and the more unpredictable fluctuations in food supply (Colson 1979, 22-3; Higgs 1979, 159).

Social and economic mobility may be required if it becomes necessary to exploit the resources of more than one environmental zone within a seasonal cycle (Jarman 1972, 708-9; Jarman *et al* 1982, 41-6). The degree of mobility is enhanced if the environments are of relatively low productivity (Butzer 1982, 241), as is often the case with the uplands.

There may also be the requirement for a physiological response in terms of acclimatisation to altitude and climatic fluctuation (Harrison 1988, 26). Additionally there can be a physiological response to the periodic availability of food, for example through fat accumulation (Huss-Ashmore and Thomas 1988, 468).

Storage and redistribution are other mechanisms for adapting both to seasonal and more unpredictable fluctuations in food supply as is the establishment of networks of contact beyond the uplands in regions with different environments which may be able to assist in lean periods (Testart 1988; Huss-Ashmore and Thomas 1988, 454-5 and 460-1; Colson 1979, 21). The food storage adaptation, however, is dependent on the availability of food suitable for storage, together with the necessary technology linked to environmental conditions (Keeley 1988, 402-3).

10.2.4 Mobility and Hunting and Gathering Groups

The literature on hunters and gatherers, and the relationship between their economy, environment and social and cultural organization is huge, and the approaches adopted diverse. For present purposes, the discussion of the articulation of environment, resources and human population provided by Christopher Smith (1992a, 12-21) is both convenient and sufficient. Population level is controlled by the productivity of the environment which reflects a range of topographical and climatological factors. Hunter-gatherers tend to have an optimum population level well below the maximum theoretical carrying capacity of the land to minimize the risk of shortages through temporary fluctuations in supply. Hunting and gathering groups look for optimum returns in relation to energy expended in search of food. However, calculation of the optimum return can take account of social and cultural benefits in addition to the energy value of the food.

Mobility is often taken as the norm in the economies of hunting and gathering peoples within seasonally travelled territories in order to take full advantage of the landscape's productivity (Lee and De Vore 1968, 11-12; Orme 1981, 104). Such territories can, of course, include upland landscapes (Higgs 1979, 159-63). Importantly for present purposes, the diversity of ecological zones, and hence resources, within an essentially upland region would have been particularly advantageous and attractive to hunter-gatherers since they could be exploited by relatively short movements on account of sharp altitudinal gradients (D. Clarke 1978, 25).

The character of the environment, and consequential resource base, will influence the practice of mobility as an adaptive strategy amongst hunter-gatherers. In stable environmental conditions, resources tend to be diverse, evenly distributed and predictable. This encourages a tendency to sedentary behaviour. In poor, fluctuating environments, such as temperate uplands, resources will be spatially and temporally widely variable which promotes group mobility (Gamble 1977, 154-8). It has been pointed out that environments are rarely completely polarised. Consequently, hunter-gatherers will have phases of both sedentary and mobile activity in their annual cycle, although environmental conditions can encourage a bias towards one form of behaviour or the other (C. Smith 1992a, 17).

A distinction in terms of social organization in relation to environment and resources has been proposed between 'simple' and 'complex' hunter-gatherers based on ethnographic study (Keeley 1988, 404-5). 'Simple' groups tend to live in areas of fluctuating climate; they are relatively mobile, and have a low population density reflecting the carrying capacity of the environment. 'Complex' hunter-gatherers tend to be more sedentary; their relatively stable environment supports higher population levels; they rely on aquatic or plant resources with high rates of reproduction rather than hunting terrestrial animals, and they practise the storage of food. There are differences in the social organization and practices of the two groups. 'Simple' groups are egalitarian, 'complex' groups tend to be stratified on the basis of

wealth and descent. 'Complex' groups may have a medium of exchange and are inclined towards craft specialisation (Keeley 1991, 179-83). A high correlation between population pressure and socio-economic complexity is claimed (Keeley 1988).

As has been noted, there is likely to have been little opportunity for economic specialisation amongst hunter-gather groups in the more unpredictable upland environments in temperate climates where seasonal extremes in any event required mobility (10.2.3 above).

10.2.5 Aspects of the Exploitation of the Uplands by Agro-pastoralists

Work by geographers and anthropologists has emphasised that, at a general level, there is a convergence of approach to the exploitation of landscapes at altitude by widely disparate contemporary peoples in the face of uncertainties in food supply (Brush 1976, 125; Huss-Ashmore and Thomas 1988, 452). In particular, populations in higher altitude landscapes are likely to have a mixed agro-pastoral economy taking advantage of more than one environmental niche.

The challenges of viable cultivation in upland zones in temperate climates are well recognized. Yields, the length of the growing season and the warmth which is important for ripening, become more variable with elevation. The uncertainty inherent in such variability compounds the risks of farming in marginal conditions which rarely allow the production of a surplus as insurance against

bad times. Further, cultivation in marginal conditions is likely to be far less tolerant of environmental change (Parry 1978, 73-4). Adaptations can include the adoption of a crop which is particularly well suited to local conditions. When successful, this can have a profound effect on the subsistence base with consequences for population levels, and a tendency to monoculture has been noted in such circumstances at the altitudinal limits of cultivation (Harlan 1972). However, concentration on a single crop can be a high risk strategy in areas subject to unpredictable extremes of weather (Colson 1979, 22-23). Fragmentation or morcellation of landholdings to spread risk across environmental zones or around the micro-topographical niches of the uplands is a possible adjustment. In the context of non-intensive, non-mechanised agriculture, this has been shown to be an advantageous strategy, which can be effected through partible inheritance which is often subtly regulated through social mechanisms in order to maintain viable holdings (Galt 1979; Bentley 1987).

The pastoral element in the economy is regarded as well adjusted to the utilization of the more marginal economic zone including those at altitude (D. L. Johnson 1969, 2; Jarman *et al* 1982, 42). Pastoralism has been defined as the life-style of "those who are dependent chiefly on their herds of domestic stock for subsistence" (Krader 1959, 499). However, pastoralism and cultivation are not, as indicated above, mutually exclusive in the same locality or region, or even in the same community. They may be seen as the poles of a farming continuum (Ingold 1984, 7; Cribb 1991, 17-18).

It has been concluded that it is appropriate to describe a farming economy as pastoralist once the number of livestock kept begins to demand specialised forms of management which involve adaptations of lifestyle and social organization. An example of this is the practice of transhumance (Cribb 1991, 18-19). The diverse connotations imposed on the term *transhumance*, all with implications of seasonal mobility, will be discussed below (10.4); for the moment, it is sufficient to define it as the movement of domestic stock between complementary seasonal pastures. Transhumance is an important practice in upland environments where the availability of pasture will vary with the seasons along the altitudinal gradient.

Adaptations of agro-pastoral communities to altitude can also be understood in the context of various factors in addition to local environmental and topographical conditions: for example, past traditions, which are important in shaping responses within the dynamics of changing circumstance (10.2.2 above), regional contact, and wider social and political change originating beyond the highland region which can, nonetheless, affect the remotest communities (Huss-Ashmore and Thomas 1988, 453-6).

Wider regional links seem particularly important to agro-pastoralists in upland zones. The restricted arable potential of these zones can leave their inhabitants dependent on the produce of lower lying areas (Huss-Ashmore and Thomas, 1988, 455). Different zones of production are likely to be integrated at a regional level

through trade or, formerly, exchange (Brush 1976, 127 and 130) in circumstances where topography prevents direct control of production across zones (Huss-Ashmore and Thomas 1988, 455). As well as giving access to resources not normally available within the community's territory, links with more distant communities are noted as an important mechanism for reducing risk of catastrophe when the local subsistence base fails, evening out the different resources of different environmental zones along the altitudinal gradient (Colson 1979, 23-4; Huss-Ashmore and Thomas 1988, 455).

Co-operation within kinship units is seen as an effective and flexible response to fluctuations in food supply (Huss-Ashmore and Thomas 1988, 464-5), while food may be stored either in granaries or 'on the hoof' to reduce the problems of seasonal shortages (Huss-Ashmore 1988, 460-1).

The contrasting character of the resources in different zones may lead to differences in perceptions of the ownership of those resources. For example, in Alpine Switzerland individual rights are claimed for high value resources which are scarce and subject to competition, or which offer a secure long-term yield either through natural high productivity or through improvement via the investment of labour. Therefore, smaller portions of land, capable of cultivation or producing good hay, together with buildings, tend to be subject to ownership by individuals. Communally owned resources, in contrast, usually have low and variable yields with little scope for improvement, and their effective management

requires the collaboration of much larger groups of people. Seasonally available, high altitude grazing normally falls into this category. Its value would be greatly diminished if split into small parcels, a labour demanding process in itself and one with low returns. Overgrazing is regulated through agreement; access routes do not become a contentious issue; and there can be economies of labour with relatively few people on the pastures protecting the resource of many (Netting 1976).

10.2.6 The Mobility of Agro-Pastoralists in the Uplands

Mobility should not be regarded as an inevitable factor in the exploitation of upland zones by agro-pastoralists. Where the local environmental gradient is sufficiently steep so as to place various production zones within ready access of a community, a upland landscape can be exploited from a single location. However, movement is necessary when a community cannot exploit the required range of economic niches from a single base, extractive capacity decreasing with increasing distance (Brush 1976, 127-8; Higgs 1979, 160).

Estimates of the daily catchment area of such communities vary. Five kilometres is one suggested radius for the territory of a sedentary agricultural group, based on one hour's walking time as a reasonable energy input to secure resources, increasing to 7km or 8km for the stock element (Higgs 1979, 163-4). It is calculated that English village settlements will have their territory within a radius of 4km (Chisholm 1979, 109), although a reduced figure of

2km has been suggested for the catchment of early historic settlement (Ellison and Harriss 1972, 915-17), while a still smaller radius of 1km to 1.6km has been argued for later prehistoric settlement (Bradley 1978, 23-4). Local topographic characteristics and low concentrations of resource, particularly in a hilly environment, will serve to modify theoretical figures for the ratio of energy expenditure to resource return as will patterns of land holding (Galt 1979, 95), and rights of access and passage (Netting 1976, 142). Once daily travel does not produce a worthwhile return, satellite settlement is a well attested means of extending the range of exploitation of agricultural communities (Chisholm 1979, 110-14).

Distances covered in the operation of transhumant strategies can vary hugely from a couple of kilometres to many hundreds of kilometres - there is a basic distinction between the "lesser transhumance" and the "great transhumance" (10.4 below). In the context of the uplands, communities situated at the junction of lower-lying land and zones at greater altitude, can practise transhumance involving relatively short journeys. They are, hence, at a considerable advantage. They expend less energy in travel, taking stock to upland pastures and bringing produce back to the settlement; they suffer less loss of stock as a result of accident or disease; and they are in the best position to respond to fluctuations in local conditions. Although lesser-transhumants do not have access to more distant complementary resources, their

exploitation of the uplands is flexible and sensitive (Jarman *et al* 1982, 203).

10.2.7 Summary of Some Characteristics of Exploitation of the Uplands

Subsistence resources will vary according to a seasonal cycle which is predictable and also in response to exceptional and therefore unpredictable factors. Altitude tends to accentuate the effects of seasonality and increase the risk of unpredictable climatic extremes.

Humans can choose to exploit landscapes at higher altitude within environmental tolerances, technological capacities and topographical practicalities. Upland landscapes will contain several environmental niches. The temperate upland environment is unlikely to support resources which allows subsistence specialisation in a single zone.

Choice may be influenced by a variety of economic, social and demographic factors underpinning a requirement to diversify the productive subsistence base across more than one environmental zone in order to even out fluctuations in food supply. Such fluctuations can also be alleviated through re-distribution, particularly via kinship networks, as well as storage, and possibly physiological responses. Those resident in the uplands can advantageously integrate with a wider regional economy to

minimize the subsistence risk present in such less well resourced environments.

"Mobility" in one form or another, reflecting the seasonal availability of resources, is an important concept in the exploitation of upland landscapes by both pre-agricultural, and agriculturally based societies. Mobility may involve either seasonal excursions into the uplands from the surrounding region, or for those resident or mostly resident in the uplands, movement within or from the uplands to exploit different economic niches.

In hunting and gathering societies the greater the fluctuation in resources, the greater the degree of mobility. In the context of food-producing groups, mixed agro-pastoral economies serve to spread the risk of subsistence farming across environmental zones. The chances of successful exploitation of crops which tolerate the local range of conditions is improved by spreading cultivation, and hence risk, around environmental niches. This will have consequences for patterns of land holding. Pastoralism, which through transhumance can involve varying degrees of mobility, is particularly suited to the seasonal availability of grazing which is often the principal resource of environments at higher elevation. Where daily movement requires the expenditure of more energy than is gained by acquisition of the resource, satellite settlements may be established. The type of land tenure in food producing societies operating within the tight environmental constraints of the uplands may vary between individual and

communal ownership according to the value and yield of resources in contrasting zones.

10.3 SEASONALITY AND THE WELSH UPLANDS

Seasonal mobility, usually focussing on transhumant pastoralism subsequent to the adoption of domesticated stock, is frequently cited as an explanation for the way in which the uplands of Wales have been exploited in both prehistoric and historic times. Transhumance has been regarded as ubiquitous in upland Wales by all disciplines concerned with the early and more recent use of these landscapes. Both prehistoric and later archaeological field-remains have been explained in terms of the practice (C. Fox 1932, 66-7; Butler 1988, 956). Geographers too have drawn on the practice to account for past upland land-use (Davies and Miller 1944, 524; Bowen 1965a, 272-3). Palaeo-environmental data has been interpreted in the context of transhumant practices (P. D. Moore 1981), while a broadly based ecological approach to prehistoric and historic land-use in South Wales has emphasised the potential importance of transhumance (Webley 1976). Historians of both the earlier and later Middle Ages have attributed a significant role to transhumance in the agricultural economy (W. Davies 1982, 39-41; W. Rees 1924, 217), while social historians have explored the traditions of *hafod* (summer farm and pasture) and *hendre* (home farm and land holding) (E. Davies 1980; 1984-5). Throughout the following chapters reference will be made to authorities who assert either a seasonal or more specifically a transhumant explanation for upland land-use.

Therefore, further examination of transhumance is desirable in order better to understand its rôle in the dynamics of exploiting the uplands, and to place its application to the data from the survey area in a considered perspective.

10.4 TRANSHUMANCE

10.4.1 Introduction

A universally applicable definition of transhumance in terms of the character and implications of the activity is difficult to find (Estyn Evans 1940a, 172). The practices associated with transhumance will be affected by the wider environmental, economic and social setting, varying, for example, between the temperate landscapes of western and northern Europe and the warmer Mediterranean zone (E. Davies 1941). World-wide, it is apparent from the briefest scan of the anthropological literature that transhumance may take place in the context of very different societies, cultures and economies. This is particularly noticeable in markedly contrasting environmental zones. For example, the life-style of the Jie of Uganda (Gulliver 1955, 49-123) who practise transhumance in semi-arid grasslands (Gulliver 1955, 16-20 and 31-48) contrasts with that of those inhabitants of the Himalayas who operate a transhumant system (Pant 1935).

10.4.2 Transhumance, Arable Farming and Nomadism

Transhumance has been defined as "the regularly recurring seasonal migration of the flocks and herds in search of pasture" (Carrier

1936, 59). At a general level of usage, therefore, the definition of transhumance can be simple - the word indicating no more than "a form of livestock management making use of seasonal variations in the availability of pasture" (Cribb 1991, 19). So defined, the pastoral strategy of transhumance carries no particular implications regarding social organization, or wider cultural and economic contexts.

Transhumance may, therefore, on the one hand, be taken as a prime characteristic of pastoral nomads (Cribb 1991, 19-20), who do not necessarily directly participate in sedentary agriculture (D. L. Johnson 1969, 11-12); but it can also be viewed "as an integral part of a more broadly based agricultural system *which includes sedentary cultivation*" [emphasis added] (Geddes 1983, 51). There is no conflict in these usages since both subsistence practices can involve the strategy of moving stock to seasonally available grazing. It has already been noted that the practice of cultivation is not necessarily excluded when an economy is described as pastoral, that is once the management of livestock begins to determine the character of social organization (10.2.5 above).

Distinctions between forms of pastoral activity are, therefore, often unclear. They tend to relate to degree rather than kind (Galaty and Johnson 1990, 22). For example, it is the high degree of human involvement and social mobility involving impermanent dwellings which is taken as an important indicator of nomadism, following a transhumant strategy, exploiting seasonally available

pasture and water for herds and flocks on which the community is largely dependent (D. L. Johnson 1969, 18; Hole 1980, 121-2). However, any tendency to conflate transhumance with the practices of nomadism should be avoided since, in a European context, it leads to the neglect of regionally important connotations of the strategy in relation to the scale and range of movement, the economic context and the nature of associated settlement (D. L. Johnson 1969, 18-19).

10.4.3 Transhumance in the European Context

Focussing on transhumance in an European context, various types of transhumant cycle have been proposed. These include the "great transhumance," a long distance journey to pastures hired in other people's territory, a practice well attested in the Mediterranean littorals; "lesser transhumance," pasture and perhaps tillage of upland regions which do not lie beyond home territory; "inverse transhumance" where there is seasonal movement to lower lying land; and "double transhumance" which involves animals being sent in summer to highland pastures and in winter to lower lying pastures (Carrier 1932, 7-8).

These categories can be refined in various ways. For example, the distinction has been emphasised between seasonal movement which involves significant displacement of the human population as well as the animals, and *stock transference* where seasonal movement of people is limited, perhaps confined to specialist herders who may be hired to care for the beasts (Jarman et al 1982, 45-6).

Paralleling this, transhumance has also been viewed as operating primarily in a social economy involving the use of communally held pastures, rather than being part of a monetary economy in which grazing grounds are hired (E. Davies 1941, 167-8), thereby excluding Carrier's "greater transhumances" (1932, 7-8).

Transhumance in the European highland setting often requires the seasonal vertical movement of both people and animals between climatic and ecological zones, from permanent lowland settlements to "huts and camps" in summer upland pastures, or away from permanent upland settlement to milder lower lying, often coastal pasture (Galty and Johnson 1990, 22-3). The traditional usage of the term in the western and northern European context, frequently has such settlement implications, in addition to implications of movement on a relatively limited scale of distance (D. L. Johnson 1969, 18-19). The strategy is associated with a practice which involves, as well as the movement of animals between pastures, the bi-polar movement of peoples between settlements, one of which is never entirely abandoned, the other being occupied on a seasonal basis only (E. Davies 1935, 97; Estyn Evans 1940a, 172). Often the permanently occupied settlement is a focus for cultivation indicating the agro-pastoral mix of the economy (E. Davies 1941, 155) which invariably is family and subsistence based (Graham 1953-54).

10.4.4 Transhumance in Britain

Transhumance in Britain, defined in its simplest terms, the movement of animals between seasonally available pastures, has been historically, and continues to be, an option in the management of pastures and the husbandry of animals (E. Davies 1935; Carrier 1936, 62-5; Broadbent 1981). In addition to vertical movements in relation to the uplands, seasonal use of pastures in periodically waterlogged areas, or on shorelines and off-shore islands is noted (Carrier 1936, 62-3; Bradley 1978, 55). This may be no more than *stock transference* to pasture, which sometimes is rented, and which involves few people, who sometimes are specialist herders (10.4.3). However, in terms of the historical record, it is the vertical movement of stock in the uplands, together with their owners in significant numbers to communally held grazing as part of a mixed agricultural economy which is essentially subsistence based, that is best attested in Britain, although it is in remote low lying coastal and island regions that the practice has been most enduring (Chapter 11 below)

10.4.5 Hunting and Gathering, Droving and Transhumance

From time to time, hunting and gathering economies are also described as transhumant (eg. D. Clarke 1978, 25; Britnell 1984, 136; I. G. Simmons et al 1981, 102; J. A. Taylor 1980b, 323) on account of the requirement to travel to exploit seasonally available resources. This usage of the term appears to be an import from "New World" archaeology (Bahn 1992, 513). However, a basic distinction can be made between the seasonal movement of hunter-

gatherers to *procure* food and the movement of pastoralists to *produce* food (Cribb 1991, 20-22). Therefore, application of transhumance to subsistence strategies which do not involve domestic stock is avoided here as an unnecessary confusion.

Droving in Britain during the period of Roman occupation and later, during the later Middle Ages and early modern period, has also been described as transhumance (Noddle 1989a, 41-2). This usage of the term is also avoided for several reasons. The practice of droving was a response to a market economy rather than integral to subsistence agriculture; it did not involve the return of stock to home pastures on a cyclical basis; and, in fact, it is recorded as contributing to the decline of the seasonal exploitation of pasture in some areas (Fenton 1977, 126-7; and 11.5 below).

10.4.6 Conclusions Regarding the Character of the Practice of Transhumance

By way of summary, transhumance can be understood at two levels. At a general level of definition, it only means a strategy of managing domesticated livestock to take account of seasonally available pasture. However, more often than not, the term has acquired practical implications which can be complex and will vary according according to context. Depending on the point of its application in the agro-pastoral continuum, transhumance can carry particular connotations as to the degree of social mobility and the nature of settlement practice, as well the nature of the relationship and dependency, if any, between cultivation and animal

husbandry in a subsistence economy. In a European context, the historically attested application of transhumance usually involves social mobility to a temporarily occupied dwelling on often communally owned pastures, but not the abandonment of the main homestead which is a focus for arable agriculture. However, stock transference, with lesser communal involvement, is recognized as another variant of the strategy sometimes involving only hired herders and pasture.

10.5 ARCHAEOLOGY, SEASONALITY, PASTORALISM AND TRANSHUMANCE

Seasonality and mobility bring variety to the character of the settlement sites and work stations (Orme 1981, 79-80 and 105-6). This has been recorded for hunting and gathering communities and pastoral groups (eg. Thompson 1939; Binford 1983, 109-143; Cribb 1991).

The archaeological traces of temporary settlement, whether those of hunter-gatherers, or pastoralists following a seasonal cycle, are likely to be slight (Orme 1981, 79-87), although repeated usage of the same location across many years or centuries will lead to the accumulation of evidence. In circumstances of favourable survival of palaeo-botanical and palaeo-zoological evidence, it may be possible to demonstrate the season of occupation (Renfrew and Bahn 1991, 252-54 and 259-61).

In general prehistoric archaeologists are more confident in assigning evidence for temporary settlement to hunter-gatherers

than to pastoralists (Cribb 1991, 65-66). Faunal assemblages, where they survive, can provide evidence for a pastoral economy, as can the presence of pens for coralling animals, while inferences can be drawn from the location of settlement in relation to topography, pasture and water. Studies of contemporary settlement associated with pastoralists give hope that criteria may be identified which will allow the settlement locations of past nomadic pastoralists to be distinguished (Cribb 1991, 212-29) although such correlations may be of relevance to their local region only. On the other hand, it is also suggested that such characteristics may not be sufficiently distinctive to allow differentiation between the impermanent dwellings of pastoralists and those of hunter-gathers, and that elements of the tool kits of the two strategies can overlap further blurring matters (Hole 1980, 122-6).

Nonetheless a tool kit, containing implements useful to hunter-gatherers, proven to predate the development of food production in an area, can place a settlement within a hunting and gathering context, while traces of apparently transient settlement proven to significantly postdate the adoption of food production can carry inferences of pastoralism, particularly in terrain, such as the uplands, on which stock herding is the most likely strategy. As noted below, such inferences, often based largely on negative or subjective criteria, are unsatisfactory in so far as they fail to advance understanding of social and economic processes. Finally, of course, matters will be blurred during the possibly prolonged

period of transition from hunting and gathering to food production (see 12.4.1 below).

While pastoral economies and settlements continue to be considered difficult to recognize from the archaeological record (Fleming 1971b, 160; Bradley 1972, 193-4; Cribb 1991, 65-8), three factors, which should be evident from that record, have been identified as pre-requisites for the existence of pastoralism (Orme 1981, 267). These are the presence of animals suitable for herding; extensive open landscapes; and parallel or complementary arable production, although it may be that independent pastoral systems were viable in the past (Hodder 1982, 104-5).

It has been claimed that peoples, who are demonstrably both arable farmers and stock herders, can be identified as "pastoralists" by particular cultural values demonstrated in the archaeological record, particularly evidence for the status attached to livestock (Robertshaw and Collett 1983). On occasions material culture has been taken to indicate a preoccupation with stock keeping in Britain (Fleming 1971b, 160-1), but more often negative evidence, or at best evidence susceptible to ambiguous interpretation, in relation to both settlement and material culture, has been invoked to suggest a pastoral economy (Bradley 1972, 193-5). The direct *diagnostic* evidence which might survive for pastoralism with specific reference to an European upland context has been described as "negligible"; while low population densities, coupled with mobility, combine with an accentuated process of

natural erosion in upland locations to minimize the possibility of the discovery of such data (Jarman et al 1982, 204).

Given the challenges of proving pastoralism in general from the archaeological record, it is unsurprising that archaeological investigation finds great difficulty in distinguishing between transhumant strategies which relate to nomadic pastoralism on the one hand and, on the other, those practised in the context of a agro-pastoral economy (Bradley 1972, 193-5).

When Galty and Johnson, in a European context, couple the movement of animals to seasonal pastures with shifts of population from permanent settlement to temporary huts or camps (1990, 22-3) (10.4.3 above), they introduce a settlement dimension which has frequently been taken-up in archaeological discussion of transhumance in western Europe; for example, transhumance is linked to "sedentary cultivation" [emphasis added] (Geddes 1983, 51), or more explicitly, "transhumance involved the construction of buildings" (Noddle 1989b, 39). This has sometimes led to definitions in archaeological literature which seem to almost give priority to people over animals, for example, "transhumance is the regular movement of all or part of a farming *community* from one economic environment into another" [emphasis added] (Bradley 1978, 57).

Hodder has discussed the challenges of identifying transhumance in the archaeological record, and has cautioned against the assumption

that conclusions drawn from studies based on recent observations of contemporary practices can be projected back beyond the development of a market economy (1982, 104-6). For example, the application of ideas, based on Medieval and modern long-distance sheep transhumance in the Iberian Peninsula, to the Neolithic and Early Bronze Age of the area has been challenged, although economies involving other forms of pastoralism, including localized transhumance, are considered possible (M. Walker 1983).

Archaeological consideration of transhumance is, nonetheless, most frequently approached from the perspective of historical sources, even though this often leads to the selection of archaeological data to fit the historical model (Lewthwaite 1981, 57). Bradley, for example, draws on a number of historical and recent sources from the British Isles to construct hypotheses regarding transhumance in the uplands which are then applied to archaeological data from prehistoric sites (1978, 60-5). This, therefore, leads on to an examination of the historical data for the actual practices of transhumance as undertaken in the relatively recent past in Wales and comparable areas of the British Isles.

CHAPTER 11: DATA FOR
TRANSHUMANCE IN WALES AND
COMPARABLE AREAS OF THE
BRITISH ISLES

11.1 INTRODUCTION

A fundamental similarity has been claimed for the rural economies of the western seaboard and highland zone of the British Isles. Common features include a predominantly Atlantic climate, limited areas of arable land, and large areas of rough grazing which is at its best in the summer and which in the past has resulted in the widespread adoption of transhumance (Estyn Evans 1940b, 97; MacSween 1959, 75). This chapter will detail the historical information for transhumance in Wales, as well as providing an overview of aspects of the practice of the strategy in other regions of Britain in order to provide points of comparison. These other regions are the northern counties of England (11.3 below), Ireland (11.4 below) and Scotland (11.5 below).

This extended survey of historical information on transhumance is justified because of the prominence given to the practice in accounts of upland land-use in Wales (10.3 above). Understanding the character of the practice in relatively recent centuries will facilitate assessment of its role in the past land-use of the survey area.

11.2 DATA ON TRANSHUMANCE IN WALES

11.2.1 Transhumance Strategies in Wales

Grazing of seasonal pastures located both in the uplands and lowlands is historically attested in Wales (T. M. Owen 1991, 2). Exploitation of grazing grounds on a seasonal basis continues to

the present-day; for example, the summer grazing of sheep on upland commons, which are wintered within enclosed fields around the farm at lower altitude with the assistance of summer-produced fodder and food concentrates. Well into the twentieth century, however, sheep made much longer journeys to be wintered on hired lowland and coastal pastures at considerable distances from the parent farm (E. Davies 1934-35; 1935, 100-2). This practice clearly falls within the basic definition of transhumance, the use of seasonal variation in the availability of pasture (Carrier 1936, 59; Cribb 1991, 19), and can be viewed in terms of both the "great transhumance" and "double transhumance" discussed by Carrier (1932, 7-8) (10.4.3 above). It may also be described as "stock transference" since it is without significant implications for seasonal population movement (Jarman 1982 et al, 45) (10.4 above).

However, historical transhumance in Wales is most often discussed in the context of a practice in which part of the community, not just the animals, moves on a seasonal basis (10.4 above). This usually involved vertical movement from lowland farms to upland seasonal pastures and the use of a structure, the *hafod* or *hafoty*, as a summer residence (11.4.2 below).

Transhumance is considered to be an important feature of rural life from the early Middle Ages onwards (T. M. Owen 1991, 1). References in the *Welsh Law Books* and literary sources indicate seasonal exploitation of grazing in different zones in both the earlier and later Middle Ages (G. R. Jones 1972, 355-8; W. Rees 1924, 126-7).

It is claimed that the practice was more widespread during the later rather than the early Middle Ages (W. Davies 1982, 40), although this may reflect greater documentary evidence. It appears from the testimony of contemporary observers that the practice of vertical transhumance was in decline by the seventeenth century (Emery 1967, 117) but lingered on in some areas until the eighteenth century before ending in the early nineteenth century (Emery 1967, 117; Sayce 1956, 124).

The longevity of historically attested transhumance gives notice that its study, set against a back-cloth of changing social, economic, political and environmental factors, cannot be simple. As a consequence of the fragmentary evidence available (11.2.3 below), it is inevitable that generalisations about the character of the practice will not recognize imperceptible variations which will have occurred over time and from region to region.

11.2.2 *Hafod, Hafoty, Lluest and Hendre*

Place-names including a *hafod* or *hafoty* or *lluest* element are widely distributed in early Post-Medieval sources and are also present in later Medieval records. There are regional preferences in the usage of the terms (M. Richards 1959-60; E. Davies 1980). It has been suggested that *hafod* originally referred to a summer grazing ground rather than a summer dwelling (E. Davies 1980, 4), with only a late attribution of the term to a structure or place from the fifteenth or sixteenth centuries onwards (E. Davies 1977, 57-8; 1984-85, 82). However, a direct link with a dwelling has

been implied by analysis of *hafod* as a compound of *haf* 'summer' + *bod* 'dwelling', and *hafoty* as *hafod* + *ty* 'house' (M. Richards 1959-60, 13). The *hafod* has been associated with transhumance involving mainly cattle and dairying, the *llest* with seasonal grazing of pastures mostly by sheep (E. Davies 1984-85, 86-7). There was probably a difference in the scale of communal movement to the *hafod* compared to that to the *llest* (11.2.5 below). The *hendre* was the home-farm, permanently occupied and usually partially under cultivation.

11.2.3 Evidence for the Character of Vertical Transhumance in Wales

There is very little documentary evidence for the practice of vertical transhumance in Wales during the historical period, and the few sources that provide any detail are very late, dating to the eighteenth or early nineteenth century (Sayce 1956, 118-20). Two articles written by Sayce (1956 and 1957) are often cited as principal references on the character of transhumance in Wales during the historical period. The extent to which they have to make conscious resort to comparative studies from elsewhere in Britain and Europe to amplify the Welsh material is striking (Sayce 1956, 120-1).

The most recent comprehensive synthesis of data from Wales is that of Elwyn Davies (1984-85). This builds on a number of regional studies which examine the practice of transhumance based on place-name evidence derived largely from mid- to late-eighteenth century

estate maps and nineteenth century tithe maps although there are some earlier sources (E. Davies 1974, 1977 and 1980).

The classic late eighteenth century account of vertical transhumance in Wales comes from Thomas Pennant's *Tours in Wales* (1883a and b). His description very likely influenced later accounts of transhumance published in the early nineteenth century (eg. J. Evans 1812, 319). The three tours were undertaken in the period 1771 to 1776. When assessing the value of the commentaries it is worth bearing in mind the comment of Parkins, a biographer of Pennant

"In travelling through his native country, Pennant had the advantage of a previous acquaintance with most parts of it. The history and traditions of the places which he visited were familiar to him. He spoke the language of the people, and he was personally well known to many of the leading gentry, and consequently able to obtain more easily much valuable information." (1883a, xxxiii).

These advantages lend credibility to Pennant's writings. However, in the context of a consideration of transhumance in Wales as a whole, it should be remembered that his description is of vertical transhumance in Snowdonia only. Although the description is well-known, it is often only quoted in part. It is cited in full here since it encompasses the range of questions which need to be asked of the data relating to transhumance: these include the nature of communal involvement, the form of dwelling, the character of the

husbandry practice, and other economic activities undertaken at the summer pastures.

" This mountainous tract [in Snowdonia] scarcely yields any corn. Its produce is cattle and sheep, which during the summer, keep very high in the mountains, followed by their owners, with their families, who reside in that season in *Hafodtai* [sic], or summer dairy-houses, as the farmers of the Swiss Alps do in their *Sennes*. These houses consist of a long low room, with a hole at one end, to let out the smoke from the fire which is made beneath. Their furniture is very simple; stones are the substitutes of stools; and the beds are of hay, ranged along the sides. They manufacture their own cloaths [sic]; and dye their cloths with *Cen du y Cerrig*, or *Lichen omphaloides*; and another *Cen*, the *Lichen paritinus*; native dyes, collected from the rocks. During the summer, the men pass their time either in harvest work, or in tending their herds; the women in milking, or making butter and cheese. For their own use, they milk both ewes and goats, and make cheese of the milk, for their own consumption. The diet of these mountaineers is very plain, consisting of butter, cheese and oat bread or *Bara Ceirch*; they drink whey; not but they have a reserve of a few bottles of very strong beer, by way of cordial, in illness. They are people of good understanding, wary and circumspect; usually tall, thin and of strong constitutions, from their way of living. Towards winter, they descend to their *Hên Dref*, or *old dwelling*, where they lead during that season a vacant life." (Pennant 1883b, 325-6).

That the people were "of good understanding, wary and circumspect" is a useful reminder that underlying the functioning of transhumant

systems is a process of decision-making by human-beings (10.2.2 above).

11.2.4 The Transhumant Cycle

The earliest evidence from the Medieval Law Books relates primarily to a transhumant cycle in which animals were taken to pastures for grazing on a seasonal basis in the summer when land on the permanently worked farm was under crops. Hence, the risk of animals damaging growing crops was removed; use was made of a seasonal resource, land on which pasture was best available in the late spring and summer; and grass-land close to the permanent settlement was freed for the production of hay for winter feeding. Winter grazing of both meadow and the stubble of cultivated fields helped sustain the animals who contributed to the on-going fertility of the soil through manuring. Movement to the seasonal pastures began in early May, and they continued to be used until, variously according to different sources, August, the end of September or as late as 1st November. A fourteenth century court case suggests that at that time regulation of the cycle was by law, not just custom (G. R. J. Jones 1972, 357; E. Davies 1984-85, 75-6).

There are also Medieval references to pannage for swine based on seasonal occupation of autumn dwellings or *cynhaefdy* (G. R. J. Jones 1972, 356).

11.2.5 The Scale of Human Movement to the Summer Pastures

There is little direct evidence from Wales for the scale of human movement to, and residence in, the summer pastures. While Pennant apparently suggests that the entire family moved to the upland pastures, it is suggested on analogy with transhumant systems elsewhere that only part of the family, or sometimes only a servant or hired herder, may have accompanied the animals, particularly the less demanding non-milch stock (Sayce 1957, 71-5; E. Davies 1984-85, 87). It is possible that more people would have been required to service the dairying activities at the *hafod* compared to the sheep husbandry at the *lluest* if it is accepted that the two names reflect different husbandry practices (E. Davies 1984-85, 86-87) (11.2.2 above).

The fact that the *hendre* was apparently under cultivation strongly suggests that it was not left unattended. It seems likely that the numbers resident in the seasonal pastures would have varied through the summer months according to the demands for labour made by the various activities both at the *hendre* and *hafod*. Hay-making and harvesting at the *hendre* would have required a concentration of labour, while any hay-making on the upland pastures could similarly have attracted a temporarily larger workforce (11.2.7 below). The accessibility of the *hafod* from the *hendre* would also have been a factor in determining the size of any population temporarily resident on the summer pastures (11.2.6 below).

11.2.6 Contact Between *Hendre* and *Hafod*

Where the distance between the *hendre* and *hafod* can be calculated, this seems to vary between 1½ miles and 4 miles (E. Davies 1984-85, 82). However, the estate and tithe maps which provide the basis for most such calculations are of relatively late date in the eighteenth and early nineteenth centuries. By then enclosure and the up-slope encroachment of permanently occupied farms may have reduced the distance compared to earlier centuries (E. Davies 1977, 70). The presence of a half-way stage is reflected in some place names, and this may indicate that longer rather than shorter journeys were sometimes necessary between the *hendre* and *hafod* (M. Richards 1959-60, 16), or else that upland pastures were grazed in ascending stages as is documented elsewhere in western Europe (Carrier 1932, 198). The steepness of the ascent (E. Davies 1984-5, 82) and the nature of pathways (Sayce, 1957, 71) were as important as distance in determining accessibility and the frequency of contact between *hafod* and *hendre*.

11.2.7 The Nature of the Activity on the Seasonally Utilized Pastures

The *hafod* has been interpreted as primarily a dairy unit associated with cattle where butter and cheese were produced to supplement food supplies during the winter months when milk was scarcer as a result of impoverished grazing and fodder (E. Davies 1984-85, 75). It has been claimed that the *llyest* was in essence no more than a shepherd's hut which allowed grazing to be extended to still more distant pastures (E. Davies 1984-5, 87). Although sheep became

increasingly important in the uplands during the Post-Medieval period (Emery 1967, 124-9), it is likely that cattle grazing continued since cattle have an important function in an integrated pastoral system improving pasture for sheep (Allen 1993, 179; Broadbent 1981, 84-5).

The importance of hay-making on the summer pastures has been emphasised in a western European context (Sayce, 1957, 66-9). It has been noted that early summer grazing of a common upland grass, Purple Moor Grass (*Nolina caerulea*), will lead to high quality pasture later in the summer which can be cut for hay (Crampton 1968, 121). There are references to hay-making associated with the occupation of *hafodydd* in mid-Wales which are supported by place-name evidence (G. Edwards 1873, 27; M. Richards 1959-60, 18). It may be that Pennant was referring to hay-making when he wrote of the men in Snowdonia passing their time in harvest work (1883, 325). Alternatively, the reference could be to harvesting at the *hendre*, or even to out-field cultivation. Although the practice of out-field cultivation in the uplands is suggested by Medieval sources (G. R. J. Jones 1972, 356), there is little evidence for cultivation associated with *hafodydd* apart from some place-name evidence in which the *hafod* element prefixes the name of a crop such as barley, rye or flax (M. Richards 1959-60, 18). Such activity, however, perhaps little more than occasional gardening, might escape attention in historical sources and leave scant physical traces on the ground. Hay-making and any out-field cultivation would both require either closely attended animal

husbandry or else physical protection in the form of a artificial barrier.

Work at *hafodydd* included, following Pennant, various craft activities such as weaving (1883, 325). Other wool processing activities such as spinning and carding almost certainly took place too (Allen 1993, 177).

Finally, the social attractions of life on the summer pastures when neighbours gathered (Sayce 1957, 75-6) must at times have been countered by unwelcome excitements as stock strayed, fell ill or was attacked or stolen (Sayce 1956, 136-7). The likelihood of episodes of rustling and brigandage is indicated by documentary evidence and the presence of weaponry (Allen 1993, 177), although the latter could of course have been used to ward off natural predators or to hunt for the pot.

11.2.8. Historical Information on the Structures associated with Transhumance

There is a tendency to perceive any habitations or shelters erected for habitation on the summer pastures during the Middle Ages as lightly built. Timber, wattle and daub, and turf are cited as likely materials used in their construction (Sayce 1957, 37-9; M. Richards 1959-60, 16; G. R. J. Jones 1972, 356). Apart from analogy with other distant regions, there seem to be two sources of evidence underlying this view. Firstly, in the Welsh Laws, a much lower value is attached to the summer dwelling compared to the

permanent homestead. Also the constructional detail listed for the permanent homestead is not provided for the summer house. This is taken as suggesting the latter is a less substantial structure of less import (G. R. J. Jones 1972, 356; E. Davies 1984-85, 78). Secondly, Gerald of Wales' statement, in his twelfth century *Description of Wales*, that the Welsh "content themselves with wattled huts on the edges of forests, put up with little labour or expense, but strong enough to last a year or so" (1978, 252), is invariably taken as a reference to seasonally occupied structures (G. R. J. Jones 1972, 356; E. Davies 1984-85, 78; Butler 1987, 47-8).

There is no more information on the character of the structures for several centuries, until the late eighteenth and early nineteenth centuries. These accounts of the stone-built buildings associated with summer pastures emphasise their simplicity. Pennant's description has already been quoted (1883b, 325). J. Evans describes "mountain cottages" in Caernarvonshire as "constructed of loose stone These are piled on each other, and the interstices caulked, or stuffed with moss.." (1812, 322). He is not explicitly referring to *hafodydd*, although he is contrasting the "mountain cottage" with the "houses of small farmers" which have "mortared walls." He may, therefore, be referring to summer dwellings

There may be a distinction to be made between the structure of the *hafod* compared to the *lluest*. The *hafod*, as a dairy unit, may have

been more substantial than the *lluest* if it is accepted that the latter was no more than a shepherd's hut (E. Davies 1984-85, 87).

This slight documentary evidence for the summer dwellings has led to the conclusion that they were never architecturally significant. However, it is suggested that some at least of the summer dwellings became more substantial and significant structures as some areas of summer grazing in the uplands evolved into permanently occupied holdings in the later Middle Ages and early Post-Medieval period (P. Smith 1967, 772) (11.2.9 below).

In conclusion, seasonal exploitation of the Welsh uplands does not seem to have dictated that summer dwellings or shelters should have particular structural characteristics and, as noted above, it has been associated with a range of building forms (7.6.4 above).

11.2.9 The Dynamics and Decline of Vertical Transhumance in Later Medieval and Early Post-Medieval Wales

Elwyn Davies in particular has analysed cartographic evidence to demonstrate convincingly the upward expansion of permanent holdings from the sixteenth century onwards (1984-85, 83-6). The *hafod* became the growth point around which land was improved and enclosed until in time it became a separate farm, which in turn might establish its own outlying seasonal base. Sayce envisaged that from the Middle Ages onwards changing climatic and demographic circumstances could have resulted in a cycle whereby the status of settlements might change on more than one occasion,

from seasonal to permanent occupation, and then back to seasonal usage (1957, 86).

The introduction of large-scale sheep farming, interacting with encroachment, is usually given as an important reason for the decline of family-based vertical transhumance in Wales, particularly that involving dairying (Sayce 1957, 83; E. Davies 1984-85, 87). Sheep were not as labour intensive as milch cattle; they were easier to over-winter; they could thrive in still more remote and less fertile landscapes; and required simpler bases, the *lluest*, away from the farmstead (E. Davies 1984-85, 87; 11.2.8 above).

11.3 DATA FOR TRANSHUMANCE FROM NORTHERN ENGLAND

It appears that transhumance was a widely adopted strategy in England during the Middle Ages (Astill and Grant 1992, 217). For example, in Kent during the early Middle Ages the summer pastures for cattle and swine were located at a considerable distance from settlements. Journeys of fifteen, thirty and even forty miles are cited. Between 1000 and 1300 AD many of the summer pastures became the locations of permanent settlement although traces of seasonal movement continued until the seventeenth century, or later in the case of stock transference under the care of shepherds who spent the summer in shelters on Romney Marsh (Everitt 1986, 32-9). The seasonal exploitation of pasture and pannage at a distance from permanent settlement has been argued in the west Midlands (Ford 1976, 280-2), while transhumance similar to that in

Wales has been postulated for Cornwall from eleventh century documentary data (Hoskins 1963, 18-19). This seems to have continued until the early seventeenth century (Pounds 1942). However, the practice appears to have been most comprehensively studied in the northern counties (Astill 1992, 44). Therefore, in England attention will focus on the northern region.

The principal summations of data on transhumance in the northern border counties of England seem to be those of Thirsk (1967), and Ramm *et al* (1970) whose account of the documentary evidence complements field survey. There are references to transhumance in the thirteenth and fourteenth centuries AD although it can be traced back to the tenth and eleventh centuries AD on place-name evidence. Transhumance generally appears to have been in decline by the sixteenth century but continued into the eighteenth century before giving way to more efficient pasture management and enclosure. There appears to be local variation in the decline of the practice. For example, in northern Northumberland close to the Scottish border, Scottish raiding in the fourteenth century diminished the practice. It did not recover until the sixteenth century. More stable border conditions after the Act of Union between the two crowns in 1603 began to encourage permanent settlement in remoter locations previously used only on a seasonal basis (Ramm *et al* 1970, 1-3; Harbottle and Newman 1973, 141-2 and 146; Charlton and Day 1979, 209 and 215)).

With cattle breeding the principal economic concern in the area, seasonal grazing provided fresh pasture and was perceived as assisting in reducing infection (Thirsk 1967, 22). Little detail is documented about the routines of transhumance. However, early seventeenth century records testify to a communal movement to the summer pastures around Whitsun which was organized with "military precision" to counter the dangers of local feuding and rivalry (Thirsk 1967, 22-23).

Transhumance apparently perpetuated clan identity since the summer grazing grounds continued to be held in common according to surname, although the main holdings in some areas were much dispersed through the effects of partible inheritance (Thirsk 1967, 23). According to seventeenth century records, lowland settlements fragmented in the summer, men travelling to different widely scattered pastures where they held grazing rights on the basis of surnames (Dixon 1972, 251). It appears that the *shielings*, buildings used to accommodate the herders, could be subject to individual ownership even though the pasture was held in common (Ramm *et al* 1970, 4). Distances cited between the permanent homestead and seasonally occupied pastures range from seven to twenty miles (Ramm *et al* 1970, 3 and 5). Characteristically, *shielings* could be located alongside streams in valleys which provided access to higher ground or on the boundaries of grazing territory (Ramm *et al* 1970, 7). Partible inheritance and consequent land fragmentation had the effect of maintaining high local

population levels which took advantage of the common pasture but put the limited arable land under pressure (Thirsk 1967, 24).

It has already been noted how buildings from this area bear some comparison with those in the survey area (7.3.11 and 7.4.5 above). Both single cell and compartmented structures are amongst the buildings identified as shielings, the seasonally occupied structures usually connected with summer grazing (Ramm et al 1970, 1 and 9-10). However, some structures were occupied by miners and may have been unconnected with transhumance. Further, there are problems in distinguishing permanently occupied homesteads from seasonally occupied structures, particularly as some shielings in time became permanently occupied (14.4.4 below).

Characteristically, the buildings assumed to be shielings are of drystone-build, are mostly rectangular in plan and have gabled roofs. They range from 5m to 12.5m in length by 2.7m to 7.6m wide. Larger examples tend to be sub-divided, usually into two, more rarely into three compartments. Some have outbuildings. Of those studied in detail only one had evidence for a window, while there was no evidence for chimneys, a smoke hole below the roof being assumed (Ramm et al 1970, 9-10).

As already noted, some of the sites in the North of England have been excavated, producing in one instance ceramics of the fourteenth to sixteenth centuries, in another pottery of the early fourteenth century and in another mid-seventeenth to mid-eighteenth

century ware (7.3.11 and 7.4.5 above). On archaeological grounds, it has been suggested that an early Medieval settlement at Simy Folds, Co. Durham ceased to be permanently occupied later in the Middle Ages becoming a shieling where grazing was combined with iron smelting (Coggins et al 1983, 23). Surprise has been expressed that this and other sites apparently occupied only during summer should be associated with metalworking (Astill 1992, 45). Metalworking activity may be less puzzling if the late prehistoric iron working at Crawcwellt, Gwynedd is recalled, where use was being made of local supplies of bog ore (6.2.4 above).

11.4 DATA FOR TRANSHUMANCE FROM IRELAND

Transhumance in Ireland is seen as part of the northern and western European tradition of the seasonal usage of pasture in the context of a family based subsistence economy (Graham 1953-54, 74), although the transfer of animals to seasonal pastures under the care of specialist herders is also recorded (Aalen 1964a, 70). It is suggested that transhumance was an essential part of the agricultural system prior to the seventeenth century AD although it began to decline thereafter. Records of the practice begin to be available from the seventeenth century. It continued into the nineteenth and early twentieth century in modified forms in the remoter parts of Ireland but had finally disappeared by the middle of the twentieth century (Graham 1953-54, 74 and 76-9).

Transhumance, at least as it appears from historical data, is perceived as a response to the need to integrate livestock-keeping

with arable cultivation in an open field system (Aalen 1964a, 69). For example, in the eighteenth century AD, farms clustered around open fields associated with the rundale system of partnership farming. These were continuously cropped, mostly for oats, and were sometimes supplemented by outfield cultivation. Hence grazing during the arable season was found on more distant common hill pastures (Buchanan 1970, 152). As well as making land around the farms available for tillage, other advantages derived from transhumance are stated as the provision of fresh grazing; releasing winter grazing for the production of hay as fodder; a change in location generally beneficial to both stock and people; and a requirement for a fresh water supply which, if not provided, could lead to disease and death amongst stock (ó Moghraín 1943, 164; ó Danachair 1945, 250; 1983-84, 36). Also it is suggested that larger numbers of stock could be maintained by taking advantage of seasonal pastures (ó Moghraín 1943, 163; ó Danachair 1945, 250).

A decline in subsistence-based transhumant activity began with the land confiscations and Settlements of the sixteenth and seventeenth centuries (Aalen 1964a, 65). Decline accelerated with land reclamation and enclosure of the late eighteenth century; the repeal of the Corn Laws in 1846 which destroyed the market for home-grown cereals; and evictions and emigration reducing rural populations. Hence better management of pasture, land previously used for arable farming becoming available for pasture, and population decline combined to reduce the need for the exploitation of distant seasonal grazing. Also landlords increased rents per

head of cattle removing the incentive to keep herds larger than those capable of being supported by the farm. Further, towards the end of the nineteenth century modern methods of butter making replaced traditional dairying practices (ó Moghraín 1943, 163; ó Danachair 1945, 250; 1983-84, 39).

Literary and cartographic evidence provide circumstantial evidence for the practice of transhumance although a detailed reconstruction of the practice in a given locality is very difficult (Aalen 1964a, 65 and 70). The relatively late survival of transhumance does, however, provide oral testimony (eg. ó Moghraín 1943, 164-6; Aalen 1964b). It needs to be kept in mind, however, that such information may relate to a modified later version of the practice (Aalen 1964b, 41). Later forms of transhumance included the sheltering of cattle overnight in structures on the pastures while the herders journeyed to-and-fro each day (ó Moghraín 1943, 165; Aalen 1964b, 41).

Most summer pasturage was on high ground. Low lying bogs, marshes and water meadows are thought to have been of lesser importance (ó Danachair 1983-84, 36). Transhumance was also practised on off-shore islands (ó Moghraín 1943; Graham 1953-54). A salient feature was that people lived on the seasonal grazing grounds and that they therefore constructed shelters (ó Danachair 1983-84, 37). These shelters are usually described as *booleys* in the literature, the transhumant cycle sometimes being known as *booleying*. Cattle seem to be the animal most frequently associated with booleying.

Constant herding was therefore necessary to attend to the dairying needs of milch cows. Other reasons cited for herding include protection of animals from wild predators, and the prevention of theft, clashes with neighbouring herds and trespass on tillage (ó Moghrain 1943, 161-6).

The transhumant cycle occupied the months from early May to late October although there were local variations in the timing. It began with men setting out to repair the shelters. This could include annual thatching (ó Danachair 1943, 165). The movement of animals to the pastures was accompanied in a single day and was an enterprise involving the entire family. Usually it was the young unmarried girls who stayed with the cattle (ó Danachair 1983-84, 36-8). However, oral testimony suggests that older members of the family might tend the summer pastures if the young were required for heavy work on the farm (ó Danachair 1945, 250). There seems to have been regular contact with the permanent homestead. Those at the booley returned for church services. Men visited the summer pastures to cut peat for fuel and, if conditions allowed, cultivate a crop of oats or potatoes (ó Danachair 1983-84, 38-9). Dairy products could have been taken home a few times each week. It is recorded that butter was produced during the journey home through the transport of milk in churns carried by horses (ó Moghrain 1943, 161).

Dairying equipment was kept at the booleys, where weaving, knitting and needlework were also undertaken (ó Danachair 1983-84, 38).

It is not easy to estimate the proximity of the booleys to the homestead (Aalen 1964, 70). It has been suggested that the summer pastures might be located up to ten miles distant, with an average journey of four or five miles (Ó Danachair 1983-84, 36). The frequency of contact with the homestead suggests that distances were often shorter rather than longer. On Achill Island off the coast of Co. Mayo, a cycle involving the successive use of three booleying centres in a single season is recorded requiring journeys of two to four miles (Ó Moghrain 1943, 169). Attributes particular to islands, and in this instance a small island, may lend particular characteristics to local transhumant activity.

Buildings assumed to be booleys tend to cluster in sheltered locations in proximity to a water supply close to areas of better drained pasture. Some, however, are surprisingly isolated and exposed (Ó Danachair 1945, 250; Aalen 1964a, 66 and 1964b, 41). Various forms of building ranging from round and oval through to rectangular are recognized. Measurements for these structures in the range of 4.5m by 3m are cited. Some are sub-divided, with pens and 'lazy beds' indicative of cultivation close-by (Aalen 1964a 67-8). Others are 'bee-hive' in form, around 4.5m by 3m, accompanied by smaller buildings; these are interpreted as habitations and storehouses for dairy products respectively (Aalen 1964b, 44-5).

Fortunately, the continuation of booleying into relatively recent times has allowed the identification of specific buildings with seasonal occupation. Such a building has been described on the

Galtee Mountains on the borders of Co. Limerick and Co. Tipperary (Ó Danachair 1945, 250-52). It may have been in use around 1875. It was a one room structure of drystone-build, measuring 4.9m by 3.7m, with walls 2m high rising to 3m at the gables. There was a stone-built chimney on the gable wall supported by a wooden beam between the side walls. Rafters of trimmed boughs were covered with sods and then thatched with rushes and heather. There was little furniture apart from stools, with pallets of straw as beds. Ruined booleys have also been recorded on Achill Island (Ó Moghraín 1943; Piggott 1954). Again they were of drystone-build, oval on the exterior but rectangular within, with approximate dimensions of 4.9m by 2.4m. There were storage compartments within the thickness of the walls. The buildings in one group had a single entrance in a long wall; those in another opposed entrances (Piggott 1954, 19-23). Some booleys had chimneys, while at others cooking was done in the open air. Formerly entrances were blocked with a bundle of vegetation although latterly wooden doors with locks were fitted (Ó Moghraín 1943, 164-5 and 168-70).

Booleying led to the establishment of permanently occupied homesteads at some locations in response to an increasing population in the seventeenth and eighteenth centuries (Ó Duilearga 1939, 297; Aalen 1964a, 65). On Achill Island, summer settlements became permanently occupied while permanent homesteads became seasonally used in response to crop failure, disease and pressure from the landlord (Ó Moghraín 1943, 165 and 170-1).

11.5 DATA FOR TRANSHUMANCE FROM SCOTLAND

Material on the practice of transhumance in Scotland has been conveniently drawn together by Fenton (1977) on whom the following account largely relies. The generality of the account belies the regional variation evident in the practice of transhumance which is highlighted by the work of Miller (1967b).

Until the 1700s the annual movement of stock to summer grazing grounds was integral to the subsistence farming economy of individual families. There is a dearth of historical data for the practice prior to the seventeenth century and only meagre references thereafter (MacSween 1959, 86-7; Fenton 1977, 124-5). Open field agriculture where several tenants held arable and grazing land in common underpinned the need for transhumance enabling the cultivation of crops to be balanced against the requirements of animal husbandry during the summer. Transhumance appears to have waned early in the Borders during the Middle Ages as monastic orders took control of hill grazing. It endured far longer in the Highlands where it was based primarily on the husbandry of cattle, continuing into the twentieth century on the Isle of Lewis (Fenton 1977, 124-7).

Its decline in the Highlands began with the increasing demand for cattle from the seventeenth century onwards for urban populations and the military. This gave rise to a market orientated rather than a subsistence based approach to hill grazing, geared to the export of cattle through droving. In the seventeenth and eighteenth

century, domestic subsistence-based transhumance existed side by side with stock transference controlled by landowners. However, by the late eighteenth century, landlords were exercising greater control over grazing grounds through the encroachment of permanent settlement and the development of sheep runs and deer forests. This began to erode the practice of subsistence-based grazing of seasonal pastures (Gray 1957, 97-8; Fenton 1977, 126-8).

Paradoxically, in the late eighteenth century, although the fundamental social and economic circumstances which supported the traditional system of subsistence-based transhumance were changing, local circumstances of increasing population often encouraged an expansion of the use of summer pastures (Fenton 1977, 133; Miller 1967b, 198). The decline of open field agriculture, which virtually disappeared by the 1850s, accelerated the decline of family-based transhumance as enclosure, improved cropping techniques and the more efficient production of hay made farms self-sufficient (Fenton 1977, 23-4 and 132-4).

Transhumance in Scotland during the period for which there are historical records was based on the family unit moving to the summer pastures with the stock. Men went first to repair the shelters, or *bothies*, on the grazing grounds, the women following later with the milk cows (Fenton 1977, 129). Although primarily family-based, it appears that servant girls could also tend the summer pastures, at least in the later days of the practice. Miller quotes a mid-nineteenth century traveller's description in which

three servant girls are described as resident on the shieling grounds during the summer months on the Island of Eigg (1967b, 167).

In addition to dairying, women undertook domestic textile production. Corn was grown around some sheelings, particularly those closest to the homestead. Since the growing period was longer than the normal period of stay, men were hired in April to tend the crop, warding off animals (Fenton 1977, 130). In the parish of Assynt on the north-west coast a surprisingly large number of shielings are described as producing corn in a 1774 estate survey. Physical evidence for this survives in the form of lazy-beds and clearance cairns. Many of the shielings were very close to and at the same altitudinal level as the homesteads, mostly not above 120m OD. The particular circumstances of this parish, including an unfavourable landscape and a high population level, probably contributed to the large number of shiels, two-hundred and forty-six, recorded in the 1774 survey, their proximity to the permanent farmsteads, and the emphasis on cultivation which seems almost to have turned some shieling grounds into outfields (Miller 1967b, 198-202).

On Skye people were on the summer pastures from mid-June to mid-August. Back at the main farm men tended crops, produced hay (although not particularly efficiently), and carried out maintenance and cleansing tasks (MacSween 1959, 82). Interestingly, sanitation

for humans and stock was seen as an advantage of the summer movement (Fenton 1977, 131 and 136-9).

Shieling huts or bothies were generally grouped together alongside streams or lochs. A two-fold division has been proposed with earlier huts round to oval in form, later huts four-sided and more spacious. Measurements of 8m to 9m by 3.5m are given by way of example for the later huts. Building materials included both turf and stone. Wigwam-type shelters of branches, wattle and turf as well as beehive huts are described (MacSween 1959, 86-7; Miller 1967b, 202-3 and 208-9; Fenton 1977 128 and 1340-6). Excavation of a shieling hut at Waternish on Skye revealed a mound representing three distinct largely turf-built huts, each with an associated hearth (MacSween 1959, 77-8). Ancilliary structures interpreted as pens and dairy stores have been described in association with bothies (Miller 1967b, 203 and 208).

It has been noted that the strategic siting of bothies could assist in maintaining the security of borders, regulating movement, and facilitate communications in emergencies (Miller 1967b, 209-10).

Perhaps because of poor management of hay production, provision of winter fodder for the large herds which could be sustained on the summer pastures was a problem (MacSween 1959, 82). To ease this problem the shielings were sometimes occupied through the winter by people who remained to look after dry cattle and horses (Fenton 1977, 129-30).

Distances between the homestead and the shielings are reported as varying from two or three miles up to twenty miles. Where longer distances had to be travelled, there were sometimes intermediate shielings where advantage was taken of spring grazing on the way to the more distant summer pastures (MacSween 1959, 81; Fenton 1977, 129). In some circumstances distances between homestead and shieling could apparently be much shorter. In Assynt Parish, one-quarter of the two-hundred and forty-six shielings were under half-a-mile distant, one-quarter were less than two miles off, one-eighth were between two and three miles distant, while only one-eighth were between three and five-and-a-half miles away (Miller 1967b, 202). The detail in the 1774 estate survey of the Parish is exceptional in allowing shieling grounds to be linked with homesteads. It is, therefore, unclear whether these figures are abnormal, reflecting the particularly difficult demographic circumstances of the Parish, or whether they would bear comparison elsewhere if a similar quality of information was available.

Some shielings in time became the base for permanent settlements (Fenton 1977, 124 and 129). This is well documented in the Parish of Assynt (Miller 1967b, 200), although the process was later reversed as the inhabitants of crofts on traditional shieling grounds were evicted back to the coast (Miller 1967b, 201). Proximity to the homestead may have encouraged the permanent settlement of shieling lands. Where these were remote, there is little evidence of them developing into permanently occupied farms (Miller 1967b, 208).

11.6 SUMMARY OF SOME SALIENT CHARACTERISTICS OF THE EVIDENCE FOR TRANSHUMANCE IN THE BRITISH ISLES

11.6.1 Introduction

It is clear that information on the practice of transhumance from northern England, Ireland and Scotland both complements and supplements that from Wales. This section will draw together aspects of this information in order to identify some characteristics which may amplify understanding of the practice in Wales, and its applicability to land-use in the survey area. There is, however, diversity of activity surrounding the practice of transhumance too, which should be recognized in order to properly appreciate the variability in the operation of the strategy through time and across regions.

11.6.2 Types of Transhumant Practice and the Character of the Evidence

Documentary evidence which provides some detail for the practices involved in transhumance does not become generally available until the seventeenth century or later. Even then its quality is poor and the information is often circumstantial and incapable of close analysis. However, it is possible to identify two practices which involve the use of a transhumant strategy exploiting seasonal pasture.

Firstly, in keeping with the widely recognized western European tradition (10.4.3 above), there is the movement of herds to

communally held pasture as part of a subsistence-based agro-pastoral economy, usually accompanied by a significant dislocation of people who go to live on the pasture temporarily breaking-up communities or families. It is this practice which is most often recorded historically in each of the regions surveyed.

Secondly, there is herding or stock transference which involves much less or no social dislocation. This is a mechanism particularly appropriate to large-scale sheep husbandry or the fattening of non-milch cattle. It could also be undertaken outside the context of subsistence-based farming by specialist herders to supply major markets, sometimes using hired pastures.

There is a grey area, mostly apparent in later accounts, between subsistence-based transhumant practices involving the dislocation of the family, and herding, still apparently subsistence-based, but requiring only a few retainers in residence on the summer pastures. Also movement by people to and from the pastures exclusively on a daily basis has been noted. It is worth considering that such forms of stock transfer with minimal social dislocation were always more prevalent as a transhumant tactic than records suggest, but have attracted less attention on account of their lesser impact on social organization.

Frequently accounts are inadequately sourced and may often be derivative. Information of the quality provided by the late eighteenth century survey of Assynt in north-western Scotland (11.5

above) or of the oral testimony from Ireland (11.4 above) is exceptional. In any event this information is late and relates to a period when traditional subsistence-based transhumance was in decline or operating in a modified form. There are problems too in many accounts with the perceptions of "life in the summer pastures" which patently are over-romanticised.

11.6.3 Regional Differences

Evidently there have been local and regional differences in the operation of transhumance. Some of these relate to the character of the buildings erected on the summer pasture and the number of people resident, the timing of journeys to and from the pastures, the details of activity at the pastures, as well as the dating of the decline of subsistence-based transhumance. On the other hand, there are broad similarities relating to the general socio-agricultural background to transhumance, the general character of the activity on the summer pastures and the parameters of the distances travelled.

11.6.4 Dating the Decline of Transhumance

The practice appears to have declined earlier in Wales and northern England than in parts of Scotland and Ireland. In Wales and northern England the decline of transhumance seems well-advanced by the end of the seventeenth century, although it lingered in places. It continued to be much more widespread in Ireland and Scotland into the nineteenth century, which accounts for the greater availability of historical data from these two countries.

11.6.5 The Socio-economic Context for Transhumance

The imperative to take advantage of the resources of more than one environmental niche underpins the transhumant practices described in the earlier sections of this chapter (10.2.5 above). An essentially family subsistence-based/peasant agriculture combined with a tenurial system which provided common grazing land characterises much of the transhumance described (11.6.2 above).

It is evident from the historical data that the disappearance of open field cultivation in Ireland and Scotland coincided with the rapid decline of transhumance (11.4 and 11.5 above). This underscores the important relationship between open field cultivation and the need to clear the arable land of grazing animals during the growing season, as a stimulus to the practice of transhumance.

Additional benefits of the practice include: the potential of seasonally available grazing to support more stock than could be sustained by the principal holding alone; matters of good health of animals and humans through access to fresh grazing and water; the opportunity to clean and repair buildings at the principal holding; and the capacity for freer and wider social interchange amongst peoples from scattered holdings drawn together on commonly owned summer pastures. In particular relations within families or clans, potentially weakened through the morcellation of clan land through partible inheritance, could be maintained through contact on summer pastures.

Factors stated to contribute to the decline of subsistence-based transhumance include crop failure, political and demographic changes, the demands of a urban/market economy for produce, an increasing emphasis on sheep husbandry, improved agricultural technology and the aspirations of landlords, as well as the disappearance of open field systems and the advent of enclosure. There is regional variation in the combination of reasons contributing to decline, in keeping with the regional variation in the chronology of decline (11.6.4 above).

11.6.6 The Character of Activity at the Pastures

Seasonal grazing, as most frequently described, largely seems to have been concerned with cattle although fowl and other animals, notably sheep, could also be tended. Cattle husbandry was often directed towards dairying, although interestingly non-milch stock could be tended on the pastures throughout the year to relieve pressure on grass and fodder at the principal holding. Specialised grazing of sheep on summer pastures does not seem to have had the same element of social dislocation and is better regarded in terms of stock transfer (11.6.2 above).

Elements of a family, or sometimes retainers, would be resident on the pastures. Sometimes a whole family might be occupied by the routines of transhumance, for example, the major movements to and from the pastures even if the entire family was not constantly in residence on the seasonal pastures. It is important to remember, that the principal holding would continue to require labour. In

addition to dairying, those living on the pastures protected and controlled the movement of animals. The romantic image of life on the summer pastures is countered by occasional hints of concerns about rustling, disputes over grazing rights and trespass on growing crops. Other occupations of those resident at the grazing grounds could include textile production, possibly iron-working, and some cereal growing and limited hay-making.

Numbers in residence on the seasonal pasture would be determined by the nature of the activities taking place at any given time as well as by distance from the principal holding. The frequency of contact between the principal holding and seasonally exploited grazing would be a relevant factor, also affected by distance. The distances involved were clearly highly variable. Very short distances of around a mile are noted, although three to five or six miles seems more typical while distances of up to fifteen or more miles are also mentioned. Such variation in distance would have generated local differences in the details of the operation of transhumance (11.6.3 above).

11.6.7 The Nature and Siting of Seasonally Occupied Shelters

Descriptions of seasonally occupied dwellings from each of the regions examined above emphasise the variety of structures and building-materials. Some, described as wig-wams or constructions of boughs and turves, are apparently no more than shelters with a one-season lifespan. Others, built of stone, may have been habitations used year after year with regular repair, although they

are often perceived as small and/or insubstantial presumably in relation to the buildings at the permanently occupied settlement. Sometimes there were associated structures to store produce or constrain animals.

Buildings on the summer pastures could be subject to individual ownership in contrast to the common ownership of the pastures themselves. This is in keeping with general characteristics of the ownership of those resources in upland environments which require an investment of labour (10.2.5 above).

Often the buildings are in sheltered positions close to running water, perhaps in a gully or valley. They may be located at the edge of common grazing sometimes apparently positioned to facilitate communication between those living on the pastures. This helped to demarcate boundaries, allowing greater control of rights of pasture which could be matters of contention as well as protecting stock from the predations of rustlers (11.6.6 above).

11.6.8 Transhumance as Part of Settlement Dynamics

Even during the relatively short period for which there is some documentary data, it is evident that in each of the regions transhumance contributed to the expansion of permanent settlement, with previously seasonally occupied locations becoming in time permanently settled. This process, however, was also reversible, sometimes with great rapidity as illustrated by the information from Assynt in Scotland (11.5 above).

CHAPTER 12: LAND-USE PRIOR
TO THE END OF THE SECOND
MILLENNIUM bc

12.1 INTRODUCTION

In this chapter and in *Chapters 13 and 14*, the archaeology and environmental data from the survey area will be discussed in terms of past land-use. The immediate context will be the southern Welsh uplands but, as noted previously (4.2 above), ideas based on data from more distant regions will be used to stimulate interpretation.

Discussion will proceed on a chronological basis. In this chapter the period prior to the end of the second millennium bc will be considered. So far, the only evidence from the survey area for activity prior to around 2000bc comes from the environmental record. In the early to mid-second millennium bc the cultural evidence appears to be restricted to the monumental cairns. Land-use from the end of the second millennium bc onwards will be discussed in *Chapters 13 and 14*.

12.2 THE UPPER PALAEOLITHIC

12.2.1 Introduction

Consideration of land-use during the Upper Palaeolithic is necessarily brief since there is no relevant data from the survey area and little evidence from the South Wales uplands as a whole.

12.2.2 The General Chronological and Environmental Context

The general division of material from the Upper Palaeolithic into earlier and later groups still holds good. This occurs either side of an apparent hiatus in activity, between around 18,000bc or

earlier and 13,000bc, coinciding with the maximum southerly extent of the ice advances of the Devensian Glaciation (Campbell 1977, 199). In Wales there is no certain evidence for human activity between c. 20,000bc and 11,000bc, although faunal remains have been dated to this period. Hence, there is the possibility of intermittent hunting close to the edge of the ice which would leave little trace (David 1991, 141).

Late Glacial climatic change in Wales is complicated with the onset of an initial period of warming, the Windermere Interstadial, dated to around 11,500bc followed by a return to sub-polar conditions during the Loch Lomond Stadial between around 9000bc and 8000bc (David 1991, 142 and 154). Generally, the Windermere Interstadial presents an open and arid environment between c. 11,000bc and 10,000bc although temperatures in Wales and the south-west seem to have allowed the development of birch woodland (Jacobi 1991, 129; David 1991, 142). There followed a less arid cooling phase with wooded environments, before a return to sharply colder sub-polar conditions and open landscapes during the Loch Lomond Stadial between c. 9000bc and 8000bc. (Jacobi 1991, 129; David 1991, 154-55). A megafauna which included mammoth, saiga antelope, red deer, and also *bos primigenius* and elk during the more wooded phase of the Windermere Interstadial, gave way to one in which reindeer and horse are known during the colder conditions of the Loch Lomond Stadial (Housley 1991, 26 and 37; Jacobi 1991, 129).

12.2.3 Data for the late Glacial From Upland South Wales

Cultural and faunal data from South Wales for the period is overwhelmingly derived from cave sites located close to the present-day coast. Its relation to environmental change is often unclear since the context in which the material was discovered is often uncertain. As a consequence of glacial erosion, evidence for any activity in the highland zone away from cave sites during the Devensian Glaciation or earlier has mostly been displaced. Only a few artefacts of possible late Upper Palaeolithic attribution have been found within and around the inland massif (Green and Walker 1991, 37-38; David 1991, 142 and 154-7).

There are two suggested Upper Palaeolithic findspots in the South Wales uplands; at Gwernvale, a valley floor location in the Black Mountains at the eastern end of the Brecon Beacons (Healey and Green 1984, 129) although doubt has been cast on its later Upper Palaeolithic attribution (J. Kenworthy *pers. comm.*); and possibly at Carn Fach, Rhigos, Mid-Glamorgan (fig. 12:1) (H. S. Green 1984, 31). Such finds suggest the possibility of activity in upland localities which might have extended into areas such as those covered by the survey.

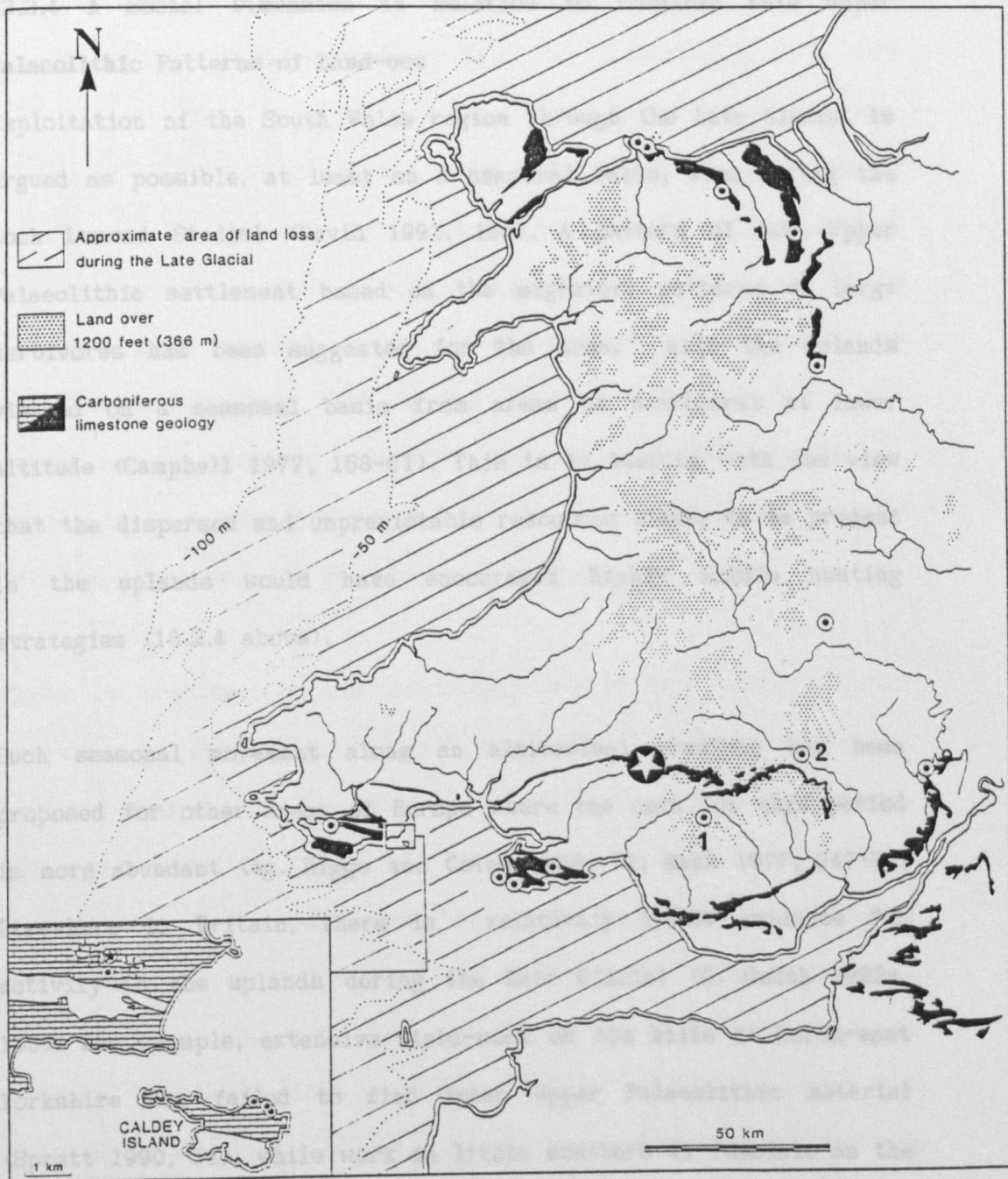


Fig. 12:1. Location of potential Late Glacial artefacts from Wales.
 1 = Carn Fach, Rhigos, Glamorgan. 2 = Gwernvale, Powys. ★ survey area
 (taken from David 1991, figure 14.1 with minor modifications).

12.2.4 A Social Dimension in Relation to Possible Late Upper Palaeolithic Patterns of Land-use

Exploitation of the South Wales region through the Late Glacial is argued as possible, at least on a seasonal basis, even during the Loch Lomond Stadial (David 1991, 155). A pattern of late Upper Palaeolithic settlement based on the migratory patterns of large herbivores has been suggested for the area, with the uplands visited on a seasonal basis from areas of settlement at lower altitude (Campbell 1977, 158-61). This is in keeping with the view that the dispersed and unpredictable resources likely to be present in the uplands would have encouraged highly mobile hunting strategies (10.2.4 above).

Such seasonal movement along an altitudinal gradient has been proposed for other areas of Europe where the data for this period is more abundant (eg. Higgs and Coles 1969, 71; Bahn 1977, 247-8). Elsewhere in Britain, there is relatively little evidence for activity in the uplands during the Late Glacial (C. Smith 1992a, 133). For example, extensive field-work on the hills of north-east Yorkshire has failed to find later Upper Palaeolithic material (Spratt 1990, 51), while work on lithic scatters in Teesdale on the edge of the uplands has produced just a small number of possible late Upper Palaeolithic tool forms (Coggins *et al* 1989, 171). Only summer "forays" into the uplands of northern England are suggested (Campbell 1977, 148-9; 169),

The actual evidence for the economic potential offered by the Late Glacial environment of south-west Wales is restricted to data from cave sites. There is a considerable diversity of faunal remains, mostly of terrestrial creatures (David 1991, 144). The multiplicity of sites used by hunters for different purposes is well-recognized (eg. Binford 1983, 109-43), and the caves may not be typical of the distribution of activity in the region, with many sites located on the land subsequently lost to the sea (fig. 12:1). Further, the animal remains may not always be the result of human predation. Hence, it is a large assumption that the faunal remains discovered in caves constitute the diet of the population.

There is nothing in this admittedly restricted, even distorted database, to suggest subsistence strategies or cultural material which can be linked to emerging social complexity (10.2.4 above), although a case has been made for the existence of both 'simple' and 'complex' hunting and gathering groups in north-western Europe during the Late Glacial (Keeley 1991, 188-9). It has been argued that there could have been rapid socio-economic changes in response to fluctuations in climate, with differently structured socio-economic groups sharing technological traditions which are indistinguishable in terms of the surviving record. It has also been pointed out that the sites most likely to show signs of social complexity, those close to marine resources, are the very sites which are no longer available for study (Keeley 1991, 188-90).

However, only a small number of relatively highly mobile human groups, possibly extended family units, are envisaged travelling extensive ranges with low population densities across southern Britain, including the subsequently submerged area (C. Smith 1992a, 165-7). Short term aggregation of such units towards a maximum band size of fifty to a hundred individuals has been suggested for other areas of northern Europe which have more plentiful data (Gamble 1978, 179-80). This would have occurred at a time of the year when resources were locally sufficiently abundant to support a concentration of population. Such aggregations would have provided opportunities for communally based subsistence activity, exchange and social interaction.

12.3 THE EARLY POST-GLACIAL - THE CONVENTIONAL MESOLITHIC IN WALES

12.3.1 Chronology

The Mesolithic in Wales, in common with the rest of Britain, has been divided into earlier and later phases (Jacobi 1980, 139). Earlier Mesolithic activity in Wales seems rather later in date compared to many other areas of the British Isles (Jacobi 1980, 146). While some material from South Wales could belong to the eighth millennium bc (Jacobi 1980, 159; David 1989, 242; and 1991, 157), locally colder conditions may have discouraged sustained activity until the seventh millennium bc (Stanton 1984, 45-46). Although it is probable that inland upland areas would have been exploited during the earlier Mesolithic, the actual evidence is

slight (fig. 12:2) (Jacobi 1980, 193). Some support for use of the Welsh uplands, however, can be derived from activity at altitude in Northern England (Jacobi 1978, 295-6).

Most of the diagnostic artefacts from the upland areas of Wales are of later Mesolithic form (fig. 12:3). The precise chronology of later tool forms is unclear in the Welsh context (Jacobi 1980, 174). It may be that they did not arrive in South Wales until 5500bc to 5000bc or later (Stanton 1984, 46). Recently published determinations for the later Mesolithic at Nab Head on the Pembrokeshire coast, of 5410±90 bc (OxA-860) and 4260±90 bc (OxA-861), confirm this dating and also indicate the potential complexity of the chronology of such sites (David 1989, 250-1). Later Mesolithic activity in the Brenig Valley, Clwyd, in the uplands of North Wales, has also been dated to the second half of the sixth millennium bc (Lynch 1993, 22).

12.3.2 The Economic Context

Earlier views of the Mesolithic in Wales as an overwhelmingly coastal phenomenon, with a primarily littoral economy (Wainwright 1963, 100-1), have been modified by the discovery of more sites of later Mesolithic attribution in the uplands (Jacobi 1980, 191), particularly in Glamorgan (fig. 12:3) (Stanton 1984, 35). However, it still seems that the areas around the present-day coast were much more intensively occupied than inland regions (Britnell 1984, 136; David 1989, 251), although the pattern of recent land-use and discovery may continue to distort the distribution in favour of

areas of lower altitude (Stanton 1984, 43-44). While maritime resources seem to have been important, they would probably have formed only part of a subsistence economy which also embraced inland terrestrial resources (David 1989, 251). The increased importance of gathering edible plants in the established woodland conditions of the Mesolithic has been emphasised (D. Clarke 1978, 14), while the diverse Post-Glacial fauna provided considerable potential for both hunting and trapping (Simmons et al 1981, 111-17).

Retardation of Post-Glacial vegetational change in Wales (2.3.2 above), and regional variation in the tree species, produced a forest canopy at the time of the Climatic Optimum in the sixth millennium bc which probably was less dense compared to many other parts of Britain. This would have been particularly marked at altitude creating favourable conditions for grazing, and hence for hunting browsing species such as deer and wild cattle (ApSimon 1976, 41; Jacobi 1980, 178). More intensive use of upland zones later in the Mesolithic may also have been encouraged by progressive loss of low-lying landscapes and estuary environments through marine inundation (Stanton 1984, 43), and by increasing population levels (Simmons and Innes 1987, 397). These factors probably combined to contribute to increased exploitation of the uplands from the sixth millennium bc.

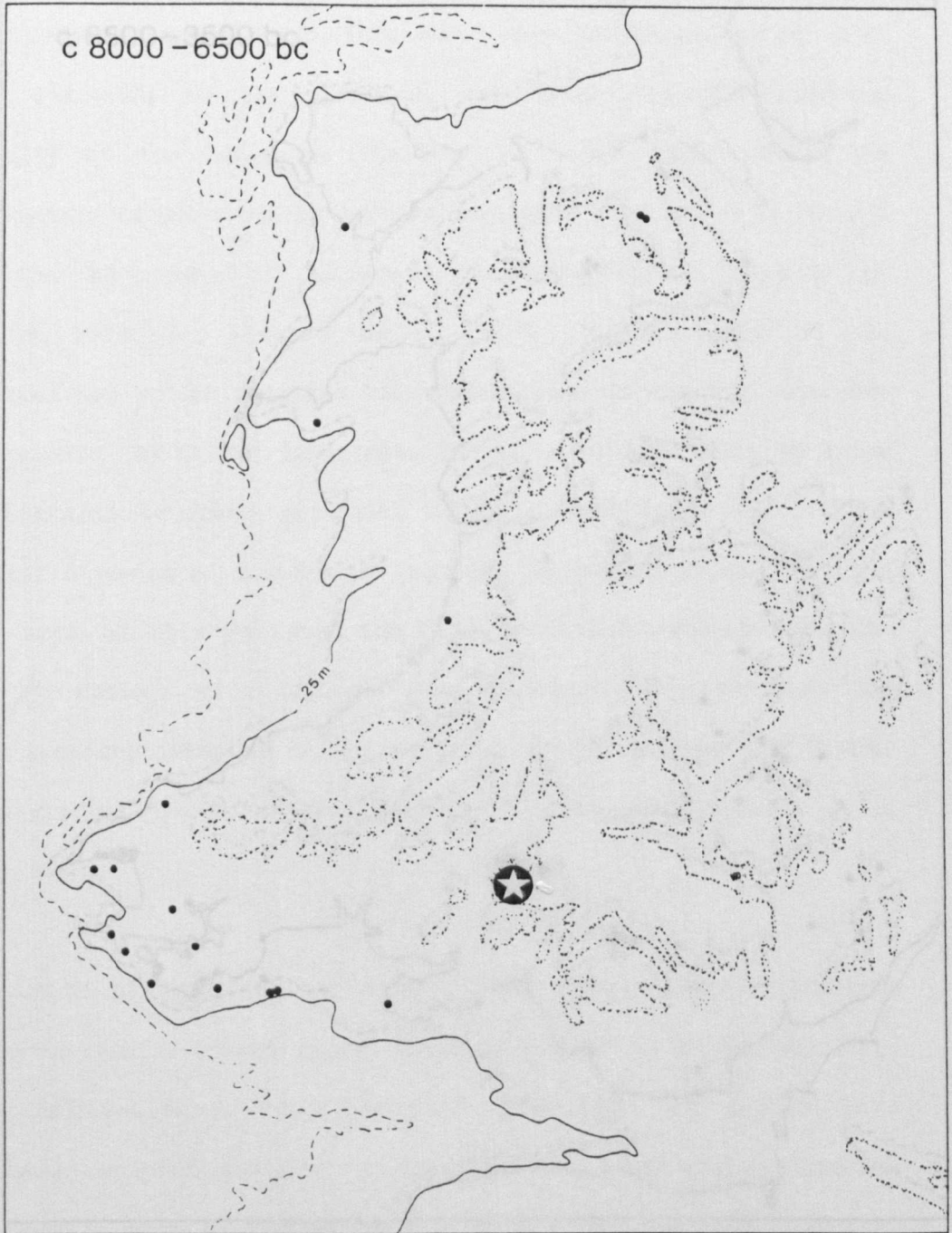


Fig. 12.2. Findspots of artefacts of potential earlier Mesolithic attribution from Wales.

★ survey area. Contour at 200m OD (taken from Britnell and Savory 1984, figure 62 with minor modifications).

Grazing could have been further improved by deliberate burning of tracts of landscape in order to clear or thin woodland and scrub

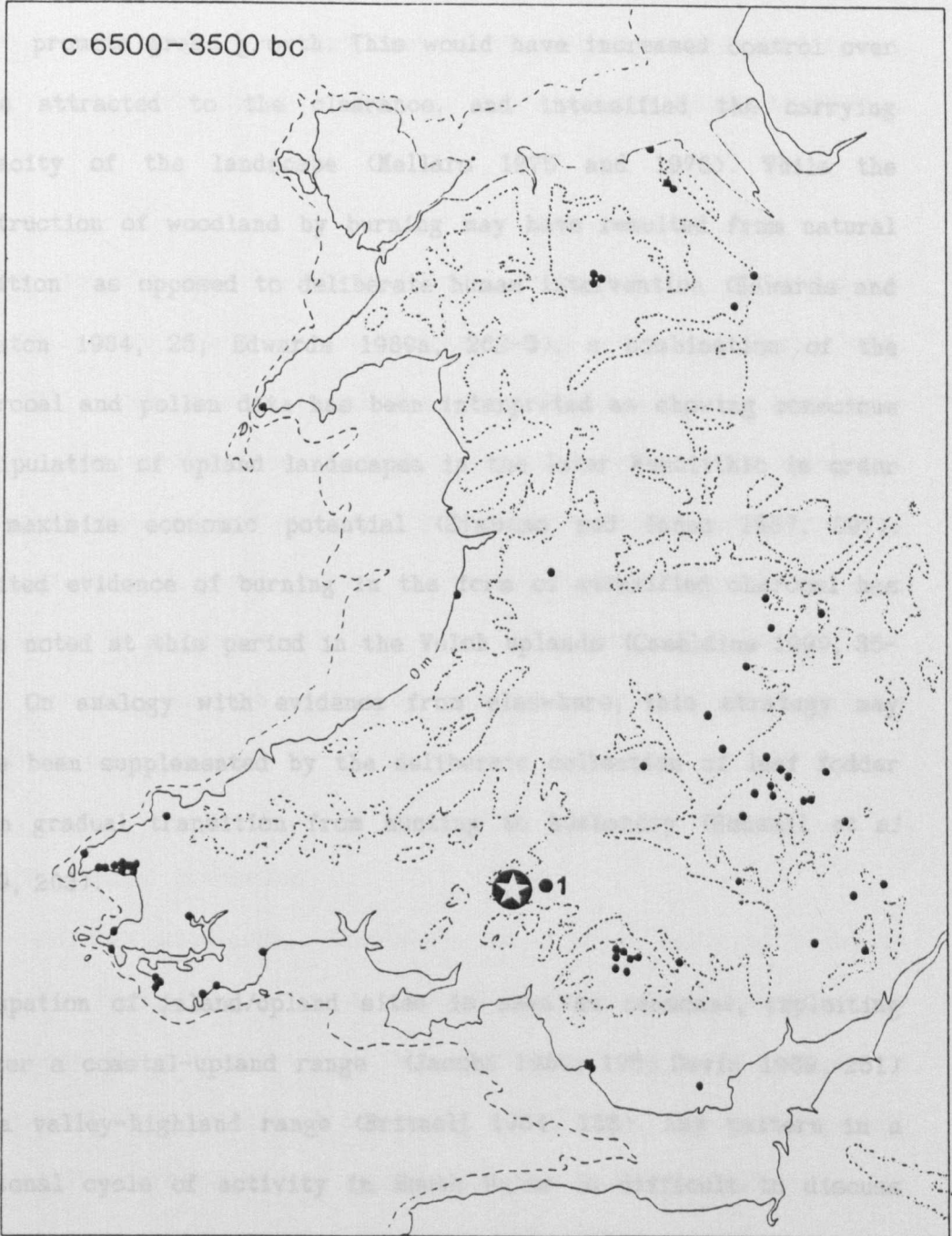


Fig. 12:3. Findspots of artefacts of potential later Mesolithic attribution from Wales. 1 = Waun-Figen-Felen, Powys. ★ survey area. Contour at 200m OD (taken from Britnell and Savory 1984, figure 62 with minor modifications).

Grazing could have been further improved by deliberate burning of tracts of landscape in order to clear or thin woodland and scrub and promote grass growth. This would have increased control over game attracted to the clearance, and intensified the carrying capacity of the landscape (Mellars 1975 and 1976). While the destruction of woodland by burning may have resulted from natural ignition as opposed to deliberate human intervention (Edwards and Ralston 1984, 25; Edwards 1989a, 262-5), a combination of the charcoal and pollen data has been interpreted as showing conscious manipulation of upland landscapes in the later Mesolithic in order to maximize economic potential (Simmons and Innes 1987, 397). Limited evidence of burning in the form of stratified charcoal has been noted at this period in the Welsh uplands (Caseldine 1990, 35-36). On analogy with evidence from elsewhere, this strategy may have been supplemented by the deliberate collection of leaf fodder in a gradual transition from hunting to husbandry (Bonsall et al 1989, 203).

Occupation of inland/upland sites is seen as seasonal, exploiting either a coastal-upland range (Jacobi 1980, 195; David 1989, 251) or a valley-highland range (Britnell 1984, 138). Any pattern in a seasonal cycle of activity in South Wales is difficult to discuss sensibly in view of the meagre and poorly dated evidence (Stanton 1984, 65). Star Carr in Yorkshire remains an important *inland* site with data which allows consideration of seasonality. The challenges, even at a site with such a thoroughly studied corpus of material, are well illustrated in the interpretation and re-

interpretations of the season(s) of occupation and the nature of the site, "base camp" or "hunting camp." It is now considered to have been possibly a hunting camp, most probably used only in the late spring and summer (Legge and Rowley-Conwy 1988, 38-39 and 93).

It is thought that for regions such as South Wales, upland sites are still more likely to result from summer activity (Jacobi 1978, 324-327), with groups exploiting seasonally available resources which complement those available in other zones. The scale of movement required, however, is likely to have been reduced compared to Late Glacial times (12.2.4 above) as a diversity of resource developed in geographically more proximate zones. These could have been visited through movements along a steeper but shorter gradient (10.2.4 above).

12.3.3 A Social Dimension

The deciduous woodlands, which were widely established in Wales by the later Mesolithic in the sixth millennium bc (2.3.2 above), would have provided a relatively settled environment compared to those of the preceding Late Glacial and early Post-Glacial epochs. Increased availability of foods from aquatic sources and woodland gathering contributed to a more stable resource base generally. This, coupled with loss of land through marine inundation, had the potential to reduce the degree of mobility required (12.3.2 above) and to lead to an increase in population density (C. Smith 1992b). However, there is only very little actual evidence in the archaeological

record to suggest either significant sedentary tendencies or that social organization developed beyond that of the extended family group of 'simple' hunter-gatherers (10.2.4 above) who periodically coalesced temporarily into larger bands (C. Smith 1992a, 179).

It has been suggested that the large number of early Mesolithic skeletons from the cave of Aveline's Hole in Somerset could represent a cemetery with implications of sedentism and social complexity (Zvelebil and Rowley-Conwy 1986, 75). There is certainly evidence for emerging social complexity during the later Mesolithic of northern and western Europe when cemeteries begin to appear (Chapman 1981, 75-6). However, it is claimed that the eighth millennium bc date for the Aveline's Hole burials is too early for the emergence of sedentary communities in Britain (C. Smith 1992b, 180).

Eventually, however, some social and economic response to environmental change and the postulated increase in population might be expected by around the time of the Climatic Optimum. The capacity at this period for a base to be continuously occupied at least in the short-term over several years in response to exceptionally favourable conditions has been recognized (D. Clarke 1978, 25). For example, on small islands only very limited movements could give access to the resources of a considerable circuit of coastline providing subsistence for a substantial part of the annual cycle, with fishing complemented by shell-fish collection and storage (Mellars 1978, 393-5; Mellars and Wilkinson

1980, 39-41). Although reliance on marine/aquatic resources has been seen as fostering a tendency to sedentism and social complexity (10.2.4 above), investigations at major coastal midden sites in Britain have been interpreted so far as suggesting only periodic exploitation (C. Smith 1992a, 155-6; 179-80). Generally, marine resources are considered important in the development of increasingly sedentary settlement and more stratified societies along the Atlantic periphery of Europe, but it is accepted that there would have been much variability in the scale and stability of groups from area to area according to local conditions (Zvelebil and Rowley-Conwy 1986).

Nonetheless it is important to acknowledge the probability, during the later Mesolithic at least, of a socio-economic dynamic which may usually be invisible in British data, but which culminates in a transition to more sedentary patterns of settlement and the adoption of food production around the fourth millennium bc. This is discussed further below (12.4.1 and 12.4.2).

12.3.4 The Survey Area

Focussing on the survey area, while no Mesolithic artefacts have been found so far, the palaeo-environmental sequence indicates the likelihood of human activity in the later Mesolithic. The woodland at higher altitude seems to have been fairly open towards the Climatic Optimum in the sixth millennium bc (2.5.4 above, *Phase 1*), providing conditions conducive to the development of good grazing grounds (12.3.2 above). Charcoal in *Phase 1* of the sequence,

prior to 4000bc, was seen as a possible indication of human intervention, while the more substantial quantities of charcoal in Phase 2 deposits, between c. 4000 and 3000bc, were viewed as strong evidence for human manipulation of the woodland to improve grazing (2.5.4 above). This is interpreted as one cause of the beginning of podzolisation and the creation of a heather heathland in the vicinity of the sampling sites. No charcoal-abundance curves were produced from the profiles sampled within the survey area (Cloutman 1983). These could have assisted evaluation of the later Mesolithic manipulation hypothesis by providing a comparative assessment of the extent of fires either side of this period (Edwards 1989a, 262-3).

However, important supporting evidence for the inference of human intervention comes from Waun-Fignen-Felen, about 4km east of the survey area (fig. 12:3), where the palaeo-botanical record has been intensively studied (Smith and Cloutman 1988). Limited excavation at this location has produced microliths, mostly of later forms but also including types appropriate to an earlier Mesolithic date (Berridge 1980).

In the palaeo-botanical study at Waun-Fignen-Felen, charcoal was found in almost all the basal deposits. A worked flint was found at a level in the basal mor dated to 5750±90bc (CAR-61) (Smith and Cloutman 1988, 198). Both podzolisation in the sixth millennium bc, and ombrogenous peat formation, as early as the mid-sixth millennium bc, but mostly towards the mid-fourth millennium bc,

have been described at this site (2.4.2 above). The extent to which this resulted from natural biological processes or anthropogenic factors is debatable (Webley 1978, 26-27). However, it is concluded that there was human exploitation of the area, including the deliberate burning of the vegetation, from as early as the sixth millennium bc, and that possibly this was influential in the establishment of heathland conditions (Smith and Cloutman 1988, 200-1). The extent of human impact on the landscape during the Mesolithic should not, however, be over-estimated, particularly when compared to influences exerted in later periods (Simmons 1975).

By way of summary, assuming that similar processes were at work in closely neighbouring landscapes, the environmental data from the survey area seems to indicate human activity during the later Mesolithic at least. On the basis of the chronology suggested for the local environmental phasing (2.5.4 above), it would appear to be later in date than that at Waun-Fignen-Felen, between 4000bc and 3000bc or a little earlier. As will be seen, this falls very much within the epoch of the transition to food production in the wider region (12.4.1 and 12.4.2 below).

Following current interpretations of hunting and gathering strategies in upland zones of relatively low productivity (10.2.4, 12.3.2 and 12.3.4 above), this activity is likely to have been seasonal in character. It also seems to have involved the deliberate improvement of grazing to promote and control stock. This may argue for a more sustained relationship with the area

than might result from random visits, an early adaptation, or indeed maladaptation in terms of any soil degradation consequential on the activity, to the challenges of exploiting the upland landscape (10.2.2 above).

Realistically, it is not possible even to guess at the distances over which, or the direction(s) from which, the presumed family based groups or bands travelled in order to exploit the necessary range of complementary environmental zones. The area is well served by river valleys connecting with the present-day coastal and estuarine zones to the south and south-west where Mesolithic activity is attested (figs. 1:1 and 12:3) (Jacobi 1980, 178-191; Stanton 1984, 43-44). It is also proximate to relatively extensive lowland areas in the broad Towy Valley to the north which could well have been exploited at this stage on analogy with the activity found at Gwernvale, Powys (Britnell 1984, 136-8). Only a little Mesolithic activity has, however, been identified in the Towy valley so far, at Abergwili close to Carmarthen well to the north-west of the survey area (Wymer 1977, 32).

The character of the remains of any settlement which might be discovered in the survey area is indicated by two examples from the uplands of North Wales. In the Brenig Valley, on the Denbigh Moors, Clwyd, firepits dated to the late sixth millennium bc were possibly associated with stakeholes, perhaps the remains of a windbreak (Lynch 1993, 22). At Llyn Aled Isaf, again on the Denbigh Moors, an unpublished site on which the writer worked as a

supervisor in 1974, a curved bedding trench and a shallow fire pit were associated with accumulations of burnt stone and a probably later Mesolithic flint assemblage.

12.4 THE CONVENTIONAL NEOLITHIC - BETWEEN c. 3000bc and 2000bc

12.4.1 The Mesolithic/Neolithic Transition

The advent of the earliest Neolithic in Wales should be considered against a background of thought which now emphasises the diversity of mechanisms by which food production and a distinctively Neolithic material culture may have appeared (eg. Case 1976; Dennell 1985a and 1985b, 169-189; Zvelebil and Rowley-Conwy 1986; Thomas 1988; E. Williams 1989). Challenging the traditional concept of agricultural colonists, the rôle of the hunter-gatherer in the development and/or adoption and spread of a food producing economy has been highlighted.

Husbandry of indigenous natural resources may have intensified and diversified during the later Mesolithic (12.3.2 and 12.3.3 above). Acculturation between hunter-gatherers and those already with a knowledge of agriculture could have led to the assimilation and adaptation of the new ideas, and the acquisition of novel resources such as plant and animal domesticates which were not native to the region. Coastal groups, who were anyway well placed to intensify exploitation of subsistence resources perhaps leading to the adoption of more sedentary life-styles (12.3.3 above), were probably well versed in in-shore seafaring and hence able to

receive and transmit new ideas, skills and resources. Food production and the various elements of the Neolithic material culture need not have emerged, or have been presented, suddenly as an integrated package of novelties; they could have travelled independently of population movement, and indeed of each other over a considerable period spanning the conventional later Mesolithic and earlier Neolithic.

It is difficult to invoke a single mechanism by way of explanation, particularly as identification of the transition phase continues to be difficult (Bradley 1978, 6). Evidence for subsistence which includes some food production, together with Neolithic cultural artefacts and monuments, begins to appear in the British Isles from around 3500bc (E. Williams 1989), although there is an anomalous pocket of apparently reliable but rather earlier dates around 3700bc from Ballynagilly in Northern Ireland (Kinnes 1988, 6). Radiocarbon determinations for the earliest indications of food production and distinctively Neolithic culture suggest an overlap with Mesolithic activity in the fourth millennium bc of at least three hundred years in Britain, and perhaps eight hundred years in Ireland (E. Williams 1989, 516).

This extended chronology supports studies in Ireland which conclude that a considerable degree of overlap and continuity is present between the conventional Mesolithic and Neolithic. This is interpreted in favour of the indigenous inhabitants playing a proactive part in spreading agriculture through the adoption of new

strategies and, by implication, down-grading the role of direct colonisation (Green and Zvelebil 1990; Peterson 1990). These views are tempered by a more cautious assessment, which while not denying some assimilation of Neolithic practices by Mesolithic communities, argues for passivity rather than an active rôle in the transmission of innovations (Woodman 1976, 303; 1986, 15-16).

Regional variations in the character of the transition are possible. For example, a local study of the Upper Kennet valley in Wiltshire concluded that it is necessary to invoke positive colonization to account for the arrival of agriculture in that area (Whittle 1990).

In conclusion, food production seems to be established in Britain by around 3200bc (Kinnes 1988, 6). However, the change from the conventional Mesolithic to the conventional Neolithic seems not to have been as abrupt as previously thought (E. Williams 1989, 516-19). Early attempts at food production may have been undertaken, either through innovation or emulation, by indigenous peoples for a considerable period prior to 3200bc. These initial endeavours may leave traces in the environmental record, for example the gathering of elm leaves as fodder (Bonsall *et al* 1989). Otherwise they are largely invisible since they did not apparently have an immediate impact on the cultural record. Movement by immigrants with developed food-producing skills may have been locally significant.

12.4.2 The Mesolithic to Neolithic Transition in South Wales

There has been no recent consideration of the Mesolithic/ Neolithic transition in Wales perhaps because, as has been noted, the nature of the evidence "makes the going tough" (Whittle 1989, 282). Colonization has usually been proposed to explain the arrival of Neolithic traditions, with movement largely from an easterly direction (Savory 1980, 214; Grimes 1984, 123-4). However, recent discussions of the complexities of the process are persuasive (12.4.1 above), and colonization alone is almost certainly too simple a mechanism. Further, it has been suggested that the knowledge of and resources for food production may also have come from the west, within an Irish sea "zone of interaction" in view of the apparently early dates for the Neolithic in Ireland (Green and Zvelebil 1990, 86). Some support for this can be derived from the character of some of the early chambered tombs in South Wales, the Portal Dolmens which have a dominant Irish Sea distribution (Lynch 1989, 4-5), although the other major tomb form, the Severn-Cotswold group, extends well to the east (Darvill 1982, 5-8).

In Wales the earliest dates for Neolithic material/contexts, all admittedly single determinations with largish standard deviations, seem a little later than the very earliest dates in other parts of the British Isles. There is a determination of 3290 ± 150 bc (NPL-223) for a settlement at Llandegai, Caernarvonshire (Houlder 1968); another of 3020 ± 95 (NPL-132) associated with domestic debris at Coygan Camp on the present-day shores of Carmarthen Bay (Wainwright 1967, 14); and one of 3100 ± 75 bc (CAR-113) from a pre-

cairn settlement at Gwernvale chambered tomb in the Black Mountains, Breconshire (Britnell 1984, 50-51 and 152). Significantly, the Gwernvale date was associated with evidence for food production in the form of emmer wheat and domesticated cattle, sheep and pigs, as well as Neolithic style pottery and lithics (Britnell 1984, 141-2). Monument building seems to have begun in South Wales by around 3000bc too. A determination of 3020 ± 80 bc (HAR-674) was obtained from human bone recovered from a chamber at Penywylod long cairn, again in the Black Mountains, Breconshire (Savory 1984, 29). However, as already indicated (12.4.1 above), the shift to food production probably began many centuries before the appearance of mature Neolithic cultural assemblages.

The environmental data for the period during which there was a transition to food production has already been considered (2.3.2 and 2.3.3 above). Although it is concluded that the decline of the woodland in the period either side of 3000bc is a consequence of human intervention, interpretation of much of the pollen data is inconclusive as regards the detailed character of land-use. The evidence for cereal cultivation, for example, is slight (Caseldine 1990, 43-4), and woodland clearances could as well have been made for hunting or husbandry of feral animals as for food production (Bradley 1978, 6-10). The transition can be viewed as gradual rather than radical.

12.4.3 Aspects of the Cultural, Economic and Social Context for the Later Fourth and Third Millennium bc in South Wales

The archaeological record of the early food producing communities in South Wales is dominated by the chambered tomb, the principal surviving monument (Grimes 1984, 123). The predominantly coastal distribution of tombs with an inland extension via the valleys at the eastern end of the Brecon Beacons, recorded in the earliest authoritative survey (Grimes 1936, 112-113), remains largely unaltered (fig. 12:4).

Lithic strays or scatters of presumed Neolithic date are also an indication of the intensification and expansion of land-use in the Neolithic, though knowledge of actual settlement sites is minimal (Savory 1980b, 212 and 227-8). Lithic distributions show that much early Neolithic activity took place in areas in which there is also evidence for Mesolithic hunter-gatherers, particularly along the coastal belt. However, there was also activity inland, including the Glamorgan hills where the general distribution of Neolithic lithics reflects that of the Mesolithic (cf. figs. 12:3 and 12:5). Valley locations at the eastern end of the Brecon Beacons, populated in the Mesolithic, also become the sites for early Neolithic chambered tombs (Britnell 1984). Archaeology, therefore, suggests some continuity across the Mesolithic/Neolithic cultural divide in terms of the areas most favoured for activity.

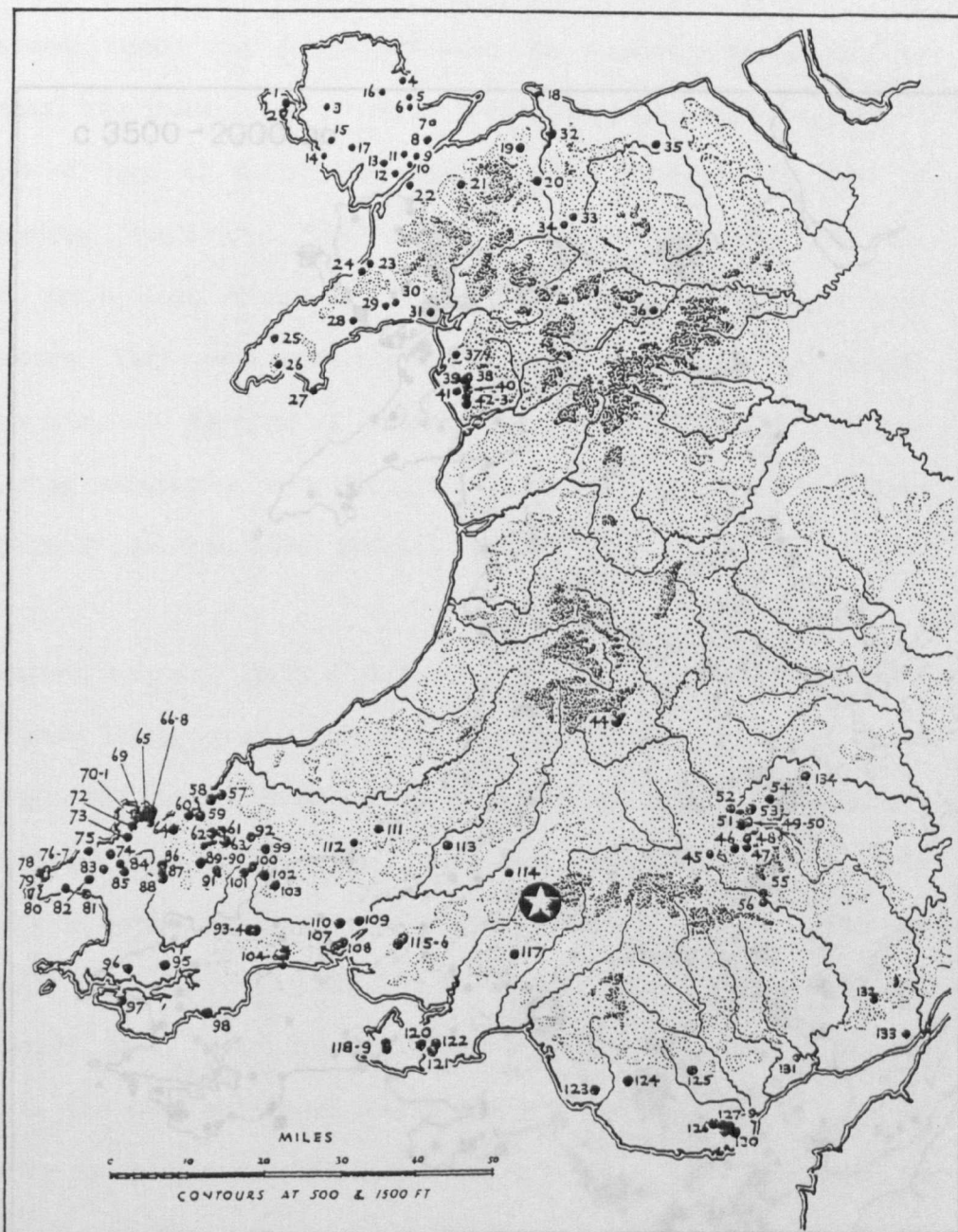


Fig. 12:4. Distribution of megalithic chambered tombs in Wales (taken from Grimes 1936, figure 4; ★ survey area).

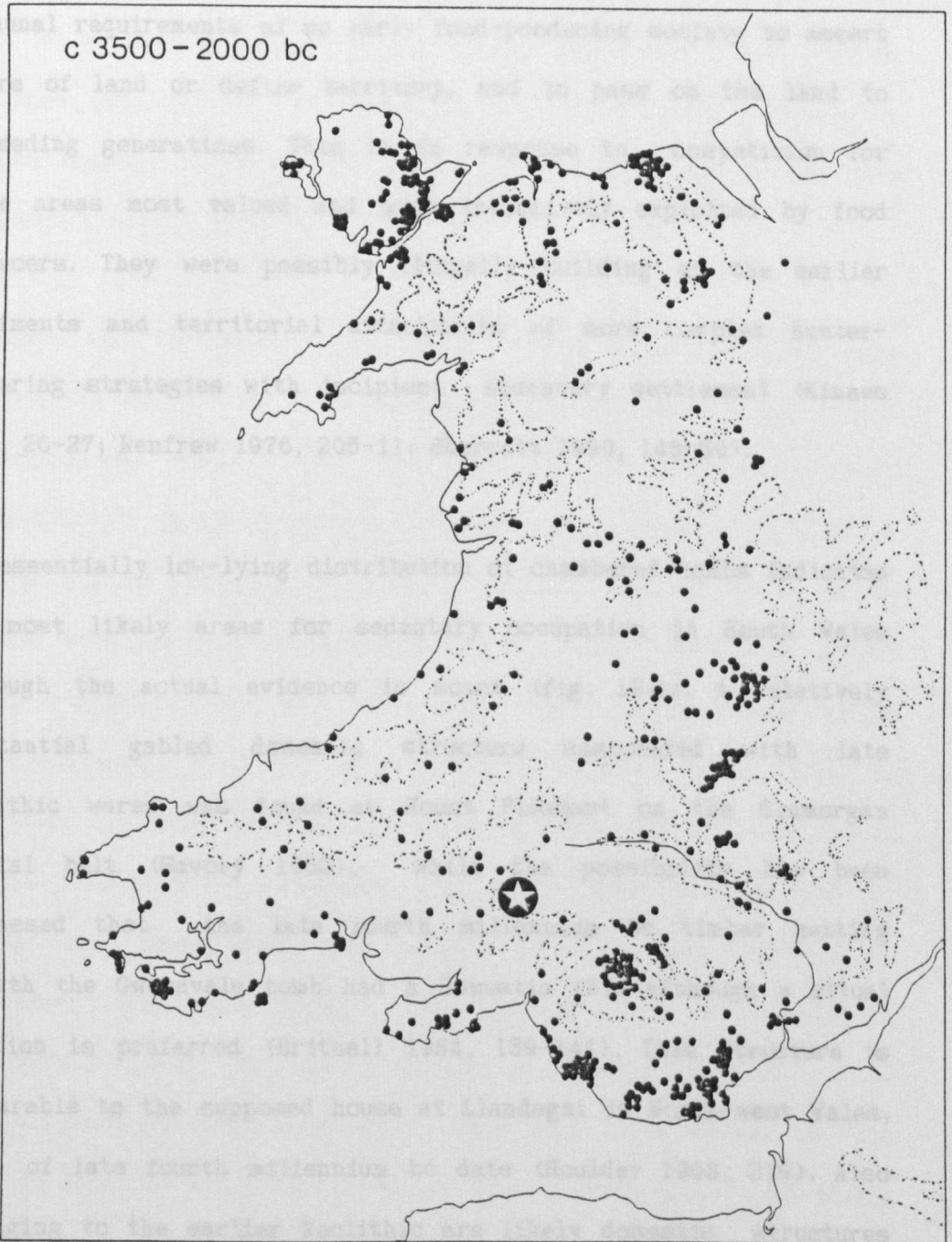


Fig. 12:5. Findspots of artefacts of potential Neolithic attribution from Wales. ★ survey area. Contour at 200m OD (taken from Britnell and Savory 1984, figure 62 with minor modifications).

Chambered tombs are frequently seen as a manifestation of the communal requirements of an early food-producing society to assert tenure of land or define territory, and to pass on the land to succeeding generations. This is in response to competition for those areas most valued and most intensively exploited by food producers. They were possibly literally building on the earlier sentiments and territorial attachments of more complex hunter-gathering strategies with incipient sedentary settlement (Kinnes 1975, 26-27; Renfrew 1976, 205-11; Sherratt 1990, 148-50).

The essentially low-lying distribution of chambered tombs indicates the most likely areas for sedentary occupation in South Wales although the actual evidence is scant (fig. 12:4). A relatively substantial gabled domestic structure associated with late Neolithic wares was found at Mount Pleasant on the Glamorgan coastal belt (Savory 1952), while the possibility has been canvassed that the late fourth millennium bc timber setting beneath the Gwernvale tomb had a domestic rôle although a ritual function is preferred (Britnell 1984, 139-141). This structure is comparable to the supposed house at Llandegai in North-west Wales, again of late fourth millennium bc date (Houlder 1968, 219). Also belonging to the earlier Neolithic are likely domestic structures from Clegyr Boia, Pembrokeshire (A. Williams 1952).

Settlement data at lower altitude may also take the form of simple agglomerations of post holes, pits and hearths. Such a site dated to the mid-third millennium bc has been excavated on Cefn Bryn on

the Gower Peninsula (Ward unpublished). Such evidence has been seen as reflecting the seasonal passage of mobile stock herders (McInnes 1971, 126-8). The important role of cattle in opening up wooded regions at this time generally in western Europe has been stressed (Fleming 1972).

Evidence for settlement sites from upland Wales is also very limited. So far, in terms of chronology, it belongs to the third millennium bc, rather later than the date for adoption of food production or Neolithic material culture in the region. In view of the paucity of evidence, no firm conclusions can be drawn as to whether this time-lag is more apparent than real. Only very slight timber structures have been found which offer some contrast to the more substantial buildings noted at lower altitude. These date to the later third millennium bc, either on the basis of radiocarbon determinations or associations with later Neolithic Grooved or Peterborough Wares, and are usually seen as the dwellings of transient populations (Webley 1958; Britnell 1982, 184-5; Clayton and Savory 1990). As noted, groups of pits and stakeholes probably indicate settlement too. Pits were found dating to the mid- to late third millennium bc at Moel y Gerddi, Gwynedd (Kelly 1988, 107), and to the late fourth to early third millennia bc in the Brenig Valley, Clwyd (Lynch 1993, 22). Such evidence from the uplands does not differ substantially in character or scale from that known for the conventional Mesolithic in Wales (12.3.4 above).

Although regional as well as local patterns of communication or exchange have been argued on the basis of stone-axe studies (Darvill 1989), the early food-producing communities of South Wales have not so far been shown to combine in the more conspicuous communal enterprises witnessed in the monumental architecture of causewayed enclosures, and subsequently of major henges (Renfrew 1973). These are found in other parts of Britain, including North Wales, where the Llandegai henge complex of early to mid-third millennium bc date has been linked to local stone-axe production (Houlder 1976). Also, so far, there is no evidence of nucleation or defence of settlement in the region. The impression given, therefore, is one of relatively low levels of social cohesion between family-based groups, reflecting the capacity of the region to accommodate and sustain a population without increasingly hierarchical social and economic management.

There is little direct evidence for the character of the subsistence base from anywhere in South Wales. Emmer wheat and barley, together with various wild food sources, have been noted, while cattle, sheep or goat, and pig have been recorded together with a continued contribution from hunting (Caseldine 1990, 47-51). Evidence for Neolithic cereal cultivation within the interior of Wales is limited (Savory 1980b, 214-4) while pollen analyses indicate species which can be associated with pastoralism (Caseldine 1990, 43-4). This has led to animal husbandry being awarded a pre-eminent position in the early agricultural exploitation of the upland massif of South Wales (Webley 1969),

although there is a lack of actual evidence for the type of early domesticates (Britnell 1984, 138) which, unfortunately, is in keeping with the dearth of information nationally (Wodde 1989c, 187-94). Also, there may be particular problems in the interpretation of the pollen record close to woodland margins (Edwards 1982). Small-scale "gardening" activity may not be easily detected.

In Mid-Wales differential patterns of land-use have been argued between valley floors and upland locations in order to support a view of a mixed agricultural economy (P. D. Moore 1981), based on a transhumant system evolved from Mesolithic seasonal movements (Savory 1980b, 217). The same has been proposed for South Wales and the Marches (Webley 1976, 28-31). The practice of summer grazing has also been invoked to explain early Neolithic activity in the uplands of other parts of Britain, for example the Lake District (Bradley and Edmonds 1988, 204).

Although tombs probably ceased to be constructed around the middle of the third millennium bc (Lynch 1976), there is little else in the archaeological record of the region, as it currently stands, to support the view of major dislocation during the third millennium bc occasioned by declining temperatures in relation to continuing relatively high precipitation (2.2.3 above) (Whittle 1980a and b). Possibly the demands of food production had impinged less on the resources of the area compared to other regions so that it could better withstand a less favourable climate.

12.4.4 The Survey Area and the Change to Food Production

The uplands surrounding the survey area have so far yielded few Neolithic artefacts (fig. 12:5). Nor is there much evidence for Neolithic activity in the Towy Valley to the north, although the gravel terraces of the valley might have been a natural focus for settlement (Williams 1984, 186). The only monument of potentially Neolithic date in the Towy Valley is a small undated hengi-form earthwork at Nantgaredig which is well west of the survey area (Williams 1984). If associated with Neolithic traditions, this, of course, would be of later rather than earlier Neolithic attribution.

The relative absence of megalithic tombs in the hinterland around the survey area is noticeable from Grimes' 1936 publication particularly as the character of the few possible sites is very uncertain (fig. 12:4). The status of site 114 in this distribution, a mound near Llangadog in the Towy Valley is problematic since no chamber is visible (Daniel 1950, 209). Site 117, near Carn Llechart, West Glamorgan, has recently been deemed only a possible tomb (RCAHM 1976a), while being rejected outright by Daniel as a natural collection of stones (1950, 211). Sites 115 and 116 on Mynydd Llangyndeyrn, south-east Dyfed, are simple and undistinguished structures (Grimes 1936, 131) which have been described as sub-megalithic (Daniel 1950, 47-8 and 207). Therefore, the chambered tombs closest to the survey area which are of certain earlier Neolithic form are clustered across the Brecon Beacons in the Usk and Wye valleys to the east, and on the Gower Peninsula to the south-west.

Consequently, as with the Mesolithic, recourse to the environmental data from the survey area is necessary. Reduction in woodland cover on the summit ridges had begun early, perhaps as early as the fifth millennium bc (2.5.4 above). The subsequent phase in which the decline of woodland, including elm, spread to the slopes within and around the survey area is prolonged, from c. 3000bc to 1300bc (2.5.4 above, *Phase 3*). There are episodes of woodland regeneration, and the continued dominance of arboreal pollen on a regional basis is confirmed by Trotman's work at an adjacent sampling location (2.5.5 above). Human activity within the survey area after c. 3000bc is thought to account, at least in part, for the peat formation on summit ridges over areas of heathland created by earlier woodland decline. Regionally, on the lower slopes and zones adjacent to the survey area, limited woodland clearance may also indicate human interference (2.5.4 above, *Phase 3*) which could include coppicing (2.5.5 above). The extended duration of this phase poses problems in correlating environmental change with the wider archaeological record on account of the few absolute chronological markers in the sequence.

Caution is also necessary when assessing the significance of the prominent decline in elm amongst arboreal pollen in the locality. The beginning of its decline around 3000bc is consistent with evidence elsewhere in the region (2.3.3 above). Cloutman's interpretation of the phenomenon as one which is primarily anthropogenically triggered (2.5.4 above), accords with some but by no means all of current thinking (2.3.3 above). The nature of any

human contribution to the particularly marked decline of elm remains open to debate (2.3.3 above). Human interference may well have had no more impact on elm than on any other arboreal species; in the case of elm, quite possibly anthropogenic influence was exacerbated by other factors such as disease.

There is no cultural evidence which can help characterise the inferred anthropogenic influence on the vegetational and pedological changes around 3000bc. Although food production is recognized in South Wales by this date (12.4.2 above), the attribution of environmental change specifically to new subsistence practices cannot be taken for granted (Bradely 1978, 6-10; Kinnes 1988, 2-3). Continued hunting and gathering in the area through a transitional period of extended duration (12.4.1 above) may have contributed to changes in the environment.

The two cereal-type pollen grains noted from early in the *Phase 3* at Pen-Rhiw-Wen could be taken as suggestive of arable farming/gardening involving some regional woodland clearance. However, the weight which can be attached to interpretations based on such slender evidence is doubtful in view of the challenges of distinguishing cereal pollen from that of wild grasses (Edwards 1989b; Kinnes 1988, 3). Animal husbandry seems the most likely form of exploitation once the area begins to be used for food production.

This proposition is made on the basis of a number of factors. These are: the local palaeo-botanical evidence which suggests grazing of the heathland on the summit ridges (2.5.4 above, Phase 3); further reductions in woodland in the area during Phase 3 of the palaeo-botanical record, in the context of a view which considers grazing to be particularly significant in deforestation of the uplands (Fleming 1972, 186); the current emphasis on animal husbandry in relation to early food production in upland Wales as a whole, albeit on slight evidence (12.4.3 above); and a general appreciation that animal husbandry is particularly appropriate for upland environments since the mobility of stock allows the resources of several zones of relatively low productivity to be combined (10.2.3 and 10.2.6 above).

12.4.5 Animal Husbandry and the Transition to Food Production in the Uplands

Progress towards understanding the transition to food production in upland areas such as that surveyed can perhaps best be made by distilling the various views on the process of transition (12.4.1 above) into deliberately simple but clear ideas which can generate further debate. Two core ideas are suggested for a perhaps prolonged period of transition to food production in the uplands during the fourth millennium and perhaps early 3rd millennium bc.

Idea One

Firstly, there may have been a transition in which hunter-gatherers are "displaced" from the favoured coastal lowlands and perhaps some inland areas by peoples already possessing the essential attributes of a food-producing economy. This prompts intensification of hunting and gathering within the less-productive interior, both at altitude and in the remoter valleys of the massif. This contributes to the extension of the woodland clearance apparent in the palaeo-botanical record in these areas, which continues to be undertaken in order ^{to} promote the hunting of feral animals (12.3.2 above).

In time these communities begin to assimilate food-producing skills through contact at an interface between the two practices. The mobility of domesticated stock, exchanged, stolen or strayed, make them good candidates for that interface although the potential complexities of the process are not to be underestimated (Davidson 1989).

Stock management, as opposed to arable farming, may have attracted the interest of the indigenous inhabitants because the necessary skills and natural resources to some extent reflected those required for the husbandry of feral animals. Further, experimentation with stock management could have been undertaken without necessarily interrupting seasonal hunting and gathering movements thereby rendering the risks of innovation more acceptable (10.2.2. above).

Seasonal movement between grazing on relatively open high altitude landscapes and browsing in the more heavily wooded areas at lower altitude is in any event likely since exploitation of a single zone in an upland environment would probably have been unsustainable (10.2.3 above). Increasingly widespread woodland browsing therefore resulted which, in the context of the survey area, could explain the advent of on-going regional woodland clearance in circumstances in which there is minimal evidence for cereal cultivation.

Idea 2

Secondly, there may have been a Mesolithic/Neolithic transition in South Wales in which there was a greater role from the outset for the indigenous hunter-gatherers in the initiation of food production, assimilating novel ideas and the additional resources necessary from outside the region. Established patterns of seasonal movement along an altitudinal gradient between coastal or estuarine lowlands and adjacent hills (12.3.2 above) could have been perpetuated through a transitional phase. These could, through time, have become less concerned with hunting and gathering and more concerned with livestock husbandry. This, over the centuries, may have led to reductions in woodland in an intermediate zone of passage between the landscapes at lower altitude, which favoured incipient sedentary settlement, and the higher hills and ridges where there was already seasonally available pasture as a result of the reduction of tree cover to promote grazing for feral animals.

As noted above (12.4.3), there is evidence in both the upland and lowlands for settlement which may be only transient in character.

These ideas are not proposed as simple alternatives. Rather it is suggested that permutations of both processes may have operated within the region according to local circumstance. The model developed by Gregg for central Europe (1988) well illustrates the complexities of interaction between early food producing and hunting and gathering strategies.

However, both ideas highlight a requirement for continued indigenous Mesolithic influence in the exploitation of the survey area and similar upland landscapes. This influence is most likely to have revolved around stock management in which traditional knowledge of the husbandry of feral animals and the seasonally available resources of the uplands would have been important. The influence of traditional knowledge and experience in making decisions about subsistence strategies in unpredictable circumstances has already been recognized as an important principle (10.2.2 above).

12.4.6 Early Food Production in the Uplands in a Post-transition Phase

The duration of the transitional phase may have been variable in different parts of South Wales, and although a mature Neolithic cultural/food producing package appears at Gwernvale, Breconshire, before 3000bc (12.4.2 above), it may have been more prolonged

elsewhere. Certainly the lack of Neolithic monuments and material culture both in and around the survey area and many similar landscapes illustrates that the scale of activity in the uplands after 3000bc should not be over-estimated. However, the more frequent appearance of transient settlement structures in the uplands later in the third millennium bc may indicate an intensification of exploitation of these landscapes with time (12.4.3 above). As noted, Neolithic exploitation of the Welsh uplands Wales has commonly been related to transhumance (12.2.2 above). How does the data fit this view?

Transhumance has been discussed at two levels (10.4 above). At a general level it has been defined as a regularly recurring seasonal cycle to exploit pastures. This embraces a diversity of husbandry practices including nomadism and impermanent settlement. More restrictively, it has been seen as closely linked to sedentary subsistence agriculture, where an element of the population moves away from a permanent homestead to tend stock on seasonal pastures. As has been noted, it is particularly difficult to distinguish in the archaeological record between nomadic transhumance and transhumance which is integral to an agro-pastoral regime (10.5 above). There is little in the archaeology early food producing communities in South Wales which furthers the analysis particularly in view of the dearth of information on the domesticates involved.

Following on from the core ideas proposed for the adoption of food production in the region (12.4.5 above), there may have been a continuation through the third millennium bc of the dichotomy between those in lower-lying landscapes who practised food production at an early date, and those in the uplands who took to it rather later, but both perpetuating seasonal movements to a greater or lesser extent.

Some elements of the population of sedentary communities occupying substantial structures similar to those few recorded by excavation at low altitude (12.4.3 above) could have made an annual movement to the uplands, as well as other areas containing seasonally available pasture and browsing. Indigenous inhabitants displaced to the interior, who came late to food production most probably focussed on stock management, may have perpetuated more highly mobile strategies with still greater communal participation in response to the seasonal patterning of resources within and around the upland massif (10.2.5 and 10.2.6 above). The indications of transient settlement from upland Wales later in the third millennium bc (12.4.3 above) could be the product of either practice.

It has been suggested that grassland would not have been sufficiently developed during the third millennium bc to support strategies weighted towards the animal-end of the agro-pastoral continuum discussed in 10.2.5 above. Also there is debate as to human tolerance to a regime which included a significant dairy

element during the early phases of food production (Sherrat 1981, 276-7; 1983, 94; Legge 1981 and 1989; Entwistle and Grant 1989, 205-7; Clutton-Brock 1981). This, however, is to ignore the resources offered to stock by woodland browsing, the contribution to the human diet of blood collected from living animals (Ryder 1981, 194-5), as well as a continued input from hunting and gathering. Further, it has been noted that those in upland regions usually integrate with wider regional economies (10.2.5 above), and "pastoralists" may have access to arable products even if they are at a point in the farming continuum where they do not themselves undertake arable farming (10.2.5 and 10.2.6 above). Stone-axes are unlikely to have been the only commodities involved in regional "exchange"!

In conclusion, the importance of social and economic mobility after the transition to food production in South Wales should not be underestimated and is worth further consideration.

12.4.7 A Social Dimension

The absence of tombs from landscapes such as the survey area must reflect on communal perceptions of ownership and attachment (12.4.3 above) as well as economic use. This is not to say that uplands did not possess an "identity" or hold a "meaning" for those using them (Roberts 1987, 79), only that the process of managing the landscape and regulating human activity could be achieved in non-monumental ways, probably using natural characteristics and places figuring in oral tradition (Fleming 1990; Bradley 1991).

Such means of regulation, together with low population levels in relation to natural resources must have helped minimise competitive pressures across much of southern Wales through most of the third millennium bc. Such factors linked to the contrast between the complementary resources of the lowland and upland zones, and the adaptive exploitation of these zones through degrees of social mobility may have contributed to the ability of the region to sustain a population which was not required to develop the increasingly hierarchical social and economic control evident elsewhere, even in the face of changing climatic conditions (12.4.3 above).

12.5 LAND-USE DURING THE EARLIER SECOND MILLENNIUM bc

12.5.1 Introduction

The monumental round cairns are the earliest non-environmental evidence for human activity in the area. They were probably built during the early to mid-second millennium bc or a little later, the conventional Earlier Bronze Age (5.2.5 above). The funerary functions and potential cultural associations have been described (5.2.4 above). They were mostly constructed on summit ridges which were largely heathland and largely devoid of trees (5.2.6 above). Round cairns are only one of a number of ritual and ceremonial monuments which are found across the Welsh uplands. However, this diversity of monument-types is absent from the survey area (5.2.7 above).

12.5.2 The Funerary Cairns of the Second Millennium bc

It has been argued that, taking into account destruction of monuments on agricultural land, cairns and barrows originally clustered most densely along the coastal lowlands with only scatters of sites inland (Roese 1980-82). However, their distribution does clearly represent a major advance of monument building into inland and upland areas in which monuments of the late fourth and third millennium bc are rarely found (cf. figs. 12:4 and 12:6) (Lynch 1980, 235). This distribution was probably attained over a period of six or seven hundred years (5.2.5 above). The monumental cairns in the survey area are evidently part of a wider phenomenon in the hinterland (fig. 12:6).

Within the interior massif, the monuments are in various topographical locations, for example, valley floors and slopes, passes, ridges and summits. However, taking account of the sites along the coastal belt, there seems to be an overall preference for lower lying as opposed to high altitude locations (Roese 1980-82). This lends significance to the prominence of the sites chosen at altitude for most of the monumental cairns in the survey area (5.2.2 and 5.2.6 above).

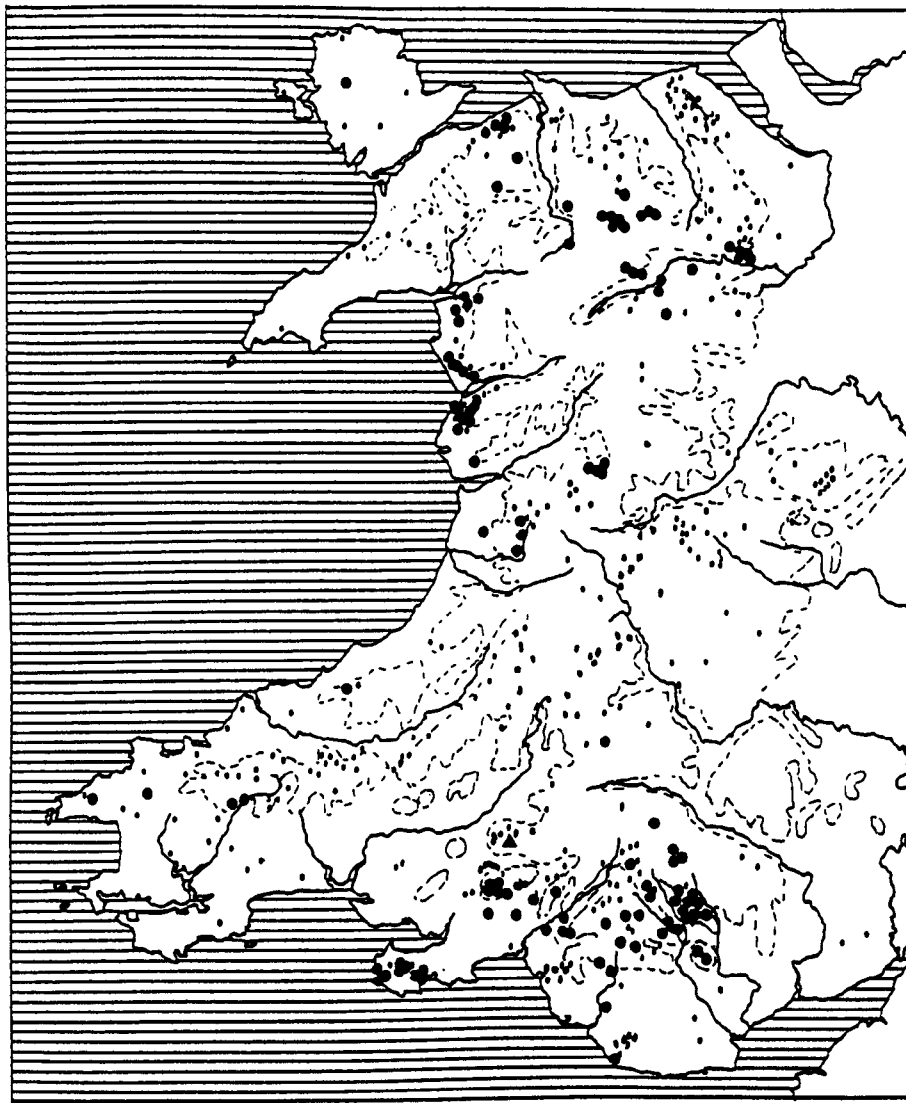


Fig. 12:6. Distribution of cairns, barrows and ring cairns in Wales (taken from Lynch 1972, *figure 5* with minor modifications).

● ring cairn; ◆ five or more barrows or cairns; ▲ survey area

The construction of the cairns is on a scale which lies within the capacity of a small social group, such as an extended family unit, perhaps sometimes undertaken on the basis of reciprocal collaboration with other similarly sized units. The status at least sometimes apparently invested in deceased individuals through grave goods (Burgess 1980a), is likely evidence for increasing social awareness and differentiation in the region compared to the preceding epoch (D. V. Clarke et al 1985, 80-128).

12.5.3 Farming Regimes in the Earlier Second Millennium bc

Considerable regional diversity for the subsistence base at this period is indicated by the rather uneven data available (Burgess 1980b, 193-264).

In the uplands of prehistoric Britain, mixed-farming regimes have been recognized as possible, with cereal growth practical at altitudes in excess of 300m OD, even up towards 500m OD in favourable local circumstances (Fleming 1976, 365-67). The likelihood of such cultivation has been suggested for the Welsh uplands during the second millennium bc (Briggs 1985, 295-302). Recent pollen analysis of material derived from the excavation of the cairns of Pen-y-Fan and Corn Dû located at around 880m OD in the Brecon Beacons indicates grazing at the summits with cereal cultivation in the vicinity (Gibson 1993, 35). Only preliminary information is available so far, and the character of the data and its catchment area need close definition in order that the land-use significance can be assessed.

However, animal husbandry continues to be favoured as a likely basis for economy and settlement in the second millennium bc in the Welsh uplands (Lynch 1980, 239), as well as some other areas of southern Britain (Fleming 1971b). This is in keeping with the view that, although cultivation was widely practised (Burgess 1980b, 252-3), it was only on a modest scale until the end of the second millennium bc (Entwistle and Grant 1989, 203-5), so that the agro-pastoral continuum continued to favour animal husbandry with consequences for social organization and settlement patterns.

Pastoralism, with its implications of mobility across grazing grounds, has been proposed to explain both the widespread distribution of burial mounds, and their clustering in 'home areas' (eg. Fleming 1971b, 159-164) although the location and character of the actual settlement within such areas is largely unknown. Evidence for settlement continues to be sparse in Wales. Where structures are discovered, most frequently beneath burial sites (Burgess 1980a, 276-77), they continue to be as insubstantial as the dwellings of the third millennium bc, with implications of continuing transient settlement (12.4.2 above).

With advent of the conventional Bronze Age in Wales, there seems no reason at present to suggest anything other than continuity in terms of the essential character of agro-pastoral subsistence from the third into the earlier second millennium bc (12.4.6 above). Exploitation of seasonal pastures can still be invoked to explain how an important herding element articulates with a degree of

cultivation (Fleming 1971b, 161-2). A particularly important rôle has been attributed to transhumance in the context of South Wales in the early second millennium bc (Webley 1969, 289-90). This includes long distant pastoral cycles, creating links between adjacent regions such as the west of England and the Welsh Marches (Webley 1976, 26-32). However, although there may have been apparent continuity in the character of subsistence strategies, there may through time also have been subtle changes in socio-economic perception of areas of upland landscape and their use (12.5.5. and 12.6 below).

One thing certainly does not change with the advent of the conventional Bronze Age - the difficulty of finding archaeological data demonstrating the rôle of animal husbandry. Direct evidence continues to be sparse (Noddle 1989c), although across southern Britain the importance of cattle husbandry is occasionally indicated by, for example, possible leather working tools from graves (Fleming 1971b, 160-1; Allen 1981, 104-6); or 'head and hoof burials', which are found in both Neolithic and Early Bronze Age contexts (Robertson-Mackay 1980, 147-8); and the spectacular *hecatomb* of over one hundred and eighty bull cattle skulls from the Beaker burial mound of Irthlingborough, Northamptonshire (Halpin 1987; Bedlow 1991; Davis and Payne 1993).

The significance of cattle may relate both to the concerns of subsistence, and the symbolism of ritual which may not be readily separable from every-day economics (Grant 1991). However, pastoralism is still usually only inferred, drawing on the

advantages derived from the exploitation of livestock for 'secondary products' (Sherratt 1981 and 1983), and the debate as to whether early food producing subsistence based very largely on dairying was possible is still relevant for the earlier second millennium bc (Legge 1989, 226-36 *contra* Entwistle and Grant 1989, 205-8).

12.5.4 The Survey Area in the Early Second Millennium bc

It is possible on the basis of analogies in upland landscapes distant from Wales that some of the house circles and enclosed homesteads, or elements of the stone clearance on the lower slopes of the survey area, could be at least in part contemporary with the monumental cairns (9.2, Table 9:1 above) (Fleming 1985b, 380; Barnatt 1987, 404-10).

In Wales, in the earlier second millennium bc, it certainly seems that funerary/ceremonial activity and agriculture could take place in the same areas as can be illustrated in contrasting landscapes. At the cliff-top site of Stackpole Warren, Dyfed, there was evidence for contemporary Early Bronze Age farming and ritual activity (Benson *et al* 1990, 237-8), while an association between stone clearance heaps and early second millennium bc burial and ritual monuments has been argued on Cefn Bryn, on coastal Gower (Appendix 4), and also in the uplands in the Brenig Valley, Clwyd (Lynch *et al* 1974, 45-49) and at Penrhiw Cradoc, Mid-Glamorgan (Owen-John 1986).

However, evidence for substantial Earlier Bronze Age settlement structures such as stone-built house circles or enclosed homesteads similar to those in the survey area is conspicuously lacking, and it has to be assumed here that evidence for the use of the survey area during the earlier part of the second millennium bc is limited to the monumental round cairns on the ridge tops, possibly some stone clearance features, and the palaeo-botanical record.

The data towards the close of *Phase 3* in the environmental sequence (2.5.4 above) indicates a continuation of locally open conditions at higher altitude, with suggestions of only limited woodland regeneration in valley heads around 1900 bc. Significant quantities of plantains and a single cereal grain are taken as evidence for both pastoral and arable activity respectively. Regionally, minor woodland clearance increases.

The problem associated with inferring cultivation from such limited evidence has already been mentioned (12.4.4 above), while the stone clearance is too imprecisely dated (5.3.6 above) to be at all conclusive. Animal husbandry again appears likely to have been the principal activity in this landscape. However, it has been suggested that grass-growth at higher altitude would not have been continuous throughout the year. In the rather warmer and drier periods, which seem to have occurred during the cyclical climatic deterioration of the second millennium bc (2.2.3 above), grass growth at altitude could have been restricted to the spring and early summer (Webley 1976, 22). The location of supplementary

pasturage and cultivation, is speculative but exploitation of the survey area is once again likely to have required seasonal movement. Animal husbandry at lower altitude and on passage between environmental zones would have included woodland browsing, contributing to the on-going process of minor clearances.

It is suggested below (12.5.5) that the construction of the monumental cairns indicates that concepts of territoriality in relation to landscapes such as the survey area may have changed during the earlier second millennium bc, with a greater concern to manifestly exert control over the resources of the zone. This could have had implications for the scale of seasonal movement, ultimately reducing the capacity for nomadic transhumance.

12.5.5 The Monumental Cairns and a Possible Regional Context for Land-use Around the Survey Area

The appearance of monumental cairns from around the beginning of the second millennium bc is a clear innovation in the use of these upland landscapes (12.5.2 above). It has been noted that chambered tombs at lower altitudes had seemingly represented an earlier expression of communal identity with territory (12.4.3 above). When tombs are absent from landscapes such as the survey area, this can imply that they were perceived differently in the fourth and third millennia bc as regards "proprietaryship" of territory and resources compared to those areas with tombs (12.4.3 and 12.4.7 above).

Against a likely backcloth, from the latter stages of the third millennium bc onwards, of increasing population levels (Burgess 1985) and competition for land (Fleming 1971b, 155), there may have been a corresponding growth of activity and hence of territorial consciousness in respect of remoter landscapes at higher altitude, a consciousness long-evident in terms of monumental construction in those areas where sustained agricultural exploitation had a longer history.

The monumental round cairns ostensibly served as repositories for the dead (5.2.4 above). It has often been suggested that areas were chosen as locations for burial monuments because the land was of limited economic value. However, the burial monument and the ritual surrounding interment, can be viewed as a means of social display (Barrett 1990), with positive connections with the chosen location. Social display through the construction of substantial and prominently located funerary monuments, such as the round cairns of the survey area, seems an appropriately indelible way of associating a community with a landscape, particularly if it was physically present only on a seasonal basis (12.5.4 above). Consideration of the choice of location of the more prominent upland monumental cairns in Wales has prompted speculation that they were built as markers, as reminders of proprietorship, in order to assist in the exercise of social or political control (Lynch 1975, 126), or symbolically to oversee traffic through an area (Crew 1985, 309-10). Their location in

naturally prominent positions may echo a community's former identification with significant natural places (Bradley 1991, 137).

As has been noted, the monumental round cairn is only one example of a range of broadly contemporary monuments known from upland Wales including open stone circles, standing stones and ring cairns. The communal role of these sites in terms of ritual and ceremony may extend beyond the one-off interment of the dead to practices and ceremonies which the community needed to repeat through time (5.2.7 above). These other forms of monument are absent from the survey area and the possible reasons for this should be considered.

Arguably these other forms of ceremonial/ritual structure were erected only in areas to which the community had a closely defined sense of proprietorship of longer standing. Following Bradley's view (1991, 135), that the shift from identification with natural places to identification with monuments occurs with the advent of long-term interference with the landscape required by food production, the construction of these other monumental forms may have been largely confined to areas sustaining occupation on a year-round basis, perhaps also the location of any arable component in the farming regime - a 'home-area' in Fleming's terminology (1971b, 159-62).

The influence of altitude and local topography in creating a favourable micro-climate is likely to have been relevant in the

choice of such settlement areas (2.2.4 and 2.2.5 above). It should be possible to test the idea that monuments used for communal ceremony and ritual were raised in "home areas" (despite the absence of visible settlement structures) by comparing the distribution of ring cairns, open stone circles and standing stones in relation both to topographical characteristics favourable to the practice of agriculture and any actual local evidence for early agriculture (2.5.4 above). This is hampered by the character of the data. There is too little palaeo-environmental information correlated to relevant archaeological contexts. Also, the classification of likely sepulchral cairns, ring cairns and clearance heaps in the most comprehensive compilation of sites of this period published for South Wales, the *Inventory for Glamorgan* (RCAHM 1976a), is such that the data cannot be used without some reassessment, as demonstrated on Cefn Bryn, Gower (Appendix 4).

However, the writer has now studied three locations in South Wales in a degree of detail which allows tentative evaluation of this idea. These are Cefn Bryn (Appendices 1 and 4) and Rhossili Down, both on the Gower Peninsula (Appendix 3), and Mynydd Llangyndeyrn, South-East Dyfed (Appendix 2). At each, ring cairns, and, in the case of Mynydd Llangyndeyrn, standing stones, are present alongside evidence for early agriculture, either in the form of clearance heaps or linear boundaries. The agricultural episodes have not been dated directly at these locations. However, even if later than the ritual monuments, they at least indicate the agricultural potential of these landscapes, which could well have

been realised at an earlier date contemporaneously with the ceremonial sites (Ward 1988a). The reassessment of the character of the stone heaps on Cefn Bryn (Appendix 4) may indicate that many small cairns described elsewhere in Glamorgan (RCAHM 1976a) are likely field clearance features. These are particularly prevalent in the hills where it is apparent that ring cairns too are relatively common (Lynch 1972).

It is suggested that three zones of land-use related to food production can be defined by the middle of the second millennium bc for the general region encompassing the survey area.

Firstly, a zone in which food production and sedentary settlement were of longest standing, from early in or just before the third millennium bc. This generally would be on the coastal plain. An example would be the Gower Peninsula, an area well favoured for agriculture, where the early second millennium bc activity on Cefn Bryn and Rhossili Down is clearly predated by chambered tombs arguably with territorial associations (12.4.3 above).

Secondly, a zone in the hinterland which had been exploited on a more transient basis during much of the third millennium bc but which arguably has taken on characteristics of a "home area" by the early second millennium bc in response to population pressures. This is demonstrated by the presence of monuments with a wider communal role, and suggestions of agricultural activity. Examples would be Mynydd Llangyndeyrn, and areas in the Glamorgan hills.

Finally, there is a zone which continues to be exploited on a seasonal basis, but which becomes subject to more explicit territorial control manifest in the monumental funerary cairns. The survey area would be part of such a zone. The clearer demarcation of the seasonally used areas may reflect the combined effects of increased competition for resources through population growth, presumably also evident in the expansion of "home areas" into the hinterland, and less abundant resources on account of accelerating soil degradation (2.4.2 above), and the effects of drier climatic episodes reducing both the quality of and growing season for pasture (12.5.4 above),

Discussion of the character of transhumance through the late third and earlier second millennia bc, whether nomadic or part of the agro-pastoral regime of sedentary communities (10.4 and 12.4.6 above), continues to be hampered by the lack of good evidence both for settlement, and the nature of the livestock which would obviously have affected the character of the husbandry. Two ideas seem worth considering.

Firstly, that transhumance within an agro-pastoral economy, which involved social dislocation of part of the community during part of the year, was instrumental in the establishment of new "home areas" in the interior through the foundation of satellite settlements (10.2.6 above). Historical analogy suggests that the mechanism could have involved seasonal settlement becoming permanent settlement through experimentation with initially small scale

arable or "gardening activity" during the summer and occasional over-wintering of certain stock (11.6 above). Such a transition phase would, once again, have lessened the risks inherent in developing the use of resources in a less favoured environment (10.2.1 and 10.2.2 above).

Secondly, that as a consequence of the encroachment of "home areas" into the hinterland, competition for the seasonal resources of remoter landscapes such as the survey area became greater. As has been suggested above, the monumental cairns may be a manifestation of this. It probably became more practical to exploit the remoter and higher landscapes through vertical movement, as distances to be travelled shortened with the expansion of "home areas" into the hinterland. It has been noted that transhumance involving shorter seasonal journeys can be more effective compared to that requiring longer movements, since it allows greater flexibility and sensitivity in the exploitation of zones of relatively low productivity (10.2.6 above). This through time could have reduced the availability of the diverse environmental zones necessary to sustain any nomadic transhumance practised in the uplands and might well have inhibited the longer distance transhumant cycle sometimes suggested (Webley 1976, 26-32). Hence, the monumental cairns could well be the product of competition between two forms of transhumance (and indeed could have been built by either party).

12.6 A SOCIAL DIMENSION

It has been suggested that the possible extension of sedentary food-producing communities further into the hinterland by the second millennium bc, albeit still complemented by a degree of economic mobility linked to seasonal exploitation of grazing at altitude, resulted in increased territorial consciousness manifest in zones differentiated by monument forms (12.5.5 above). There may have been parallel social consequences too. Fleming has argued that peasant society in British prehistory can be viewed at three levels of organization (1985b, 132-4). The primary level concerns activity within the domain of the household or core kinship unit; the secondary level involves collaboration between households for tasks best performed through pooled labour and which require collective decision-making; the tertiary level of organization involves political control and decision-making by a group responsible for matters such as territorial defence, or regulating exploitation of land located over a broad terrain.

If peasant food production, with implications of sedentary occupation of a "home area", was becoming more widespread in South Wales by the early second millennium bc, then a tendency to more hierarchical political decision-making is a possible outcome. This may be evident in the increased territorial consciousness in upland landscapes where seasonally available grazing was a diminishing resource and subject to greater competition. As already noted, there are intimations of enhanced individual status in some of the burials of the period (12.5.2 above).

CHAPTER 13: LAND-USE FROM
THE LATE SECOND MILLENNIUM
bc TO APPROXIMATELY
400/500 AD

13.1 INTRODUCTION

Most of the structures recorded during the survey probably date between the late second millennium bc and the early Post-Medieval period (9.2 above). They can be divided into two broad groups for the discussion of land-use. The first comprises the linear boundaries, and the one area of enclosure on Drysgol; house circles and enclosed homesteads; and most of the stone clearance heaps and strips (fig. 9:1). These fall within a late prehistoric to early historic dating band, the period preceding c. 1000bc until c. 400 to 500AD (Table 9:1 above). The second group comprises the various types of rectangular and sub-rectangular structures and their ancilliary buildings, together with limited associated evidence for stone clearance (fig. 9:1). These broadly are considered to be Medieval to early Post-Medieval in date, perhaps 1100 to 1200 AD until c. 1500/1600AD (Table 9:1 above). They will be discussed in relation to land-use in *Chapter 14*.

The stony banks which either partition or enclose areas of the survey area, the house circles and the enclosed homesteads, together with the stone clearance heaps and strips likely to be associated with them, can be dated within a very wide late second millennium bc to c. 400 to 500AD band (9.2 above). This embraces the conventional Later Bronze Age, the Iron Age, the period of Roman occupation and the immediate sub-Roman period. A case can be made out that the linear boundaries at the north-western edge of the survey area possibly date to the later second or early first millennium bc (5.4.2 above), while many annular

foundations and the enclosed homesteads will fall within a c. 500bc to 500 AD bracket (6.2.5 and 6.3.4 above).

After an introduction to general environmental and archaeological parameters for the period which are particularly relevant to the Welsh uplands (13.2 below), the functional implications of each category of site will be considered (13.3 below), before a chronological overview of land-use is attempted against the background of the local environmental sequence (13.4 below).

One further preliminary point - it has been noted that the linear banks, apparently partitioning the landscape along the north-western edge of the survey area, are probably only the upper part of a system which extended within the present-day enclosure (5.4.2 above). The problems of interpreting the vestiges of ancient field systems are all too evident (Taylor 1987, 27). This probably once more extensive field system raises the more general question of the relationship of activity within the survey area to that in the landscape immediately beyond. This becomes still more important once woodland clearance in the surrounding landscape indicates increasing activity at the periphery of the survey area during the first millennium bc (2.5.4 above, *Phase 4*). In the absence of the necessary field-work, detailed consideration of this factor is not possible, although it needs to be recognized as a significant unknown.

13.2 ASPECTS OF THE ENVIRONMENTAL AND ARCHAEOLOGICAL BACKCLOTH IN WALES FROM THE LATE SECOND MILLENNIUM bc TO c. 400/500 AD

The climate deteriorated, probably with some rapidity, from the end of the second millennium until well into the first millennium bc (2.2.3 above). This environmental threshold has long been accepted as a catalyst for change in the character of the settlement and exploitation of the Highland Zone, with cultivation in particular thought to have been more-or-less abandoned (Feachem 1973, 348). The putative consequences of the deterioration in the uplands have been elevated to a "catastrophe," a view which can be summarised by reference to the works of Burgess (eg. 1979; 1980b, 236-9; 1985; 1989). These include considerable reductions in the scale of settlement and agriculture, and even claims for the abandonment, more-or-less, of tracts of uplands in some areas. The dramatic character of the impact of climatic deterioration has been enhanced by linking the suggested economic changes to both the disappearance of long-standing funerary and ceremonial traditions and the widespread emergence of defended settlements which have been viewed as consequences of the social pressures generated during the climatic decline.

This period of climatic deterioration embraces the conventional later Bronze Age and the beginnings of the Iron Age. Very little is known of this period in Wales, particularly as regards settlement and economy, since there is relatively scant evidence apart from metalwork (Burgess 1980a). It does seem that the burial and ceremonial traditions of the earlier second millennium bc wane and

were largely abandoned, although sites such as standing stones continued to have a local significance (Benson *et al* 1990, 240-2). Importantly, the construction of defended enclosures in South Wales begins during the first half of the first millennium bc (Burgess 1980a 268-7), for example, at Dale Fort on the Pembrokeshire coast (Benson and Williams 1987), and at Coed y Cymdda, South Glamorgan (Owen-John 1988). In Dyfed, later Bronze Age activity is most evident in the climatically favoured coastal areas where it is suggested that the effects of deterioration were less strongly felt (Williams 1988b 40-1; Benson *et al* 1990, 240). In Glamorgan, too, the currently available archaeological data lead to the conclusion that activity became focussed at lower altitude, with a minimalist view of settlement in the uplands (Savory 1984b, 214-18 and 230-33).

It may, however, be possible to put the alleged "catastrophe" into a different perspective by separating the apparently very real and genuinely widespread diminution and cessation of long-lived ritual practices in the uplands, from the putative decline of economic and settlement activity which requires closer investigation. These elements may not necessarily be part of the same process; they may not always have climatic deterioration as a common stimulus; and there may be variation in the degree and character of economic "decline" across the British Highland Zone with the concept of decline modified in some areas to one of change. In particular, there is a suspicion that archaeological change is too imprecisely dated at present for it to be immediately associated with the

climatic effects of the eruption of Mount Hekla in the mid-12th century BC (2.2.3 above; Baillie 1989, 313).

The capacity for regional variation in the timing of the impact of climatic deterioration within the uplands has been recognized, particularly in the south-west of England where settlement at altitude in locations with favourable aspects continued well into the first millennium bc, benefitting from a regionally more benign climate (Feachem 1973, 348; Johnson 1980, 172), and apparently contrasting with marked reductions in upland settlement in northern Britain (Burgess 1989).

Whittle has written cogently about the impact of this episode of climatic deterioration in the late second and early first millennium bc (1982). He suggests that climatic factors may have been afforded too decisive a role as a cause of change, and, that in any event, many of the economic consequences have been assumed rather than proven (Whittle 1982, 192-4). Non-climatic factors such as social developments in relation to metallurgical innovations or changes in the macro-economic context reflecting a diminution in relations with Europe may also have contributed to changes in activity in the Highland Zone (Whittle 1982, 200). He notes that the greatest consequence of climatic change would have been on arable agriculture which probably had only ever been a minor component in the upland farming regime.

Consequently, attention should be focussed on the consequences of climatic change for animal husbandry (Whittle 1982, 193-4). The potential reduction in the quality of grazing which could result from climatic deterioration with consequences for stocking rates is discussed together with the impact of seasonal and regional variation in the length and timing of the growing seasons. He concludes that adjustment to new conditions would be possible where local subsistence practices were integrated into, and hence to some extent underpinned by, a wider regional economy (Whittle 1982, 195-9). He envisages the adjustments which would allow animal husbandry to have continued effectively in the uplands as including closer management of the grazing; increasing selection of animals capable of providing a return in harsher conditions; and greater use of the practice of transhumance which would have facilitated integration of the uplands into a regional economy and allowed the risks of husbandry to be spread (Whittle 1982, 199-200).

Burgess has described how the distribution of certain forms of Late Bronze Age metalwork indicates the presence of territorial entities on a wider regional scale from around 1000bc. He has suggested that these possibly anticipate tribal territories of the Roman period (1980a, 248-9). There is a certain amount of evidence from which the territorial organization of tribal society can be inferred during the Roman occupation, for example, that of the *Demetae* and *Silures* in south-east and south-west Wales respectively (Jarrett and Mann 1968-69) (fig. 13:1). However, the relevance of these boundaries to preceding centuries may be limited

in view of social dynamics during a period when locally and regionally unstable conditions probably prevailed in contrast to the centralisation of power in other areas of the British Isles, for example, central southern England, later in the first millennium bc (Jarrett and Mann 1968-69, 163; G. Williams 1985b; Cunliffe 1991, 496-7 and 536-8).

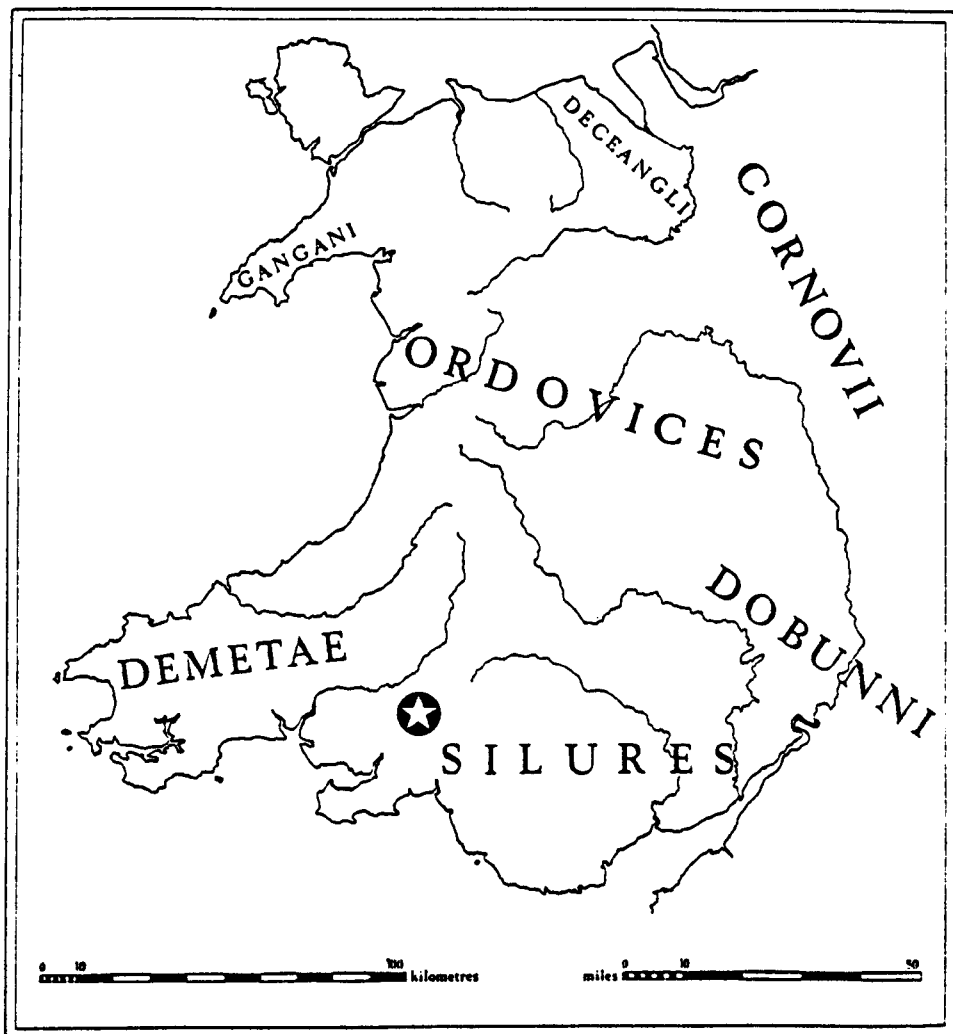


Fig. 13:1. Possible Romano-Celtic tribal areas (taken from Jarrett and Mann 1968). ★ survey area.

Nonetheless, the archaeological evidence from the end of the second millennium bc onwards does present a contrast with earlier epochs in terms of clearer indications of a more hierarchical social organization, at least at the level of local aristocracy (Cunliffe 1991, 538), with influence across wider geographical areas. This would have facilitated the regulation and integration of resources across different environmental zones, through social mechanisms involving, for example, kinship, obligation and reciprocity (Fleming 1985b, 131).

In the latter half of the first millennium bc, there was some amelioration in climate. This continued, with minor fluctuations, into, and towards the middle, of the first millennium AD (2.2.3 above). In South Wales, radiocarbon determinations indicate the continued construction of diverse forms of defended enclosure in the second half of the first millennium bc, the conventional Pre-Roman Iron Age (Cunliffe 1991, 261-69) (eg. Wainwright 1967 and 1971; Guilbert 1974; G. Williams 1981 and 1988b). These are generally built away from the upland zones (fig. 13:2). Enclosures of various sizes and in various topographical locations are generally situated below 200m OD in Carmarthenshire, and they are mostly well to the west of the survey area, or along the Towy Valley to the north (fig. 13:3). The uplands are avoided except for some unenclosed house circles which may belong to this period (G. Williams 1979, 19-20). A similar situation pertains in Glamorgan (RCAHM 1976b, 10).

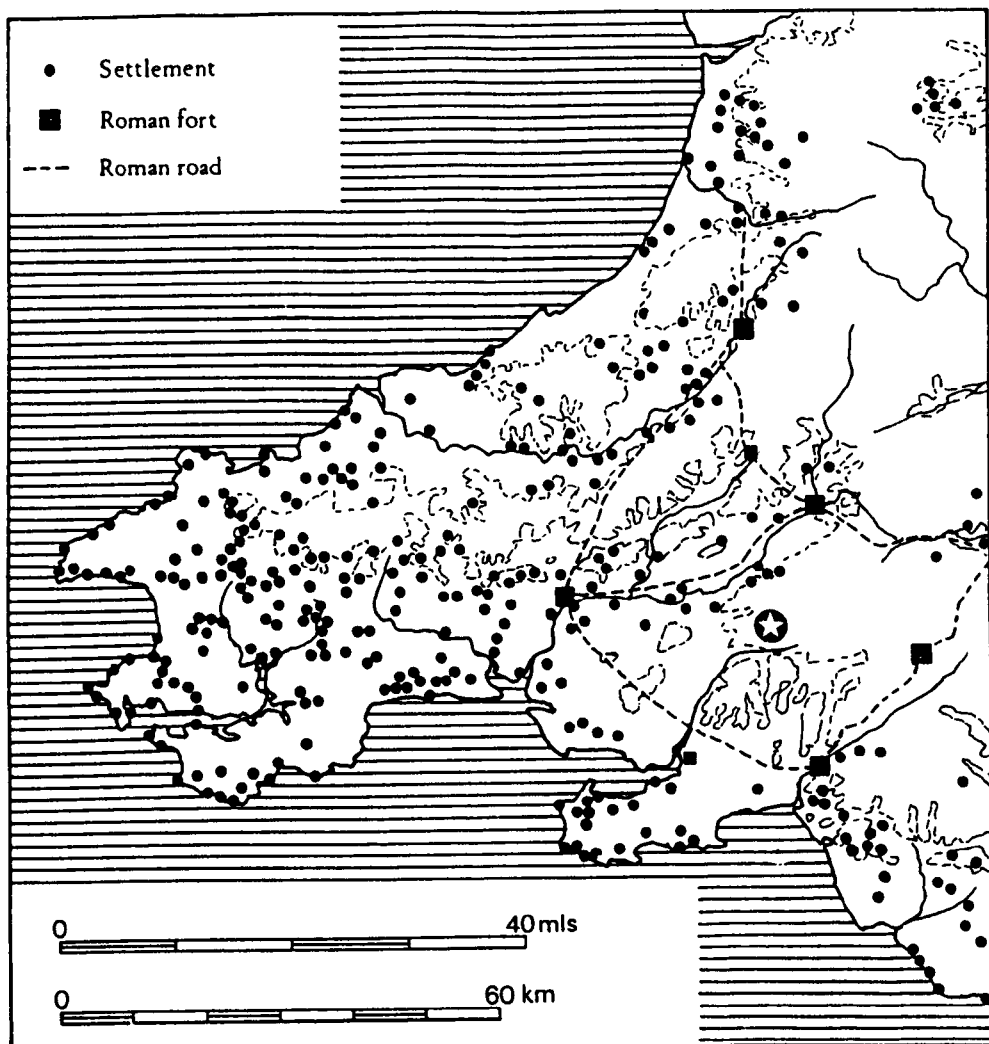


Fig. 13:2. Distribution of enclosed settlements likely to date to the first millennium bc and proto-historic times, with Roman forts and road system (taken from Cunliffe 1974, figure 8:1 with minor modifications and addition of 200m contour). ★ survey area.

In Dyfed, a contrast is drawn between the south-western coastal region where arable farming was favoured, and areas to the north and east where animal husbandry, in which sheep are thought to have figured largely, is seen as the mainstay of the economy with cultivation in very much a subservient position (G. Williams 1988b, 31-33; Cunliffe 1991, 394-6). It should be noted that the pre-

eminence afforded to sheep as opposed to cattle in the upland pastoral regime appears to be based on an assumption deduced from likely land-use potential rather than conclusions drawn from contemporary data. Less is known about the agricultural economy in the eastern area of South Wales, for which a mixed farming regime is postulated (Cunliffe 1991, 397). Transhumance is once again suggested as a possible link between exploitation of uplands and lowlands (Savory 1984c, 270).

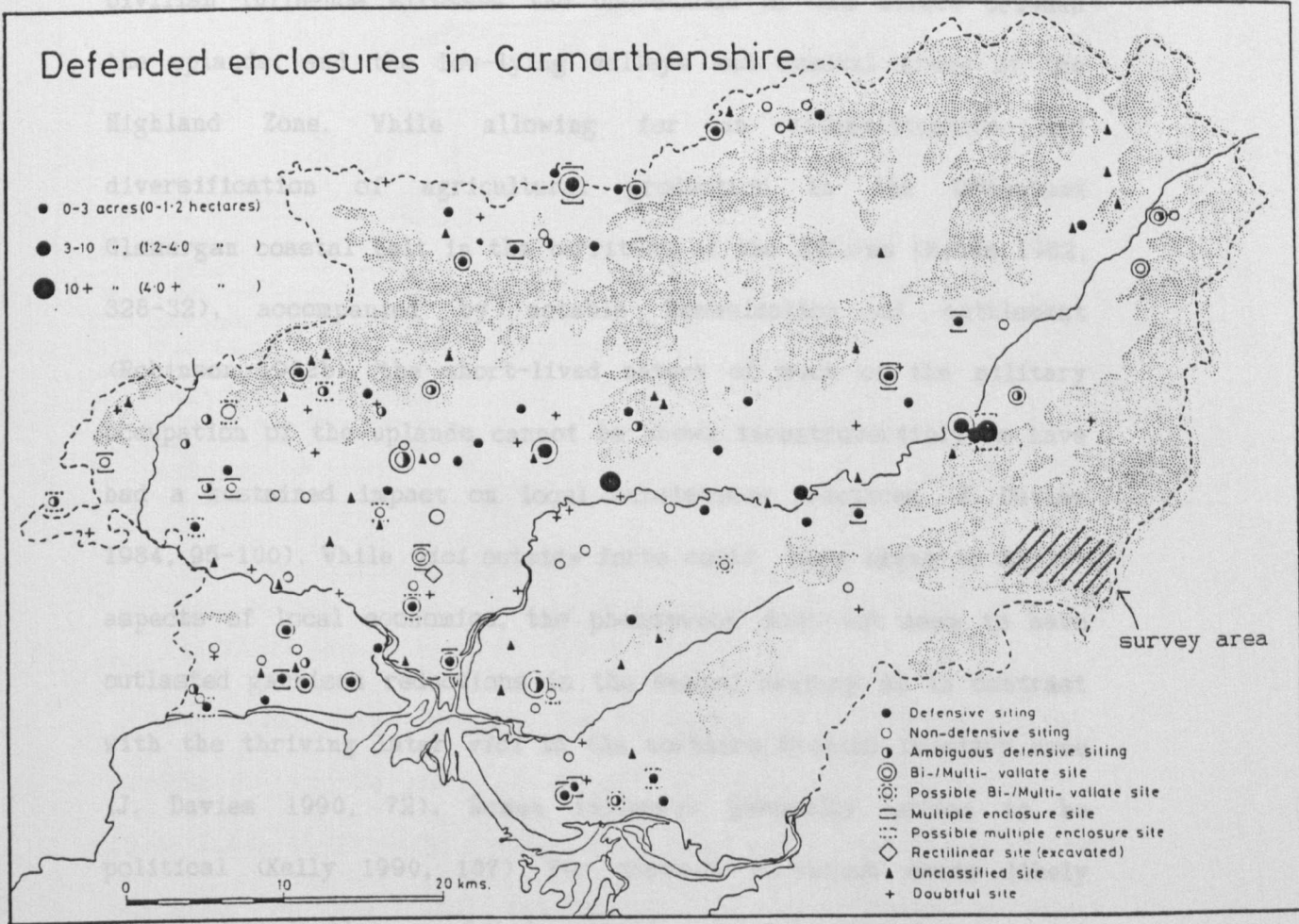


Fig. 13:3. Enclosed settlements in Carmarthenshire (figure 1 from G. Williams 1979). Land over 200m OD stippled.

The garrisoning of much of the Highland Zone for periods during the Roman occupation has been held to result in an intensification of agricultural production, in particular cereal cultivation, in the areas adjacent to forts (Manning 1975). However, this conclusion seems to be implicitly based on the broad concept of the Highland Zone following Fox (1932), and does not take into account the variety of landscapes and micro-environments within that zone. A more cautious assessment of the impact of both Roman military and civilian influence stresses the unevenness of the effect between the uplands, and the low-lying valleys and coastal areas of the Highland Zone. While allowing for an intensification and diversification of agricultural production in the Romanised Glamorgan coastal belt in the territory of the *Silures* (Mytum 1982, 328-32), accompanied by notable Romanization of settlement (Robinson 1982b), the short-lived nature of much of the military occupation of the uplands cannot be shown incontrovertibly to have had a sustained impact on local subsistence practices (J. Davies 1984, 95-100). While *vici* outside forts could have begun to modify aspects of local economies, the phenomenon does not seem to have outlasted garrison reductions in the second century AD in contrast with the thriving later *vici* in the northern British frontier zone (J. Davies 1990, 72). Roman influence generally tended to be political (Kelly 1990, 107). For example, a switch seems likely from redistribution regulated primarily by broadly local social obligation to political tribute or "taxation" within an administrative framework controlled at far remove.

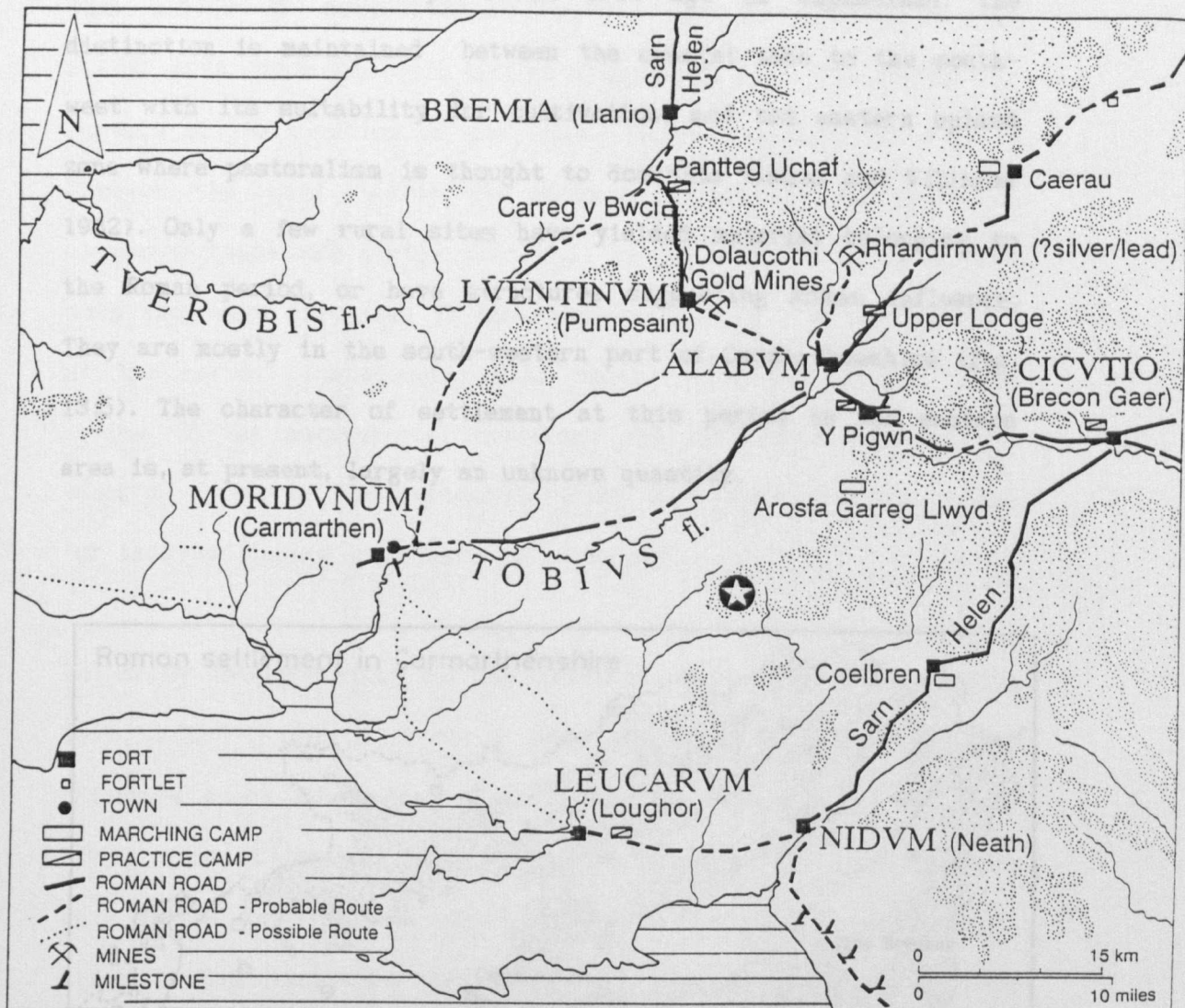


Fig. 13:4. Location of *Moridunum*, together with Roman military activity and road network in the vicinity of the survey area (figure 2 from James 1991). Land over 300m OD stippled. ★ survey area.

In south-west Wales, despite the foundation of a *Civitas* capital, *Moridunum*, in the territory of the *Demetae* at Carmarthen (Little 1974; James 1992) (fig. 13:4), minimal effect is detectable in the character of the rural settlements in the surrounding area, although there is a handful of Romanized sites including a settlement that is possibly a villa at Llys Brychan in the Towy Valley (fig. 13:5) (James and Williams 1982, 297). Continuity with

the settlement of the pre-Roman Iron Age is emphasised. The distinction is maintained between the coastal zone to the south-west with its suitability for cultivation, and the eastern upland zone where pastoralism is thought to dominate (James and Williams 1982). Only a few rural sites have yielded material belonging to the Roman period, or have structures suggesting Roman influence. They are mostly in the south-western part of Carmarthenshire (fig. 13:5). The character of settlement at this period in the eastern area is, at present, largely an unknown quantity.

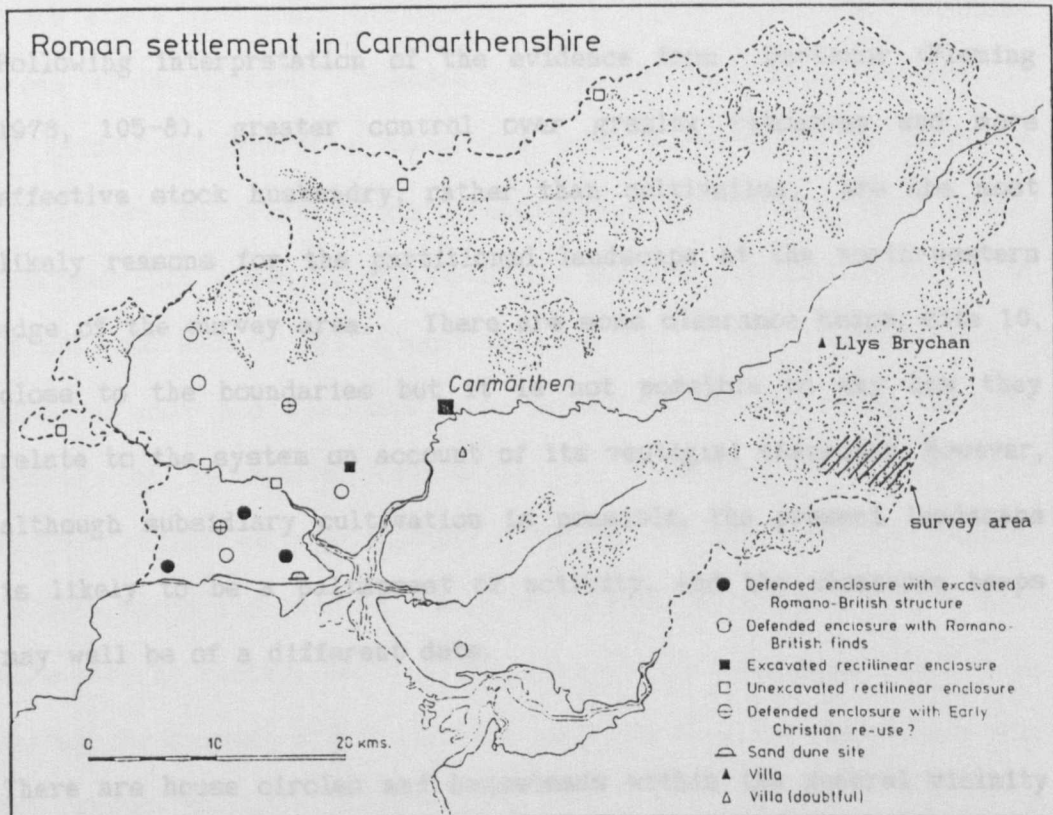


Fig. 13:5. Roman settlement in Carmarthenshire (taken from G. Williams 1979, figure 3 with minor modifications). Land over 200m OD stippled.

13.3 REVIEW OF AGRICULTURAL ACTIVITY AND SETTLEMENT IN THE SURVEY AREA FROM THE LATE SECOND MILLENNIUM bc to 400/500AD

Aspects of the function of the linear banks, the enclosed area on Drysgol, the house circles, the enclosed homesteads and the stone clearance heaps and strips (fig. 9:1) have already been considered when they were discussed in the chapters dealing with the analysis of the survey. Consequently this section provides only a brief review of the agricultural practices and settlement associations inferred from the field-evidence, prior to discussion of a scheme for land-use during this epoch (13.4 below).

Following interpretation of the evidence from Dartmoor (Fleming 1978, 105-8), greater control over grazing resources and more effective stock husbandry, rather than cultivation, are the most likely reasons for the partitioned landscape at the north-western edge of the survey area. There are some clearance heaps, site 10, close to the boundaries but it is not possible to say how they relate to the system on account of its vestigial character. However, although subsidiary cultivation is possible, the present landscape is likely to be a palimpsest of activity, and the clearance heaps may well be of a different date.

There are house circles and homesteads within the general vicinity of the linear banks (fig. 9:1; Tables 6:1 and 6:3 above). While only house circle 19 is physically close to the banks, the proximity of these structures indicates the possibility of contemporary settlement in the area. The putative chronology allows

a degree of overlap between the linear banks and the house circles and enclosed homesteads (Table 9:1 above), although an association with activity represented by stone clearance piles is generally indicated elsewhere in the survey area.

Site 401, the three conjoined stone banked enclosures 3.5 ha in extent on the southern slope of Drysgol, is firmly associated with house circles (fig. 3:33). This enclosure is isolated, and is not part of any more widespread system of landscape partition. The house circles indicate settlement linked to agricultural activity. There are a few small stony heaps and strips within the enclosed areas which represent plausible plots for small-scale cultivation or gardening. Clearance heaps 409 outside the area of enclosure could also be evidence for contemporary cultivation (fig. 3:33). Otherwise the scale of the enclosure suggests an association with animal husbandry. The slight lynchetting along the down-slope sides of 401b and 401c can be accounted for by soil-creep, perhaps exacerbated by erosion caused by the trampling of animals. The enclosed areas were presumably intended to facilitate the control of both stock and pasture. Close management of stock may have been necessary at certain seasons, for example, for over-wintering, while during the summer, stock could be excluded to allow cultivation and hay production.

Stone clearance heaps and strips are found around the survey area, mostly within an altitudinal band from the edge of the present enclosure at around 240m OD up to 360m OD (fig. 9:1). Despite the

caveat that stone clearance can represent attempts at the improvement of pasture (Limbrey 1975, 165), it is usually assumed that the stone was most probably produced as a consequence of tillage for cultivation (Fowler 1984, 18-9. The altitudinal range and location on open slopes of the stone clearance features broadly parallels that of some of the house circles and all the homesteads (9.4 and 9.5 above). A considerable degree of contemporaneity has been suggested between these settlements and stone clearance features, albeit within wide dating parameters (9.2 and 9.3 above). This settlement evidence, therefore, may well be associated with a local economy containing an element of arable activity.

It has been noted that many smaller house circles under c. 7m across tend not to be closely associated with evidence for cultivation. They also extend to higher altitudes than other such foundations (6.2.3 above).

13.4 A SCHEME FOR LAND-USE AND SETTLEMENT WITHIN THE SURVEY AREA, LATE SECOND MILLENNIUM bc TO 400/500 AD

13.4.1 Introduction

The review of the field evidence in section 13.3 has indicated the likelihood of the practice of both animal husbandry and cultivation on this part of the Black Mountain during a period of up to fifteen hundred years or more. Land-use will be discussed, firstly, in terms of the late second to early first millennium bc, a period

during which part of the landscape may have been partitioned by the linear banks (13.4.2 below), and secondly, in respect of the thousand years or so after the period of climatic deterioration, from the early to mid-first millennium bc to around the middle of the first millennium AD (13.4.3 below).

13.4.2 Agricultural Activity and Settlement, Late Second Millennium to Early First Millennium bc

The partitioning of the landscape at the north-western edge of the survey area, taken to be a late second millennium bc to early first millennium bc phenomenon (5.4.2 above), implies the extension of woodland clearance on the lower northern slopes of the massif creating a more open environment. By way of analogy, the layout of co-axial field systems on Dartmoor initiated woodland clearance in areas which had not previously been seriously affected by clearance (Balaam *et al* 1982, 214-5). Phase 4 of Cloutman's palaeo-botanical sequence opens in the period after c. 1300bc with evidence for increased regional clearance in which human intervention is considered significant (2.5.4 above). It appears that woodland clearance was greater on the southern rather than on the northern slopes. However, this conclusion may only be relevant to the areas adjacent to the sampling sites (2.5.6 above), and it does not preclude substantial clearance at the north-western periphery of the survey area in the vicinity of the linear boundaries which would not be specifically identifiable in the regional pollen sample.

The adoption of field systems is generally taken as an indication of soci-economic pressure (Bradley 1978b, 272; Fleming 1987b, 195-201). At the end of the second millennium bc, an increasing population (Burgess 1985) and the beginnings of a reduction of the agricultural potential of the uplands through soil degradation may have given rise to the parcelling of land to allow closer management of grazing resources (Whittle 1982, 199). Pasture within the linear boundaries could have been protected or its use rotated as required, with grazing on the outfield beyond the enclosure undertaken according to the season.

The partitioning of large tracts of the landscape is likely to have carried out within a communal context (Fleming 1988, 66-7). It is an action which also presumably reflected a stronger, more formal expression of proprietorship, an extension of the earlier symbolic attachments afforded by monumental cairns in the southern Welsh uplands (12.5.5 above). The extent to which such field systems could have arisen out of common agreement or required imposition is uncertain. The scale of the enterprise is relevant to this question, which is therefore difficult to address in respect of the survey area in circumstances where the original extent of the field system is unknown (13.1 above). However, the emergence of hierarchical decision-making suggested for the earlier second millennium bc in relation to control and exploitation of territory (12.6 above) suggests a "political" imperative behind the partitioning of the landscape reflecting a continuation, or indeed,

an intensification of the pressures and competition for resources identified earlier in the millennium (12.5.5 above).

Although transhumance has been canvassed as a possible system of exploitation on Dartmoor towards the end of the second millennium bc (Hammond 1979, 171), it has been concluded that it would not have been dominant and may not have involved substantial dislocation of communities (Balaam et al 1982, 272-3). There is the implication that the large-scale partitioning of the landscape on Dartmoor was bound-in with an episode of permanent settlement (5.4.2 above), perhaps reflecting pressures from an increasing population which permanently settled for the first time areas not hitherto subjected to sustained exploitation (Mercer 1984, xv-xvi). The partitioning of part of the landscape on the Black Mountain may reflect this process, a significant move away from earlier transient activity to continuous occupation in the immediate locality. This would represent an extension of the establishment of "home areas" still further into the hinterland, a process in which transhumant activity through the second millennium could have been significant through the foundation of satellite settlement (12.5.5 above).

Elements of settlement could be represented by the enclosed homesteads and house circles recorded close to the stone banks (although, as noted in sections 6.2.5 and 6.3.4, it is still not clear how early this type of settlement occurs in the Welsh uplands), or the settlement foci may have been at rather lower

altitude, within the present-day field system bordering the survey area.

Grazing of the open landscape beyond the field system is likely to have necessitated stock transference under the supervision of herders, if not other forms of transhumance involving significant social mobility (10.4 above). These intimations of the beginnings of a partitioned landscape in the local region may indicate that there was still less scope for truly nomadic transhumant activity. The smaller house circles, under 7m across, which extend to higher altitude than other annular settlement structures (13.3 above), may represent the shelters of those husbanding stock beyond the enclosed landscape, a suggestion which can be paralleled elsewhere, for example, once more on Dartmoor (Fleming 1988, 103).

13.4.3 The Character of Food Production in the Survey Area from the Early to Mid-First Millennium bc to c. 400/500AD

In this section the nature of food production in the survey area during the period will be discussed. The nature of associated settlement will be considered in 13.4.4 below.

Following Whittle (1982), the late second millennium bc climatic deterioration, the impact of which is detectable in the local environmental sequence by about 1000bc (2.5.4 above, Phase 4), should not have led to the cessation of animal husbandry. Indeed, the local palaeo-environmental sequence indicates the continuation of grazing right through the first millennium bc and into the early

centuries AD (2.5.4 above, *Phases 4 and 5*). However, methods of exploitation may have changed, perhaps with the formally partitioned landscape ceasing to be appropriate to the management of resources although the detail of this is obscure. Adaptations of husbandry practices during the centuries of climatic decline could have involved, for example, still greater emphasis on the practice of seasonal exploitation of grazing in the area (Whittle 1982, 199-200) following a reduction in or the abandonment of any permanently occupied settlement associated with the partitioned landscape.

Palaeo-environmental evidence suggests that, as well as woodland clearance in the area becoming increasingly widespread through the first millennium bc into the first millennium AD, there is also an episode of marked intensification of arable farming. On the basis of pollen-deposition rates this was assigned by Cloutman to the Romano-British period, with the assumption that there was an increased demand for cereals at this time (2.5.4 above, *Phase 5*). Although a possibility, this restricted dating band is treated with some reservation in the light of recent research which concludes that there was no real modification of upland economies in Wales in response to the Roman military occupation from the seventies AD (13.2 above).

Further, the survey area appears isolated from military activity (Jarrett and Mann 1968, 166), with the two closest forts within the South Wales hinterland, at Llandovery and Coelbren (fig. 13:4),

in use for less than a century, being abandoned by around 160 AD at the latest (Wash Williams 1969, 22-7). Also, the Roman road system by-passes the survey area by wide margins, emphasising its relative isolation (James 1991) (figs. 13:2 and 13:4). The closest site showing Roman influence is at Llys Brychan, a villa-type site in the Towy Valley, north of the survey area (Jarrett 1962) (fig. 13:5). Some hint of Roman economic influence within the survey area is provided by the one sherd of pottery recovered near compartmented rectangular building 116 (3.3 above).

Given the apparently minimal Roman impact on the practice of agriculture activities in the area, later Iron Age population increase (Cunliffe 1978, 22) is equally as likely a factor to account for intensification of usage of upland landscapes through cultivation. Therefore, a wider later prehistoric to early proto-historic dating bracket, the late centuries bc to early centuries AD, would seem a safer dating band for the cultivation indicated by the pollen data. This would happily coincide with a degree of amelioration in the climate facilitating cultivation in such landscapes compared to the earlier first millennium bc (2.2.3 above), and possibly, also, the adoption of hardier cereals (below).

It is tempting to associate much of the stone clearance, assuming it to be the consequence of tillage, with this phase of the palaeobotanical sequence indicating increased arable activity. The altitudinal range of the stone clearance, 240m to 360m OD (5.3.5 above), is well within that contemplated for prehistoric

cultivation (Fleming 1976, 365-7). Further, there is some bias towards south facing slopes which would have provided a warmer aspect important for the ripening of crops (9.4 above). Also there are indications that islands of better drained soil were deliberately selected for cultivation (9.6 above). This reflects the likelihood, already noted, that micro-climate and topography were as important in the past as they are now in determining the local character of land-use (2.2.5 above).

Recent historical land-use is often taken as informing consideration of later prehistoric and proto-historic land-use from the middle of the first millennium bc onwards (eg. Applebaum 1972, 110; Cunliffe 1991, 394; Manning 1975, 113) since the major variable, the climate, is comparable (Reynolds 1984, 106). It may be significant, therefore, that oats have recently been grown in this area of south-west Wales at altitudes in excess of 300m OD, while wheat and barley, in modern forms at least, have been grown only under 200m OD and have been found intolerant of the usually highly moist conditions (Davies and Miller 1944, 518). Barley also has been noted as well-suited to high altitude elsewhere in the world (Harlan 1972, 239).

Oats have been suggested as a cereal appropriate for early cultivation on the more acidic soils at altitude, particularly as the crop may be harvested in an unripened state (Fleming 1976, 366). Historically oats have been an important crop in upland Wales on account of their adaptation to moist, cool conditions, and

unexacting demands as regards soils (D. Thomas 1965, 73). Also, it has been concluded that the likelihood of total crop failure is largely hypothetical since oats may be harvested into the winter period although the yield will be reduced, prejudicing reserves of seed (Parry 1975, 4).

Cultivation, as already mentioned, is only likely to have been a relatively minor component in an agricultural regime in which animal husbandry was dominant (13.3 above). In this respect, it is worth noting that cultivation of oats is regarded as particularly suitable for a pastoral economy since the straw has value as winter feed (Davies and Miller 1944, 518), and the grains have a high nutritive value both as a staple in human diet and as a high energy supplement for stock (Zohary and Hopf 1988, 71).

While cultivation of oats would appear to minimise the risks inherent in investing labour in innovative cultivation in the uplands, there are doubts as to just how early oats may have been grown in Britain prior to the early Middle Ages since it is difficult to distinguish wild from domesticated forms (Hillman 1984, 123-4). Cultivated oats have been claimed for southern England during the Iron Age (M. Jones 1981, 108) and more widely across Britain during the Romano-British period (Applebaum 1972, 108-9), and it is suggested that their initial cultivation in Britain was in response to climatic deterioration in the early first millennium bc (Mercer 1984, xix) since they succeed so well in moister climates (Zohary and Hopf 1988, 71). However, oats which

are clearly the products of cultivation seem not yet to have been found in South Wales in early contexts. For example, it was considered that oat grains recovered at the Iron Age site of Penycloed, Llangynog, south Dyfed, may represent weeds in a wheat crop rather than a main crop (Nye 1985, 108).

Even if the status of oats remains uncertain in the diversification of crops apparent in southern Britain in the first millennium bc, spelt does seem to replace emmer as the commonest form of wheat (Dennell 1976, 18). Significantly spelt wheat is another hardy crop with some potential to grow at altitude (M. Jones 1981, 106-7), and to thrive in the climatic conditions of the first millennium bc (Mercer 1984, xix). There is evidence for its presence in Wales; for example, in southern Dyfed at Iron Age settlements on Pembrey Mountain (Hillman 1981, 25-80), and possibly at Penycloed, Llangynog (Nye 1985, 108), while it definitely appears to have been produced at the late Iron Age and Romano-British settlement of Cefn Graeanog, Gwynedd (Hillman 1984, 142-3; White 1978). Each of these sites, however, is located at under 150m OD.

In conclusion, therefore, grazing continues to be the principal resource of the survey area through the first millennium bc into the proto-historic epoch, but an episode of cultivation is indicated by the palaeo-environmental data which can be associated with the evidence for stone clearance. Suggested diversification in the

cereal crops grown at this time makes cultivation still more feasible.

13.4.4 The Nature of Settlement in the Survey Area, Early to Mid-First Millennium bc to 400/500 AD

Turning to the character of settlement in the area during this period of at least one thousand years, it cannot be assumed that episodes of cultivation necessarily imply permanent occupation. Spring-sowing towards the environmental limits of cultivation is probable (Hillman 1984, 147). Hence, the sowing to harvesting cycle may have been completed in a period of occupation coincidental or partially overlapping with seasonal grazing and transient occupation. As already noted, the anthropological record shows that the practices are not mutually exclusive (Cribb 1991, 17-18) while the historical record for transhumance in the British Isles demonstrates how cultivation at altitude was undertaken as an activity ancilliary to animal husbandry on summer grazing (11.6.6 above).

On the other hand, in relation to an economy apparently heavily tilted towards animal husbandry, it is noteworthy that pastures on the ridge flanks of the Brecon Beacons are at present regarded as nutritious for sheep at all times of the year while the ridge-tops have a more restricted all-year-round grazing potential (Crampton 1966b, 74-5). This is particularly relevant when considering the character of settlement in the context of the suggestion that sheep

were an important element in the economy of this region in the latter part of the first millennium bc (13.2.1 above).

The importance of sheep, however, is assumed rather than proven, and cattle may have been equally or more significant, or they may have been kept as part of an integrated pastoral economy helping to improve pasture for sheep (Broadbent 1981, 84-5). Further, the status involved in the possession of cattle in Celtic society extended their role beyond the strictly economic, as is well illustrated by reference to early Ireland (Lucas 1989, 3-4).

Whether cattle could have been over-wintered on the slopes of the survey area would have depended primarily on the availability of feed for the perhaps six or seven months of the year when local pasture would not sustain them (Broadbent 1981, 85; Hughes and Huntley 1988, 91). Provision of shelter appears not to be a critical factor except for young animals (Broadbent 1981, 89; Noddle 1989b, 31-3). Up to 15 kgm of hay may be needed per head of cattle per day for winter feed (Reynolds 1987, 56). Little is known of the practicality and extent of hay-making in later prehistory, but winter grazing could have been supplemented by cereal straw, and other locally produced feeds in addition to hay (Noddle 1989b 31-2). Oats, if grown, would have been particularly valuable (13.4.3 above). Historical information on upland land-use indicates that cattle husbandry sometimes continued on high altitude pastures through the winter, albeit at a decreased stocking rate, with the over-wintering of non-milch stock to relieve pressure on resources

at the principal holding (11.5 above). Further there is the possibility of "inverse transhumance" with stock, which could not be supported locally, being transferred to other zones, a practice attested into the present century on the Black Mountain, at least for sheep (E. Davies 1936-37).

In total, this does suggest that all-year-round occupancy of the slopes of the survey area is a practical possibility that should at least be entertained, at least during episodes when complementary cultivation is attested. The careful integration of palynological studies and archaeological investigation in the uplands of Arduwy, Gwynedd, led to the conclusion that the late first millennium bc enclosed homesteads of Erw-wen and Moel y Gerddi (6.3.4 above) were permanently occupied, although the landscape may have been exploited on a seasonal basis at other times either side of this period (Chambers *et al* 1988, 343-7).

The diversity of settlement forms within the survey area assigned to this period - the isolated small house circles, larger house circles often in proximity to clearance features, the house circles incorporated within the enclosure on Drysgol, and the enclosed homesteads - can suggest similar variability in the character of settlement over time.

As noted above (13.4.2.), the smaller house circles which have a wide altitudinal distribution up to 400m OD, and which are not usually associated with evidence of stone clearance, could be the

shelters of those tending stock on a seasonal basis. They might have had a long currency into proto-historic times. The scale of these structures is indicative of episodes of stock transference under the supervision of a herder rather than transhumance involving more substantial social mobility. The larger house circles and enclosed homesteads, if used on a seasonal basis, may have served as accommodation for an element of a kinship group in an agro-pastoral transhumant cycle which could, in many respects, have resembled that recorded in recent historic times (11.6 above), although there are unknowns such as proprietorship. However, grazing as a low productivity resource may have been held in common, while plots and homesteads which required the investment of labour may have belonged to an individual or family group (10.2.5 above). The appearance of widespread nucleated settlement in the archaeological record from the first millennium bc, together with increasingly degraded upland zones, would argue against still more mobile nomadic seasonal cycles. If there were episodes of permanent settlement in the survey area during this period, then the presence of both unenclosed and enclosed homesteads (if they happen to be contemporary) may reflect differences in status or wealth, different emphases in agro-pastoral activity, or simply personal preference as to settlement form.

13.5 SUMMARY OF LAND-USE FROM LATE SECOND MILLENNIUM bc TO c. 400/500 AD

By way of conclusion, although it is difficult to link the scheme of land-use with chronological precision to the wider

environmental and archaeological context (13.2.1 above), the suggested pattern of economy and settlement accords reasonably well with that for the Welsh uplands, at least as it is currently understood, during the later Iron Age and Romano-British period.

It is, though, noteworthy that the relatively short episode of landscape partitioning proposed towards the end of the second millennium bc, which wanes with climatic deterioration into the first millennium bc, cannot be widely paralleled in the Welsh uplands. However, the disappearance of long-standing ritual traditions, followed by a period to which it is difficult to assign archaeological sites, is in keeping with the wider picture in Wales, as is the appearance of house circles and enclosed homesteads sometime later in the first millennium bc if not earlier. Dating is elusive for such settlement forms which may well continue through the period of Roman occupation. This settlement is probably associated mostly with animal husbandry but there is a phase in which cultivation assumes greater importance, although the arable activity may have been as much concerned with the production of winter feed as with cereals for human consumption.

During this period, the nature of settlement in the area could have changed several times. On the basis of historical analogy, fluctuation along a continuum of seasonal to permanent occupation (with intermediate stages of occasional over-wintering) is a possible model (11.6.8 above). Towards the end of the second

millennium bc, some occupation, in the surrounding locality at least, was likely to be on a permanent basis, associated with the linear banks partitioning the landscape at the north-west edge of the survey area (13.4.2). With changes in the intensity of land-use following the climatic deterioration early in the first millennium bc, the emphasis may have shifted to seasonal settlement only. However, later in the first millennium bc and during the early centuries AD, episodes of permanent occupation seem feasible in association with cultivation linked to some over-wintering of stock (13.4.4 above).

Collaborative social relations between households, which are likely to have been connected through kinship, would have facilitated the dynamics of settlement and subsistence in this upland zone. Also, a framework of wider political control almost certainly underpinned the upland area's integration into the wider regional economy which was probably necessary to underwrite activity in the more unpredictable circumstances of the uplands (Fleming 1985, 131-4 and 10.2.5 above). Suggestions of tribal organization can be made as far back as the late second and early first millennia bc (Burgess 1980a, 248-9), but it is not until towards the end of the first millennium bc that it becomes possible to indicate a potential local regional context for this upland area (13.6 below).

13.6 A LATER FIRST MILLENNIUM bc AND EARLY PROTO-HISTORIC REGIONAL CONTEXT?

The Iron Age settlements at Erw-wen and Moel y Gerddi in upland locations in north-west Wales are seen as relating socially and economically to a near-by hillfort (Chambers *et al* 1988, 344). Hillforts are rare in the hinterland of south-west Wales away from the coastal belt. The survey area is central to a zone largely devoid of defended settlement. The closest defended enclosures are in the Towy Valley to the north-west (fig. 13:2). Some of these are very much larger in size than those in the littoral zone (G. Williams 1979, 18), and have been viewed as regional centres (G. Williams 1988b, 43; G. Williams *et al* 1988, 11).

The nearest defended site to the survey area is Carn Goch, an exceptionally large 16ha stone-walled enclosure on the southern flanks of the Towy valley, about 6km north of the survey area, around which several other smaller hillforts are grouped (Hogg 1974) (fig. 13:6). The extent of the enclosed area at Carn Goch, including a 4ha annexe, may indicate a concern with the security and management of stock which would accord with the primarily pastoral economy suggested for the inland massif in general (G. Williams 1988b, 31-33). It is entirely possible in view of the absence of other candidates that the Carn Goch complex was a focal point in the later first millennium bc for the regional economy within which exploitation of the survey area would have taken place.

LARGER DEFENDED ENCLOSURES
IN DYFED

- Sites enclosing 1.2 to 1.99 Ha.
- Sites enclosing 2.0 to 5.0 Ha.
- ⊙ Sites enclosing above 5.0 Ha.

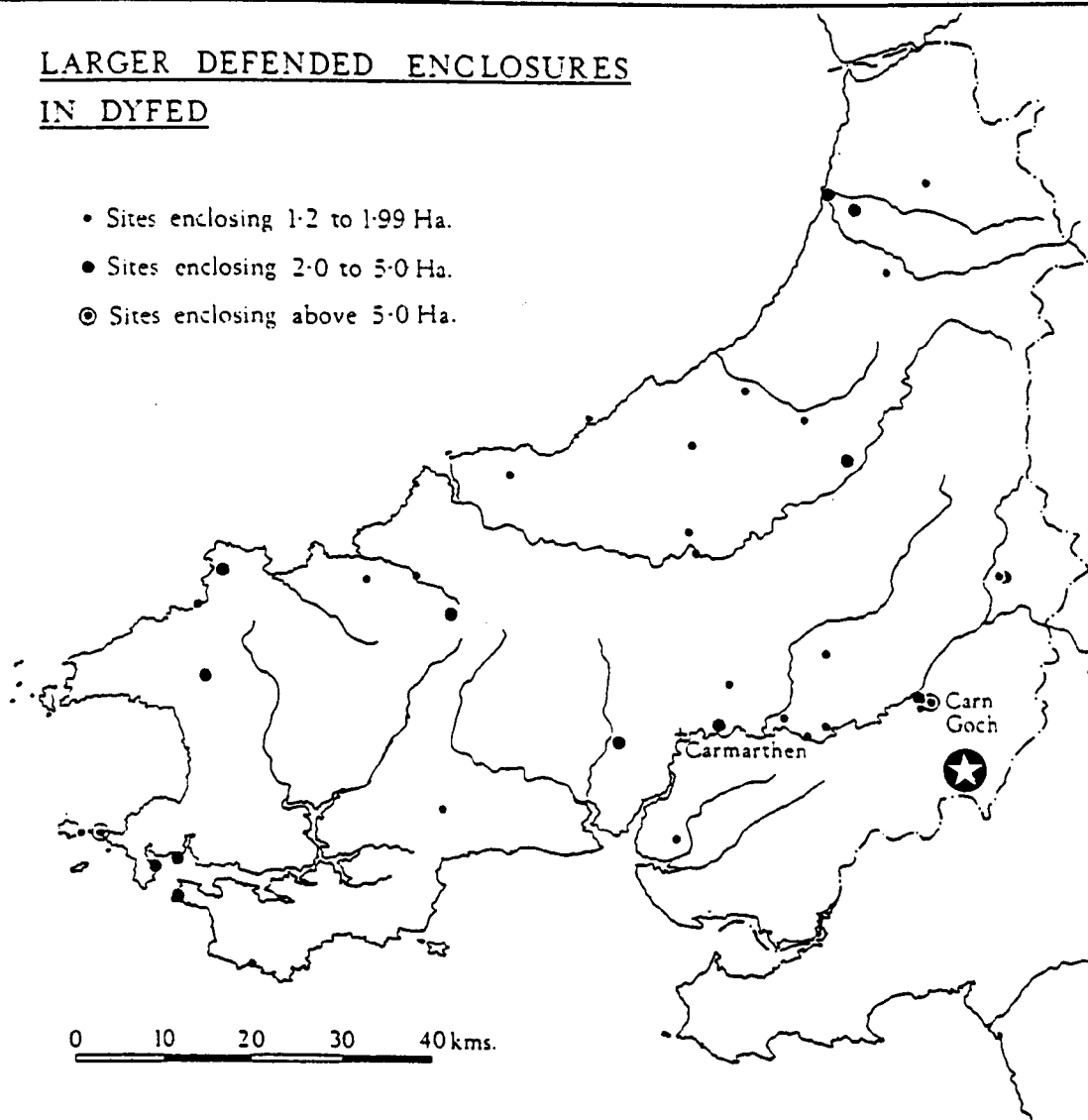



Fig. 13:6. Larger defended enclosures in Dyfed showing the location of the survey area  in relation to the complex of defended enclosures at Carn Goch (taken from G. Williams et al 1988, figure 1 with minor modifications).

Significantly, one of the more Romanised rural settlement sites in south-west Wales, Llys Brychan, lies close to Carn Goch (13.2.1 above) (figs. 13:5 and 13:6). This perhaps indicates the presence of an on-going economic and social focal point (James and Williams 1982, 308) which was capitalising on the fertile Towy valley to the north and the resources of the uplands to the south and south-east. The survey area was almost certainly located within the east to south-eastern margins of the territory of the Romano-Celtic *Demetae* (Jarrett and Mann 1968, 166-7) (fig: 13:1), which supports a view of the local upland economy looking to the north and west towards the *Demetaean* territory in the Towy valley for its regional support.

CHAPTER 14: LAND-USE FROM
APPROXIMATELY 400/500 AD
TO 1500/1600 AD

14.1 LAND-USE FROM c. 500AD to 1100AD

14.1.1 The Historical Context

In terms of the nature of the available evidence, Wales emerges during the first half of the first millennium AD from a proto-historic epoch into a truly historic period. The character of, and very specialised challenges of using, the historical sources which relate to the second part of the millennium have been described elsewhere (G. R. J. Jones 1972, 283-8 and 1989; W. Davies 1982, 198-216), and will not be rehearsed here in an account which will continue to remain mostly a critical assessment of archaeological data, albeit now set against a historical backcloth. It is noteworthy, however, that for the first time questions of land tenure, and their economic and social context can be discussed other than from a theoretical perspective. A most important source for this is the books containing Welsh customary law. The earliest of these, however, cannot be dated before the thirteenth century (G. R. J. Jones 1989, 177), and the extent of their relevance to preceding centuries is debated. The tribal social order with a noble elite, the importance of kinship and descent, and the political history have been summarised for Wales as a whole by Professor Wendy Davies (1982), and for the region around the survey area by Sir John Lloyd (1935b).

There is little suggestion of anything other than a subsistence economy during this period, and the historical evidence promotes

an ideal agricultural base of mixed farming (W. Davies 1982, 31-5). Regional patterns, and the balance between arable and pastoral, are difficult to detect from data which usually refer to lowland regions and which indicate a generally successful subsistence strategy (W. Davies 1982, 35-6). Although the emphasis was on obtaining food through production, redistribution did take place via processes which included raiding and looting (W. Davies 1982, 31).

The agricultural economy seems to be based on an organized pattern of landholdings, which have been termed "estates" on account of their size, most falling between 100 and 1000 acres. These were of great tenurial complexity with proprietors, tenants and bonded workers all drawing on the resources of the estate (W. Davies 1982, 42). It has been suggested that estates were grouped together (forming 'multiple-estates') to maximize exploitation of resources (G. R. J Jones 1972, 308-20), although it is debatable whether this phenomenon existed in the earlier part of the period (W. Davies 1982, 43-4).

An estate contained both pastoral and arable land, the latter usually at lower altitude adjacent to the main settlement foci of which there were usually several. Uplands and lowlands were exploited as an integrated whole, with a transhumant pattern suggested for stock husbandry. Stock were taken to the upland common grazing grounds during the summer months while crops were cultivated at the main settlement. Arable farming continued to be

significant throughout this period (G. R. J. Jones 1972, 38), and in periods of difficulty, seasonal cultivation in the uplands would have been undertaken, with spring-sown oats favoured (G. R. J. Jones 1972, 355-8). Estates, particularly when inter-linked, could have provided a basis for a mutually supportive regional economy integrating resources of areas of lower and higher elevation (G. R. J. Jones 1976, 16).

Continuity has been suggested in the organization and administration of estates from the late Roman period (G. R. J. Jones 1972, 376), their boundaries following earlier patterns of tenure and proprietorship, together with ecclesiastical boundaries. However, the continuity of the larger land holdings has been challenged on the basis that it implies too much consistency over centuries of considerable political and demographic change. It has been suggested that by the ninth century AD, in the south-east of Wales at least, larger estates were fragmenting into smaller independent land-holding units (W. Davies 1982, 45).

14.1.2 The Archaeological Context

The archaeological evidence for settlement at this period is scarce everywhere in Wales, and is particularly elusive in the uplands (Edwards and Lane 1988). In south-west Wales settlement evidence is virtually confined to the lowland coastal littoral, and the distinction between ecclesiastical locations and settlements proper is frequently blurred (James and Williams 1982, 304-6).

Something is known of 'high-status' settlements (Alcock 1964-5) and recent work has focussed on such sites, defined by rich metal objects and/or imported pottery and glass, such as Dinas Powys in Glamorgan (Alcock 1963), Hen Gastell, Briton Ferry, also in Glamorgan (Wilkinson 1991), and Longbury Bank, Dyfed (Lane and Campbell 1988), or, in the case of Llangorse Crannog, Powys, the unusual form of settlement construction (Campbell and Lane 1989).

Virtually nothing, however, is known as to the form of settlement of 'lesser status' in South Wales (Knight 1984b, 325-8). It has been noted that between the end of the period of Roman occupation and the mature Middle Ages in north-west Wales settlement structures evolved into a dominant rectilinear form (Crew 1984). It is suggested that this was the result of morphological development during the sub-Roman period and the early Middle Ages within the category of enclosed homestead site which contains both annular and sub-rectangular forms. This development remains largely undetected on account of the paucity of excavation yielding clear chronological markers (Crew 1984, 320). Some slight evidence in support of this view has been forthcoming from recently excavated homestead sites in north-west Wales which have, albeit intermittent, post-Roman occupation (6.3.4 above). A similar suggestion has been made for the development of house forms in South Wales during this period (Savory 1989, 171).

Archaeological evidence for the subsistence-base is equally scant. Data from 'high status' sites is difficult to interpret on account

of sampling and analytical procedures (Chaplin 1975) and may not conform to historical information (Alcock 1975). The heavy emphasis on stock raising may well be misleading on account of the special character of these settlements, and the importance of arable farming may be understated in the archaeological record (Alcock 1964-65).

14.1.3 Land-use within the Survey Area, c. 400/500 AD to 1100 AD

The data allows only very limited consideration of land-use within the survey area during this period. In terms of Cloutman's palaeobotanical sequence this period spans late *Phase 5* and early *Phase 6*. By the early part of *Phase 6*, heather is being replaced by grassland reflecting the on-going transition to the present-day degraded landscape, with continued regional deforestation. The pollen data are interpreted as indicating an intensification of grazing, although cereal pollen is also present (2.5.4 above).

None of the settlement forms can be assigned with any confidence to this period on the basis of the currently accepted chronologies (Table 9:1). However, Crew's suggested morphological development of settlement through this period towards essentially rectangular structures (14.1.2 above), would allow elements of both the enclosed homestead category (6.3 above) and the very numerous rectangular buildings (Chapter 7 above) to fall within this epoch. Alternatively, if the survey area is only being exploited on a seasonal basis, the explanation for the absence of obvious settlement forms could lie in the insubstantial character of the

seasonally used/built structures, which, it has been suggested, might resemble the slight timber huts described by Giraldus Cambrensis (G.R.J. Jones 1972, 356). Such structures would be appropriate to the herder supervising stock transference rather than other forms of transhumance involving significant communal participation (10.4 above). This may be relevant to the suggestion that exploitation of summer grazing differed from that during the earlier Medieval period compared to later historic times (11.2 above) (W. Davies 1982, 40-1). However, there is little basis at present, archaeological or historical, on which to take forward the discussion although, speculatively, seasonal grazing may have involved smaller rather than larger numbers of people staying in the uplands with the herds.

A detailed case has been made out for the existence at around 800 AD of an early multiple-estate, Maenor Meddyfynych, within and around the flanks of the Loughor Valley immediately west of the survey area, centred on Llandybie (G. R. J. Jones 1989, 186-9). This raises the possibility that activity within the survey area could have been integrated within relatively large-scale and cohesive economic organizations in the region, part of multiple-estates similar to Maenor Meddyfynych.

By the tenth century, most of the survey area fell within the administrative unit or *commote* known as Perfedd which occupied an area from the River Towy south to the Black Mountain (14.3.7 below). In the early fourteenth century this is known to have been

sub-divided into the *maenors* of Myddfai, Llandeusan, Gwynfe and Vabon (D. L. Evans 1935, 235), which were perpetuated into the Post-Medieval period (figs. 14:1 and 14:2). These *maenors*, essentially Welsh units of fiscal management in origin, may equate with multiple-estates around which the exploitation of the area was based prior to around 1100 AD although the extent to which the *maenors* were manifestations of earlier estates is uncertain (W. Davies 1982, 43-4). This suggestion is worth further consideration since it echoes the relationship suggested with the southern flanks of the Towy valley during the later prehistoric and Roman periods (13.6 above), based on the premise that the exploitation of less productive landscapes is best pursued within the context of regional economies (10.2.5 above).

14.2 INTRODUCTION TO LAND-USE FROM c. 1100 AD to 1500/1600 AD

Most of the fifty-plus rectangular buildings, often accompanied by ancilliary structures, are likely to fall within this period indicating a distinctive phase in the use of the landscape (9.2 above and Table 9:1). The difficulties of characterising the different types of building, and of assigning them with precision to a chronological sequence within this period have been indicated (7.6 above).

This period of five or six hundred years is distinguished by a markedly increased amount of historical information. Much is known about political change. There is also information on social organization, land tenure, subsistence and trade. However, although

historical sources provide a broad brush with which to paint a general picture, their ability to fill-in detail at a local or regional level is often restricted, and allowance needs to be made for variation and deviation. This point is particularly relevant to the present enquiry. Generally, there is much more comprehensive information available for activity at lower elevations, particularly around the coast and river estuaries, compared to the upland zone. This reflects the distinction between the lowland Englishry containing the more productive land which was more closely administered compared to the less desirable upland Welshry (14.3.1 below). Further, it is apparent that many aspects of activity at lower elevation differed from that in the uplands. Therefore, ideas and conclusions about the former cannot be transferred wholesale to the latter. Additionally, the history of these centuries is one of multi-causal change and transformation (14.3.6 below) to which the archaeological record, with inherent imprecisions of chronology, can rarely be integrated at any level of detail.

Therefore, although there is historical information which either occasionally directly relates to the survey area or is relevant by analogy, historical data generally provides only a loose framework within which to discuss the significance of the field-evidence for settlement and land-use thought to date to this period.

The absence of historical guidelines for the interpretation of evidence for upland settlement and land-use at a local level has

led to the use of general models of analysis by historians, as well as geographers and archaeologists. These have emphasised seasonality of exploitation (10.3 above), and the influence of demographic and climatic change (Austin 1989, 234-8).

Discussion of settlement and land-use in the survey area will be preceded, by way of background, firstly by an outline of the historical context, both for Wales generally and for the local region (14.3 below); and, secondly, consideration of the role of seasonal exploitation as well as the potential influence of climatic and demographic change at this time (14.4 below).

14.3 HISTORICAL CONTEXT FOR LAND-USE FROM c. 1100 AD to 1500/1600 AD

14.3.1 Political Change

This period encompasses considerable political change (see Walker 1990 for an up-to-date survey). Only the general framework is necessary here. The initial Norman incursions into Wales in the late eleventh century led to the "Conquest" by Edward 1, completed by 1282. The Norman lordships in South Wales were divided into two zones, the Englishry and the Welshry. The imposition of Norman rule and consequent changes had much more effect in the Englishry than the Welshry. The boundary between the two zones was around the 200m contour (Huw Owen 1989, 199). The Welshry was characterised by the survival of traditional social organization and legal practices. It provided the base for periodic unrest and rebellion,

most notably under the leadership of Owain Glyndŵr in the early fifteenth century. The Act of Union in 1536 formally extinguished surviving Welsh legal traditions.

14.3.2 Society

A basic distinction can be drawn between two elements in Welsh society of this period, the unfree bondsmen and the free-tribesmen (R. R. Davies 1978, 354-91). The unfree bondsmen had provided customary services on the lands of a local lord, generally in the lowlands, in a way which was near-manorial in character (Jones Pierce 1972b, 342-3). They continued to do so after the conquest in the essentially lowland areas of the Englishry. Free-tribesmen, however, predominated in Welsh society (R. R. Davies 1978, 354) particularly in the uplands, or Welshry.

14.3.3 Welsh Land Holding and Settlement

One of the most important practices which the free-tribesmen maintained through the protracted period of English conquest and beyond was a form of land tenure, the *gwely*.

The complex origins, character and development of the tenurial system of the free-tribesmen in Wales in the Middle Ages have been extensively discussed (eg. Jones Pierce 1972a and 1972b; Rees 1925, 199-214; G. R. J. Jones 1985). *Gwelys* were the joint proprietary units of the several clans or kindred groupings which made up the tribe living within the tribal district or *tref* (Jones Pierce 1972b, 339-42). The *gwely* comprised the descendants of an

ancestor to the fourth generation through the male line. It held *collectively* arable land and specific areas of pasture, and rights to pasture on common land which were indivisible (W. Rees 1924, 206; G. R. J. Jones 1985, 156). The years around 1100 AD are formative in the emergence of the *gwelys* as a significant development of past practice by the upper echelons of Welsh society. This was in response to several factors, including general demographic expansion and a need to reorganize land holdings in such a way that tenure could be more readily asserted and defended against Norman encroachment (W. Rees 1924, 206; G. R. J. Jones 1965, 47-8; Jack 1980, 270).

The tenure of the *gwely*, based on ownership in common, contrasted with the English system of individual ownership. English tenurial practice increasingly began to be adopted, particularly from the later fourteenth century, though there was regional variation in the decline of Welsh land law (R. R. Davies 1978, 447-56). This will be discussed further below (14.3.6)

The settlement pattern developed in the form of homesteads within enclosures arranged at intervals in a 'girdle' around the open fields of the *gwely* lands (Jones Pierce 1972a, 332). The size, internal arrangements of the homesteads and their spacing varied. They could cluster in close proximity in hamlets, sometimes housing not only the proprietor but also under-tenants, and they contained substantial dwellings and ancilliary buildings (G. R. J. Jones 1985, 156-8). Although larger close groupings of homesteads

are in evidence in the uplands, settlement tended to be more dispersed than on low-lying, more open ground (Jones Pierce 1972a, 332). Arable farming took place on the *gwely* lands adjacent to the main settlement or *hendref*, while pastures held in common at a more distant location at higher altitude were grazed during the summer, perhaps from a temporary settlement or *hafod-tref* (W. Rees 1924, 217).

The *gwely* may have been a more potent force in North Wales than in the south where it was adopted later but not universally. There is little evidence for the settlement pattern in the Welshries of South Wales. It has been suggested that the land holdings and settlements of the free-tribesmen tended to be dispersed (M. Griffiths 1989, 236-7), although the settlement still visible at higher elevation in South Wales has been described as 'semi-nucleated' on account of the frequent loose clustering of structures (Butler 1971, 260).

14.3.4 The Character of Subsistence Agriculture

Although the historical evidence for agriculture in the generally upland Welshry is scanty and unevenly distributed, it indicates both the importance of local tradition and the dynamics of changing social and tenorial practices (C. Thomas 1975). Changes are seen as responses both to demographic and climatic catalysts (G. R. J. Jones 1965), and moves to establish a money economy involving the commutation of traditional services and returns into cash payments (Huw Owen 1989, 206).

Two studies from North Wales based on unusually detailed sources (Thomas 1968; Jack 1988, 476-9) demonstrate the interdependence of arable and pastoral farming (Jack 1988, 494-5). However, the undoubted variation in agricultural practice and economic circumstances through this period needs to be taken into account when using the figures from these studies, which only provide a local snapshot at a particular time.

Analysis of thirteenth century data from the relatively favoured land on the Lleyn Peninsula shows a fully integrated mixed economy in which the production of oats was five-and-a-half times that of the second grain, wheat, and involved three times as many households (C. Thomas 1968, 12-13). As regards quantities of stock it is suggested that the typical free-man in north-west Wales at the end of the thirteenth century would have owned three cattle, two oxen, a horse and five or six sheep (C. Thomas 1968, 8).

Jack's study of early fourteenth century townships in Merionethshire is particularly relevant since the land was in the uplands and relatively marginal in character. In the six townships, seventy-seven households owned 411 sheep, 240 affers, 124 oxen and 462½ cows, and 3490 bushels of oats were grown. Analysis showed that, although some households did not grow crops, cultivation was widespread (Jack 1988, 476-8).

The data from North Wales, at least, suggest that generalisations about agrarian lowlands and pastoral highlands are unsustainable

(Jack 1988, 478). Concentration on oats as the main cereal, in part for use as feed, did however, reflect the needs of communities in which animal husbandry was particularly important (C. Thomas 1968, 12; Jack 1988, 474). The suitability of oats for cultivation in the more marginal upland landscapes has already been noted (13.4.3 above).

Cattle, oxen, horses, sheep, goats and swine all figure in the record for the Welshry. In North Wales, it is suggested that across contrasting environments and communities, cattle appear to be the most important animal in the fourteenth century (C. Thomas 1975, 31). In the southern Welsh uplands, too, cattle seem particularly important in the early fourteenth century, a conclusion based on confiscation returns made after the defeat of the rebellion by Llywellyn Bren in 1316 (Jack, 1988, 493). The size of the herd of the average tribes-man in north-west Wales noted above (C. Thomas 1968, 8) is placed in perspective by the number of cows owned by a Welshman of high status such as Llywellyn Bren. He possessed 374 cows, half the number seized, which were accompanied by considerably higher proportions of all other animals compared to his followers (Jack 1988, 493-4). Although cattle seem to have been almost universally present in the pastoral regime, sheep initially were less so. The larger flocks tended to concentrate on the estates of the Cistercian Order, although wool production became more widely important from the later fourteenth century (Huw Owen 1989, 215-6).

14.3.6 The Fifteenth Century 'Transformation'

There were many changes in aspects of Welsh life in the centuries under consideration. These combine in the fifteenth century to effect what has been described as a "transformation" in Welsh society (R. R. Davies, 425-56). Amongst the principal interactive agents of change was the in-built weakness in the Welsh tenurial system on account of partible inheritance, as well as plague, rebellion and depopulation.

On account of partible inheritance amongst the sons under the law of gavelkind, the lands held by the *gwely* became morcellated and dispersed across the tribal territory (Jones Pierce 1972b, 341). To begin with, the integrity of holdings could be maintained by expansion on to unutilised land, but once the limits of viable new land had been reached, fragmentation was inevitable. Widespread morcellation had adverse consequences for the efficiency of the agricultural economy (R. R. Davies 1978, 370-1; Jack 1988, 432).

Legal devices were found to circumvent bars on the alienation of tribal land, creating a property market which led to some reconsolidation of holdings and the establishment of small estates by wealthy individuals. As a result, by the fifteenth century, the *gwely* system was in decline, although in the remoter parts of the hinterland of South Wales individual and common ownership co-existed through the fifteenth century (Willis-Bund 1902, vii). Sub-division through partible inheritance also remained prevalent through into the sixteenth century and beyond (M. Griffiths 1989,

233-4). The tenacity of Welsh customary law is shown by its operation in remote eastern Camarthenshire in the early sixteenth century (Jenkins and Owen 1982, 24-5). It continued to be observed extra-judicially after its formal abolition by the 1536 Act of Union, as indicated by the contemporary comments of George Owen in late sixteenth century Pembroke (1892, 61), and it still continued to impede effective husbandry in succeeding centuries (Colyer 1976, 3).

Depopulation through pestilence and rebellion contributed further to the increasing market in land by the early fifteenth century. Depopulation also meant that there were fewer people to work the land which accelerated a move away from customary practices of land holding as well as a move towards the commutation of customary services for cash payments. Arable land was converted to pasture which could be better managed by the smaller workforce. A pastoral regime was also encouraged both by an expansion of the cattle trade with England and an increased demand for wool to be used for cloth production in Wales (R. R. Davies 1978, 425-55; Huw Owen 1989, 206-16; G. R. J. Jones 1965; Jack 1988, 446).

Encroachment on common grazing and waste paralleled the consolidation of holdings into small individually owned estates through the fifteenth and sixteenth centuries. Locations that had previously been the focus for summer grazing sometimes became the nucleus for permanent farms. This seems to have resulted from the combined need for more grazing for the expanding pastoral economy,

continued fragmentation of holdings in areas where customary practice remained strong, and a population which was expanding once again from the early sixteenth century (M. Giffiths 1989, 233-8).

14.3.7 Historical Data Pertinent to the Survey Area

The historical sources allow the survey area to be placed for the first time within a regional political, administrative and economic framework which is something other than largely speculative. Most of the survey area falls within the *commote* of Perfedd, along with extreme western edge in the *commote* of Iscennen (Lloyd 1935b). These were sub-units of Cantref Bychan, royal administrative divisions of the Princes of Dinefwr, which probably developed in the hundred years or so before the Norman conquest (fig. 14:1) (W. Davies 1982, 132).

Although the Normans established a castle at Llandovery late in the eleventh century, and in theory held sway over Cantref Bychan, their authority through the first half of the twelfth century was very tenuous (Turvey 1990, 6-7). Cantref Bychan returned to Welsh jurisdiction under the Lord Rhys in the 1160s, but his death in 1197 weakened princely authority and instigated a period of political instability (Walker 1990, 90). It was not until the Edwardian conquest and the campaigns of 1276-7 that the area once again fell to the English, being brought within the Marcher Lordships (Walker 1990, 90 and 126-7; R. R. Davies 1978, 29).

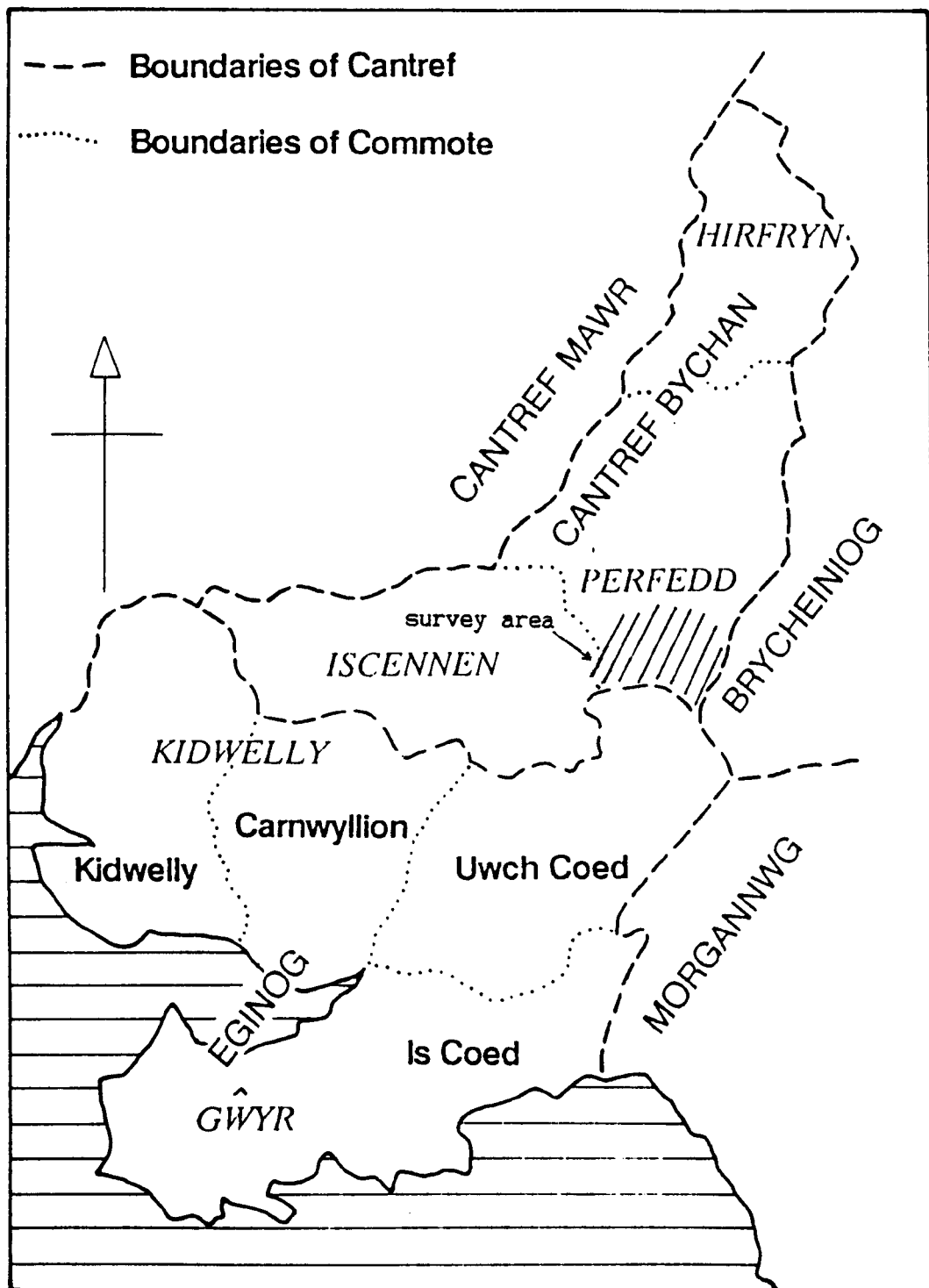


Fig. 14:1. Medieval administrative units around the survey area (taken from D. Rees 1991, figure 1 with minor modification).

Perfedd was then absorbed within the Lordship of Llandovery; Iscennen became part of the Lordship of Kidwelly (D. L. Evans 1935, 208; R. Griffiths 1972, 14-17; D. Rees 1991, 43-4). While the south-eastern boundary of Iscennen with the Lordship of Gower changed, probably in the late thirteenth or fourteenth century (D. Rees 1988), the boundaries of Perfedd were largely stable for tenurial purposes through the Middle Ages into the Post-Medieval period as illustrated by a mid-eighteenth century perambulations of the bounds (fig. 14:2) (Morris 1985, 60-61).

The *commotes* of Iscennen and Perfedd were populated predominantly by free-tribesmen in the fourteenth century (D. L. Evans 1935, 228). An extent of 1317 stated that the *maenors* of Perfedd were exclusively in the hands of free-tenants of whom there were about two hundred (D. L. Evans 1935, 235). The lowland settlement focus of Perfedd would have been north-west of the Black Mountain, as far as the River Towy, the Mountain forming the eastern edge of the *commote* (E. Davies, 1936-37). In recent centuries all land owners in the *commote* had rights of grazing within the boundaries of the *commote* on the Black Mountain. These rights are very likely derived from those held by tribal society under Welsh law, a system which persisted in the area, albeit gradually disintegrating, to the end of the Middle Ages (W. Rees 1924, 217; E. Davies 1936-37, 56-7).

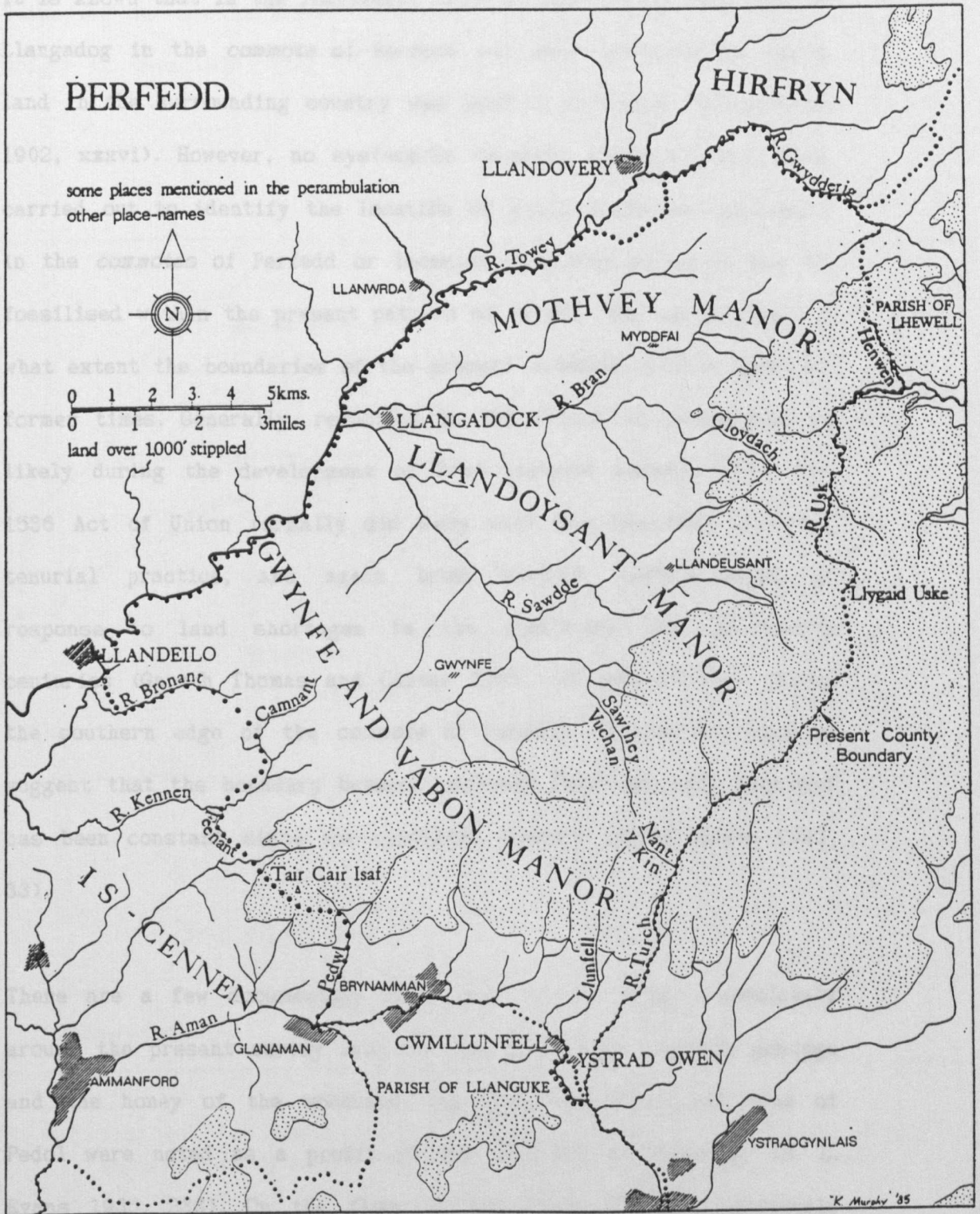


Fig. 14:2. Boundaries of the commote of Perfedd based on a mid-eighteenth century perambulation (taken from Morris 1985).

It is known that in the fourteenth century, land within the town of Llangadog in the *commote* of Perfedd was held individually, while land in the surrounding country was held collectively (Willis-Bund 1902, xxxvi). However, no systematic research seems to have been carried out to identify the location of *gwely* lands or settlement in the *commotes* of Perfedd or Iscennen, elements of which may be fossilised within the present pattern of farms. Nor is it clear to what extent the boundaries of the present commons reflect those of former times. Generally, reduction in the extent of commonland is likely during the development of Post-Medieval estates after the 1536 Act of Union formally did away with the remnants of Welsh tenurial practice, and again later through encroachment in response to land shortages in the eighteenth and nineteenth centuries (Gareth Thomas and Carter 1965, 145 and 151-3). Along the southern edge of the *commote* of Perfedd, documentary sources suggest that the boundary between enclosed land and open moorland has been constant since the sixteenth century (Bowen Evans 1991, 33).

There are a few documentary references to the areas immediately around the present survey area. In the fourteenth century, pannage and the honey of the woodland bee from the afforested area of Pedol were noted as a profit of the Lordship of Iscennen (D. L. Evans 1935, 233). On the floor of the Amman Valley immediately south of the survey area, there are indications of a Medieval settlement at about 200m OD known as Neuadd Wen perhaps accompanied by arable land. This was in the manor of Cae Gurwen

belonging to the Lordship of Gower and may be of pre-Norman origin (D. Rees 1991) (fig. 14:3).

Relationships between adjoining Lordships in the west were tense throughout the Middle Ages, with raiding, documented before the final Edwardian Conquest of the area in 1283, continuing well after

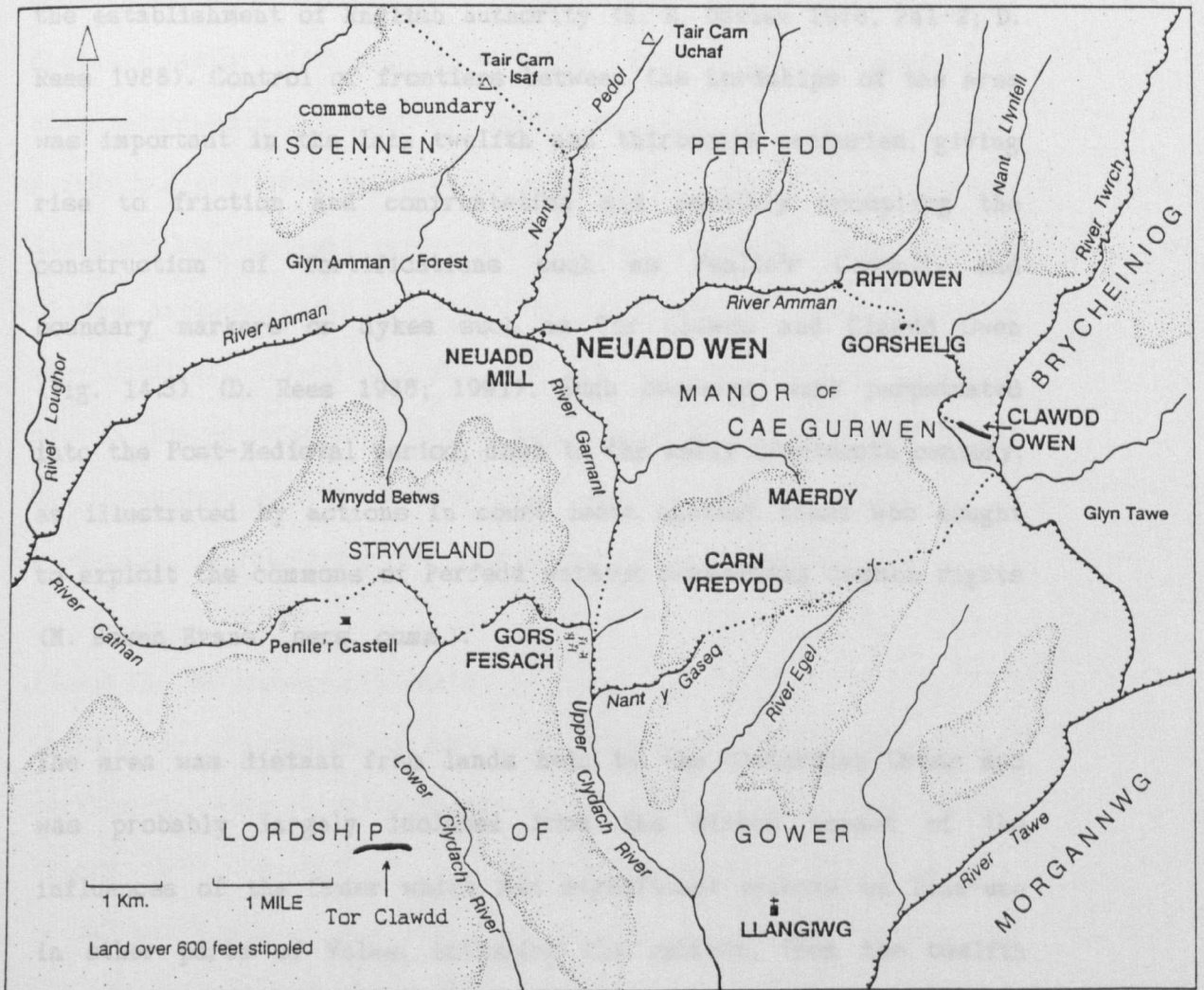


Fig. 14:3. The location of Neuadd Wen in the Lordship of Gower at the southern boundary of the commote of Perfedd (take from D. Rees 1991, figure 2, with minor modification).

Relationships between adjoining Lordships in the area were tense throughout the Middle Ages, with raiding, documented before the final Edwardian Conquest of the area in 1282, continuing well after the establishment of English authority (R. R. Davies 1978, 241-2; D. Rees 1988). Control of frontiers between the Lordships of the area was important in the late twelfth and thirteenth centuries, giving rise to friction and confrontation and possibly prompting the construction of fortifications such as Penlle'r Castell, and boundary markers or dykes such as Tor Clawdd and Clawdd Owen (fig. 14:3) (D. Rees 1988; 1991). Such concerns were perpetuated into the Post-Medieval period, down to the early nineteenth century, as illustrated by actions in court leets against those who sought to exploit the commons of Perfedd without possessing common rights (M. Bowen Evans *pers. comm.*).

The area was distant from lands held by the Cistercian Order and was probably largely isolated from the direct impact of the influences of the Order which had significant effects on land-use in other parts of Wales, including the uplands, from the twelfth century (W. Rees 1951, plate 35; D. H. Williams 1965), for example through the intensification of sheep farming (Huw Owen 1989, 215).

14.4 CLIMATE, SEASONALITY AND SETTLEMENT DYNAMICS IN RELATION TO UPLAND LAND-USE, 1100 to 1500/1600 AD

14.4.1 Introduction

As noted, seasonal exploitation is a favoured explanation for land-use in the Welsh uplands during the Middle Ages and early Post-Medieval period (14.2 above), although there are also suggestions that permanently occupied settlement advanced to higher altitudes during a short-lived improvement in climate (14.4.2 below). However, distinguishing between permanent and seasonal settlement in terms of the archaeological evidence for settlement at this period is very difficult (14.4.4 below). This may reflect a reality in which over a longer timescale distinctions between the permanent and the seasonal become blurred in the context of activity in landscapes of relatively low productivity (14.4.5 below)

14.4.2 The Influence of Climate

Correlation of changes in the distribution and nature of Medieval settlement with climatic change should be approached with caution (Parry 1978, 144-45). It has been stressed that other factors, social and economic, may have been equally significant in modifying the character and pattern of settlement in the Medieval period (H. Clarke 1984, 22-3; Bell 1989, 285-6). However, the effects of climate are accentuated with altitude (10.2.1 above). Therefore, the greater impact of climatic change on such landscapes is more likely to affect land-use and hence the nature of settlement

compared to lowland areas which are more tolerant of climatic change (Parry 1978, 146).

A short-lived phase of climatic amelioration, the 'Medieval Climatic Optimum', between around 1000 and 1300 AD (2.2.3 above), has been cited as permitting the extension of both permanent settlement and cultivation to favoured topographical locations within upland areas (Parry 1985, 47). Such expansion to higher altitude has been identified in Wales in the historical record (G. R. J. Jones 1965). It has been seen as a response to the combined impact of various factors such as population growth, the requirement for new land triggered by the adoption of the *gwely* which fostered morecellation of holdings through partible inheritance, and the pressures created by the Normans who acquired the best arable land at lower elevation forcing the Welsh to rely more on upland landscapes (Jack 1988, 269-70 and 443). Morcellation of land holdings can initially be seen as a positive adaptation, allowing the spread of the risks involved in pioneering cultivation in more marginal circumstances (10.2.5 above).

A climatic deterioration into the 'Little Ice Age' after around 1300 AD (2.2.3 above) has been held to contribute to a reduction in the viability of farming and settlement at altitude (Parry 1985, 47; G. R. J. Jones 1965, 50-1). However, an actual retreat of upland settlement on account of colder conditions may only have occurred in areas where cultivation was particularly important (Parry 1975, 12). Regional variations in agricultural regimes

across Britain may be significant in assessing the impact of climatic deterioration to which, anyway, the response may have been slow (Astill and Grant 1992, 224-33). The problem of determining the consequences of climatic change is illustrated by detailed information from North Wales where arable farming is still recorded at 300m in the early fifteenth century and at even higher elevations, around 350m, in 1562. On the other hand, while both summer and winter grazing is noted at around 400m in the early fourteenth century, by the mid-sixteenth century winter grazing was not deemed possible at such altitudes (G. R. J. Jones 1965, 49-51).

The effects of local topographical characteristics in determining micro-climates (2.2.5 above) may contribute to explaining such variations in the environmental extremes of land-use. However, other events in fourteenth century Wales tend to mask the consequences of climatic change. It is not possible to disentangle the effects of climate on settlement and land-use from factors such as depopulation caused by the Black Death, and the political unrest and revolt which continued into the early fifteenth century (Butler 1971, 254; Walker 1990, 168).

Also, the practice of partible inheritance was beginning to adversely affect efficient land-use during the thirteenth century. As has been noted (14.3.6 above), morcellation of the *gwely* lands apparently quickly reduced the effectiveness of the agricultural economy. Whatever the ecological advantages of spreading risk

across environmental zones (10.2.5 above), holdings became small and scattered (R. R. Davies 1978, 370-2), so that time spent travelling must have militated against the extraction of a reasonable return (Chisholm 1979, 33-45). This is likely to have been compounded by diminishing yields as a consequence of climatic deterioration from the thirteenth century onwards (G. R. J. Jones 1965, 51). The effects of falling yields may have been particularly severe for the Welsh tribesmen who had been forced to rely more on cultivation in the the upland zones after the Norman seizure of much of the land best suited to cultivation at low elevations (Jack 1988, 269).

14.4.3 The Seasonal Element in Upland Land-use and Settlement 1100 to 1500/1600 AD

Buildings of the Medieval to early Post-Medieval period in the uplands have often been associated with seasonal occupation, pursuant to the strategy of transhumance, and have been described as *hafodydd* or *lluestydd* although there is no one view as to the form of such structures (7.6.4 above). The potential diversity of structural types is confirmed by the survey of descriptions of seasonally occupied buildings and shelters in the Highland Zone of Britain from more recent historical sources (11.6.7 above). The interpretation of seasonal exploitation derives from the documented use of summer pasture in the uplands which can be traced back to the Earlier Middle Ages (G. R. J. Jones 1972, 356). The summer dwelling is the upland counterpart of the *hendre*, the permanent settlement adjacent to cultivated land at lower altitude which, in

the period after 1100 AD, focussed on the kindred-based *gwely* (14.2.2 above).

As has been noted, there is little documentary evidence for the detail of the practices associated with transhumance before the seventeenth century (11.6.2 above). Although references to temporary settlement on the summer pastures (W. Rees 1924, 217) imply that people stayed with the stock, the nature and scale of population dislocation is largely speculative. References to *vaccaries* at which the cattle of nobles were tended by full-time herders (R. R. Davies 1978, 115-16) indicate that stock transference to seasonal pastures is a likely possibility, in addition to transhumance practised within the context of family-based subsistence.

The ubiquity of transhumance in upland land-use and settlement at this period has not gone unchallenged by archaeologists. Ploughing in the uplands with a suggested Medieval date is taken as an indication of permanently occupied homesteads with a mixed farming economy (Briggs 1985, 302-6). It has also been argued more generally that the seasonal movement of population in the Welsh uplands during the Middle Ages and early Post-Medieval period has been over-emphasised; that many upland settlements were not just occupied during the summer; and that, although substantial seasonal movements did take place, they were not as universal as often envisaged, with daily movement of animals a more practical and common occurrence (Kelly 1981-82, 885-7).

14.4.4 An Archaeological Assessment of the Character of Upland Settlement c. 1100 to 1500/1600AD

It appears that in the earlier part of this period there was some expansion of permanent settlement in the upland zone which also continued to be exploited on a seasonal basis (14.4.2 and 14.4.3 above). It would, of course, be helpful in the analysis of land-use in any given area to be able to distinguish between permanently and seasonally occupied settlement, and attempts have been made to do so both through field survey and excavation.

In the North of England attempts have been made to distinguish between seasonal and permanent occupation solely on the basis of characteristics identified during field survey. Three criteria were considered significant in distinguishing seasonally occupied structures or shielings from permanently occupied structures or homesteads. Firstly, homesteads tend to stand by themselves while buildings claimed as shielings are grouped. Shielings are sited close to streams or along the boundaries of the grazing territories most distant from the permanent dwellings. Finally, homesteads are associated with cattle pens, stack stands for winter fodder and evidence for cultivation (Ramm et al 1970, 3-7). However, subsequent workers have found these criteria difficult to apply and it has been concluded that seasonal activity cannot be distinguished from permanent occupation at many sites on the basis of field survey alone (Charlton and Day 1979, 209-15).

In Wales, a three-fold division of upland Medieval settlement has been proposed; firstly, the occasional nucleated hamlet; secondly, isolated farmsteads (with the implication of all-year-round occupation); and finally, seasonal dwellings or *hafodydd* (Butler 1971, 257). The last two categories are of most concern in the context of the survey area, although the concept of semi-nucleation will be discussed briefly below (14.5.6).

The interpretation of excavated house sites in Wales, which bear comparison with those in the survey area, has used a diversity of criteria, not without some confusion and contradiction, to assess the seasonality or otherwise of occupation. These include siting, particularly with regard to altitude; the extent and character of cultural debris; and documentary evidence.

The buildings alongside the *Mant Criafolen*, in the Brenig Valley, Clwyd (7.4.5 above) were described as *hafodydd* without any documentary corroboration (Allen 1979, 3), apparently largely on the basis of tradition associating upland settlement with seasonal summer occupation (Austin 1989, 235). The buildings and enclosures were located at around 400m OD. Compared to many upland settlements, a notably rich range of material culture was recovered, including ceramics, a spur, a swordhilt-guard and a powder pan from a fire-arm, dating activity to between the late fifteenth and late sixteenth centuries AD (Allen 1979, 27-45). Much of the metalwork is similar to that which would be found at any Medieval rural site. However, the absence of items such as hasps, swivel

hooks, door pivots and hinges, is taken to support the claim of seasonal activity (Astill 1992, 45). The range of metalwork has also been interpreted as indicative that the occupants of the Brenig buildings were of relatively high social status (Courtney 1991, 253-4).

The house-platforms at Beili Bedw, St. Hermon, Powys (7.2 above), again with occupation in the fifteenth or sixteenth centuries, did not produce nearly such a rich material culture as the sites in the Brenig Valley (Courtney 1991, 253). However, located at between 330m and 360m OD, they are considered to have been all-the-year round residences essentially on account of their siting at much the same altitude as an adjacent modern farm (Courtney 1991, 249).

Opinion is divided as to the character of the occupation of the Gelligaer Common platform houses (7.2 above) (Robinson 1982a, 114). Lady Fox, who excavated the sites, thought the group of three buildings on Graig Spydydd to have been occupied permanently on the basis of evidence for iron-working (A. Fox 1939, 172). A little pottery of thirteenth and fourteenth century date was found, although the only finds from the two house platforms at Dinas Noddfa, also on Gelligaer Common, were some iron slag and a whetstone (A. Fox 1937). Peate considered these structures to have been summer dwellings only, on account of their high altitude location at around 400m OD and the paucity of finds which he thought suggested only seasonal activity. He did not view metal-

working as conclusive evidence for permanent occupation (1946, 128). Butler seems to follow Lady Fox's interpretation by including these buildings in his grouping of upland farmsteads (1962, 35; 1971, 260), although latterly qualifying this view with a statement that the houses were occupied permanently before the Black Death (1988, 957), therefore apparently leaving open the possibility of later seasonal occupation.

It has been argued that the structure of platform houses in North Wales is equally suited to both seasonal and permanent occupation (Gresham 1954, 41). The scale and situation of the group of four substantial platform buildings at Cefn Graeanog, Gwynedd (7.2 above), located at around 150m OD, suggested a permanently occupied farm in the twelfth and thirteenth centuries (Kelly 1981-82, 885-7). The range of cultural debris and evidence for local cultivation of crops was taken as support for this view.

The compartmented building on Bodafon Mountain, Anglesey (7.3.11 above), is interpreted as a farmstead (Griffiths 1955, 23), with implications of permanent occupancy (Butler 1971, 257), despite an absence of any material culture at all. The slight "occupation layer" and almost total absence of finds at the compartmented building on Penmaenmawr, Caernarvonshire (7.3.11 above), was initially interpreted as either an indication of a short period of occupation or seasonal usage (W. E. Griffiths 1954, 83), although a categorisation of the site as a farmstead has subsequently been

preferred on the basis of limited historical evidence for sixteenth century land-use in the area (Butler 1971, 257).

The rectangular foundation at Bwlch y Hendre, Cardiganshire (7.4.5 above), has been considered a *hafod* because of the absence of finds and some historical data for seasonal land-use in the vicinity (Butler 1963, 402-6; 1988, 956), but elsewhere it has been included in the farmstead grouping (Butler 1971, 259) with implications of continuous occupation. Seasonal usage was argued for a group of buildings at Aber in Caernarvonshire (7.4.5 above), located at about 180m OD, because of a correlation between the site and documentary evidence for summer pasturage, as well as a siting deemed appropriate for a *hafod* and general local land-use considerations (Butler 1962, 32-6). These buildings produced little in the way of cultural debris apart from one possible Medieval pottery sherd and the remains of eight eighteenth and nineteenth century vessels (Butler 1962, 29-31).

To summarize, a paucity of finds is sometimes taken as an indicator of only seasonal activity (eg. Penmaenmawr and the Gelligaer sites) although paradoxically the relatively rich cultural assemblage in the Brenig Valley did not prevent interpretation of that site as a *hafod* simply on the assumption that it related to seasonal activity. Still more confusingly, relative material poverty has not prevented other structures being interpreted as permanently occupied farmsteads (eg. the Gelligaer sites, Bodaon and Penmaenmawr). Limited historical evidence has been used to

bolster interpretations but it can rarely be said to relate with assurance to the excavated structures as such, only to general land-use in the area (eg. Bwlch y Hendre and Penmaenmawr). High altitude location has been viewed as both a barrier and no bar to permanent occupation (eg. the Gelligaer sites and Beili Bedw), while lower altitude locations, below 200m OD, have been seen as an indicator of permanent settlement (eg. Bodafon and Cefn Graeanog) but not necessarily excluding seasonal activity (eg. Aber). In the case of the house platforms, their structure is considered equally suitable for both seasonal and permanent activity.

While the cumulative evidence of structure, siting, material culture, and economic data can persuasively suggest a permanently occupied farmstead, as at Cefn Graeanog, the poor quality of evidence from most excavated sites, and the inconsistency of its interpretation, strongly argues against didactic conclusions regarding the character of settlement at these structures of broadly Medieval date. This is reinforced by the long timespan covered by the excavated structures, between the thirteenth and sixteenth or seventeenth centuries, with the potential for changes in the pattern of land-use and associated settlement through time.

14.4.5 Upland Settlement Dynamics

The ambiguity of interpretation regarding the permanence or seasonality of occupation at Medieval upland settlements in Wales and elsewhere is unsurprising in the context of the general problem experienced by archaeologists in addressing this question (10.5

above). A major difficulty lies in the absence of archaeological evidence for the character of a settlement structure on *gwely* land, typically at lower elevation within the upland zone. Hence, there is no yardstick against which to measure the buildings which are investigated, invariably in the upper part of the zone.

The ambiguity in the excavated data may mirror a reality across the five or six centuries under consideration during which there would have been fluctuations in the nature of upland settlement in response to a host of social, political, economic and environmental factors (14.3.6 and 14.4.2 above). Kelly's point, that there is likely to have been greater variety in the mechanisms by which the Welsh uplands were exploited, is taken (1981-82, 885-7); for example, a basic transhumant strategy can be implemented in several ways with various socio-economic implications (10.4 above). There is a danger in polarising the debate, in seeking long term continuity in the practice of *either* permanent *or* seasonal settlement in landscapes with relatively low productive capacities. In an upland region used by agro-pastoralists, there may be a zone within which permanent settlement fluctuates according to the interaction of social, economic and environmental factors. Arguably, there is not a static 'frontier line', as is well illustrated by late eighteenth and early nineteenth century expansion of Welsh hill farming settlement and its subsequent retreat (C. Thomas 1989, 254-57).

Permanent settlements have been defined as "those where people expect to stay put, where families live in the same house from generation to generation, as part of the same settlement unit" (Orme 1981, 107). "Expect" is an important word in this definition since it introduces a subjective element of human judgement. The role of the cognitive element as a factor in explaining past land-use has already been recognised (10.2.2 above). However, human judgement is far from infallible, and expectations may be defeated, sooner or later. Partible inheritance, morcellation of gwely lands, and the expansion of holdings on to less productive land, may be an example at this period of an *ultimately* maladaptive response to a combination of favourable short-term climatic conditions (14.4.2 above) and social and political pressures, in view of the subsequent problems experienced with the viability of holdings (14.3 above).

Attempts at pioneering permanent settlement will sometimes fail or perhaps be aborted by external pressures; or the requirement for them can be short lived. In the Welsh upland zone at this time, it appears that it will be very difficult indeed to distinguish on archaeological grounds between activity at a seasonally occupied settlement and activity directed at establishing a "permanent" settlement, which might fail or be otherwise redundant within a few generations or so (14.4.4 above). Also, historical information is unlikely to be generally available in sufficient detail to chart this process in respect of individual

holdings until the advent of deeds and estate maps in the eighteenth century (11.6.2 above).

The potential of a seasonally occupied settlement to form the nucleus of a permanently occupied farmstead has been noted from the later Middle Ages onwards (11.6.8 and 14.3.6 above). The logic of the tactic, removing some risk through the use of a known location and landscape, is self-evident (10.2.3 and 10.2.6 above). Settlement such as that in the Brenig Valley has been described as a "natural growth point" for encroachment (M. Griffiths 1989, 238). Could not both the relative abundance of material culture found at the Brenig Valley structures (14.4.4 above) and the presence of associated enclosure, just as well be interpreted as a short lived attempt at establishing a "permanent" settlement as the practice of seasonal occupation over a longer period? It is significant that the ceramics could equally well be derived from a shorter rather than longer period of use (J. P. Greene 1979, 36).

Further, some buildings may represent satellite centres, used intermittently to extend the range of the principal holding throughout a year, not just on a seasonal basis. There are documented indications of this practice from the British uplands (11.6.6 above) which can be viewed as an intermediate settlement step between seasonal and permanent occupation.

In conclusion, therefore, the study of land-use and settlement in upland landscapes such as the survey area may best be advanced by

taking a longer rather than a shorter chronological perspective, looking at a continuum of settlement activity, rather than seeking the absolutes of "permanent" and "seasonal" occupation at a given moment, absolutes which, in any event, are often unlikely to be agreed upon in terms of the current archaeological and historical record.

14.5 LAND-USE AND SETTLEMENT IN THE SURVEY AREA c. 1100 to 1500/1600AD

14.5.1 The Evidence

The evidence comprises environmental data (2.5.4 above, *Phase 6*), and rectangular buildings, often associated with ancilliary structures and sometimes with plots and paddocks (Chapter 7 above).

There appears to have been an increase in cultivation in the region in the twelfth and thirteenth centuries (2.5.4 above, *Phase 6*) which would have coincided with the Medieval 'Climatic Optimum' (2.2.3 above). Intensification of grazing is indicated in the palaeobotanical record throughout this period (2.5.4 above, *Phase 6*).

The four types of rectangular building identified could span several centuries, from the twelfth to the sixteenth or even seventeenth centuries, although there may be a focus in the later Middle Ages or the early Post-Medieval period (7.7 and 9.2 above).

There is, too, a historical back-cloth to this data which places the survey area in the Welshry, mostly within the *commote* of Perfedd in which land was apparently held communally by free-tribesmen in the fourteenth century, although how long Welsh legal custom endured in the *commote* is unknown (14.3.7 above). Its resilience in remoter regions including eastern Carmarthenshire, however, is recognized and Welsh traditions could well have continued to hold sway in the area into the early Post-Medieval period (14.3.6 and 14.3.7 above).

14.5.2 The Agricultural Use of the Survey Area

Much of the area clearly falls within the thresholds for upland cultivation during and even after the Medieval Climatic Optimum (14.4.2 above). There are plots which can be associated with around 10% of the rectangular buildings (7.3.8 above) although these could have encompassed cultivation on only a very limited scale. In any event, open-field rather than enclosed cultivation appears the native Welsh norm (R. R. Davies 1978, 369) until enclosure commenced in the fifteenth century. The scale of arable farming could, therefore, have been extended by temporary out-field cultivation in the area (G. R. J. Jones 1965, 49). No evidence for this was seen, although any traces may only have been very slight depending on the frequency and character of cultivation. It is likely that soil degradation had advanced considerably by the Middle Ages quite possibly with the advent of gleying (7.5 above), and the landscape may have been less conducive to cultivation compared with a millennium or so earlier although potentially this

could still have been practised on pockets of better drained soil (9.6 above). Further, it is possible that the palaeo-botanical evidence relates to cultivation from beyond the immediate confines of the survey area. The presence of a settlement accompanied by arable lands at Neuadd Wen has been noted on the floor of the Amman Valley just south of the survey area (14.3.7 above).

Any cultivation could well have involved oats, a crop well suited to the uplands (13.4.3 above) and by now well attested in upland Wales from documentary sources (14.3.4 above). The utility of oats for animal husbandry has been^e noted too (13.4.3 above)₄

The limited field evidence for cultivation in the survey area, the apparent intensification of grazing in the environmental record, and the importance of animal husbandry throughout this period in the Welsh uplands skewing the mixed-farming economy very much towards a pastoral regime (14.3.4 above), together indicate that the survey area would have been primarily exploited for pasture. The suggested tentative later Medieval to early Post-Medieval date for many of the buildings coincides with a period when there was apparently still greater emphasis on animal husbandry and uptake of grazing in more marginal landscapes (14.3.6 above).

14.5.3 Seasonality of Settlement within the Survey Area

The character of settlement represented by the rectangular buildings is as open a question in the survey area as in the rest of upland Wales (14.4.3 and 14.4.4 above). The possibility of some

limited arable farming associated with the rectangular structures need not at all imply permanency of settlement, particularly when spring-sown oats is the crop most likely to be cultivated (14.3.4 above). As has been noted, cultivation complementing transhumant grazing around summer settlements is recorded in Post-Medieval sources (11.6.6 above).

However, both the scale and structural complexity of many of the compartmented buildings contrast with the image of rather insubstantial structures frequently invoked for the shelters on seasonally exploited grazing grounds in Wales and elsewhere (G. R. J. Jones 1972, 356 and 1985, 156; Butler 1987, 48) (7.6.4 and 11.2.8 and 11.6.7 above). Although this view of summer houses in Wales may depend over-much on a relatively few documentary sources, it is possible that ephemeral structures were in use on the slopes prior to the construction of more substantial buildings. As already noted, many of the rectangular structures compare favourably in scale to those in permanently occupied villages excavated in the Englishry of South Wales (7.6.2 above). Further, the frequent association of ancilliary buildings with the compartmented buildings echoes that recorded for permanent settlement (G. R. J. Jones 1972, 356; Butler 1987, 51).

Would it, however, have been feasible to over-winter both cattle and sheep which may have combined in the pastoral economy of the area (14.3.4 above)? This question has already been addressed in relation to the settlement thought to date to the latter part of

the first millennium bc and the proto-historic period (13.4.4 above). Shelter and feed were issues considered. The answers are much the same for the Middle Ages.

Sheep, which began to assume greater importance in the later Middle Ages (14.3.4 and 14.3.5 above) may well have found adequate winter pasture on the flanks of the hills particularly if stocking rates were controlled (Crampton 1966, 74-5). Supplementary feed could have been made available too, in the form of hay and oat straw and cereal produced in the vicinity or imported from associated holdings elsewhere. Plots may have been used to cultivate fodder crops with some hay being taken from the slopes, as recorded in Post-Medieval sources (11.6.6 above). The possibility that some compartments and structures were used for the preparation and storage of fodder has been canvassed (7.3.12 above). Potentially locally stored feed may have been able to sustain some cattle around the buildings through the winter too, on a scale commensurate with the relatively small number apparently owned by individual tribesmen (14.3.4 above). Over-wintering of non-milch stock in the hills is recorded elsewhere in Post-Medieval sources (11.6.6 above), and inverse transhumance for some categories of stock adds flexibility to the practice.

The likely problems of housing mature cattle within the buildings recorded have been mentioned (7.3.12 and 7.6.3 above). It is not readily apparent that full-grown cattle would have been able to enter many of the buildings, and where this was possible, probably

only a few beasts could have been accommodated. However, as noted above (13.4.4), the provision of shelter for cattle is not essential even in winter conditions, except for young calves, and smaller animals which could have been accommodated within the various compartments and ancilliary structures associated with most buildings.

The scale of many of the buildings, the structural complexity of some examples indicating a range of activities, the cultivation plots and potential facilities for fodder storage combine to suggest that, against a likely background in which even the less productive land was being increasingly exploited and encroached upon by the fifteenth century (14.3.6 above), some over-wintering is feasible, and that some compartmented buildings, in particular, can be regarded as incipient farmsteads structurally akin to the house-and-byre buildings (7.6.3 above).

The dynamic of the process involving seasonally-used settlement which culminates in permanently occupied homesteads has been argued above (14.4.5). It is very probably illustrated in the survey area by the buildings recorded on Sarn Fan farm in the Twrch valley. Activity at this hill farm may well be indicative of a process whereby settlement began as seasonal occupation, followed by some overwintering, which seems feasible in view of the scale and range of structures, culminating in the establishment of a permanent settlement somewhat before the early eighteenth century.

The process has now gone full circle with the abandonment of the farm (3.10, sites 809 to 826; 7.3.11 above).

Other farms around the present-day margin of the common land could have been established through a similar process. Documentary studies suggest that present-day farms elsewhere around the southern edges of the common may have their origin in seasonal settlement (Bowen Evans 1991, 30-31).

14.5.4 Some Conclusions Regarding the General Character and Development of Land-use and Settlement in the Survey Area 1100 to 1500/1600AD

The survey area is at the southern and eastern margins of the *commotes* of Perfedd and Iscennen (14.3.7) which allows lower altitude principal holdings to be placed with confidence to the north and north-west of the survey area. Within the *commote* of Perfedd, the Black Mountain commons are presently up to 7km wide. Exploitation from lower ground to the north-west could easily have involved return journeys of around 8km to 10km, and more depending on the precise location of the principal holding relative to the area of upland grazed. While such distances are possible for the daily return movements of livestock, the desirability of such daily travel is another matter. Expenditure of time, attrition to the animals and potential damage to growing crops on the journey would have weighed against the practice when consistent upland grazing was necessary (11.6.5 above).

This supports a view that out-stations, represented by the rectangular buildings in the survey area, would have been advantageous in the exploitation of more distant common pastures (fig. 14:4) (Ward 1991, 18). As noted, such satellite settlement is a well proven means of extending the range of exploitation in upland zones (10.2.6 above), and the distances suggested for the range of movement within the *commote* of Perfedd fall within both theoretical parameters (10.2.6 above), and those indicated for Post-Medieval transhumance (11.6.6 above).

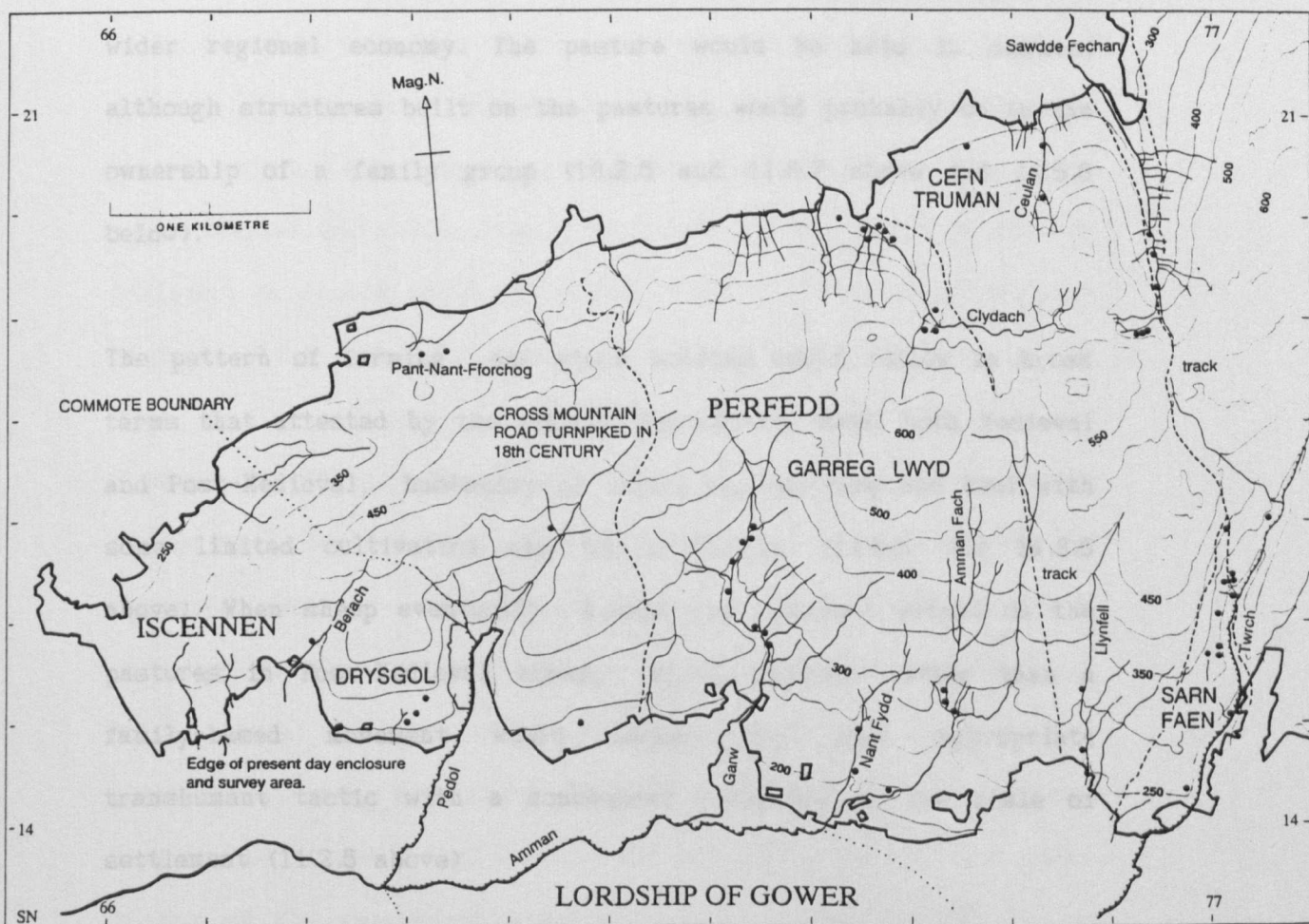


Fig. 14:4. The distribution of rectangular buildings, together with pathways, in the survey area towards the southern boundary of the *commote* of Perfedd (taken from Ward 1991, figure 13 with minor modification).

While stock transference under the supervision of hired herders on behalf of a social elite is a model for some transhumant practice during the Middle Ages (14.4.2 above), the traditional interpretative preference towards the practice of transhumance within a family-based subsistence economy, making seasonal use of the rectangular buildings and pasturage, can most plausibly explain a substantial part of the exploitation of this tract of upland landscape during this period. The context for the practice would lie within the traditions of Welsh tribal society in the adjacent *commotes* which would be the link with the supportive wider regional economy. The pasture would be held in common, although structures built on the pastures would probably be in the ownership of a family group (10.2.5 and 11.6.7 above and 14.5.6 below).

The pattern of farming and stock holding could follow in broad terms that attested by the limited documentary data, both Medieval and Post-Medieval, husbandry of cattle for dairying and beef with some limited cultivation and hay-production (11.6.6 and 14.3.5 above). When sheep eventually became the dominant animal on the pastures in Post-Medieval times, stock transfer rather than a family-based movement would become the most appropriate transhumant tactic with a consequent reduction in the scale of settlement (11.2.5 above)

However, again in keeping with some of the information on Post-Medieval seasonal activity (11.6.6 and 11.6.8), the actual practice

of exploiting the uplands may have been more complicated than the simple repetitive annual cycle of transhumant movement intended only to make use of summer pasture. The imperative to use these uplands is likely in time to have involved rather more than just seasonal movements to take advantage of grazing. Over-wintering would have been practical at out-stations, which were not necessarily independent viable farmsteads in their own right, although some probably did develop into free-standing holdings which are now subsumed in the farms around the edge of the common.

It is arguable that there was a particularly significant phase of activity in the later Middle Ages and the early Post-Medieval period since the numerically most important building, the compartmented structures, could well date to the fifteenth century or later, as indeed could the other forms of rectangular buildings recorded (7.6.5 and 14.5.1 above).

This would coincide with a period when there was an increasing use of marginal landscapes in Wales in response to a diversity of reasons, possibly still including continued morecellation of principal holdings with the lingerings of Welsh Law in the area (14.3.6 above), but also moves in the establishment of the present pattern of farming settlement around the survey area which extends back to the sixteenth and seventeenth centuries (Bowen Evans 1991). If any of the settlement happened to date rather earlier in the Middle Ages, then partible inheritance with consequent fragmentation of *gwely* land at lower elevation in the region could

be still more significant in explaining the establishment of satellite settlement in this area.

14.5.6 Other Aspects of Settlement and Land-use

A number of comments can be made on the use of the survey area, and the buildings dating to this period, which are pertinent regardless of the extent to which the exploitation was organized on a seasonal basis.

References to pannage and the honey of the woodland bee in relation to the Forest of Pedol at the western edge of the *commote* of Iscennen (D. L Evans 1935, 233) indicate the continuing regional presence of woodland and associated resources at the edge of the survey area. The *Forest* of Pedol does not necessarily imply actual woodland, merely the presence of an area for the chase - but pannage and the woodland bee do seem explicitly to indicate woodland. It is as well to remember that the area would have had a value for the local economy in addition to the provision of grazing and a few small arable plots. Sewin have recently been seen in the Nant Garw (T. James *pers comm*) and the Afon Twrch is a recognized fishing stream. This further emphasises the range of resources which the area could have provided at a time when diversification of food supply may have been important (Grant 1984, 184).

It has been noted how the buildings of this period tend to group in dispersed clusters and how some clusters can show local preferences for design or methods of construction (7.3.10 above).

This could represent a perpetuation of the kindred-based 'semi-nucleation' of settlement suggested for the *gwely* lands (14.3.3 above), manifesting itself in family preferences for styles of building as well as settlement location.

The Welsh Laws attach importance to the footpaths which connected the settlements where cultivation took place to the common grazing grounds (G. R. J. Jones 1985, 165). It has been noted that some of the rectangular structures cluster along pathways, hollowed into the slope, which appear to be of antiquity. Lengths of the pathways have been deliberately improved with stones cast to either side. There may be a correlation between paths and the choice of settlement location not only in terms of facilitating communication and movement, but also in terms of control of territory, the protection of stock and the assertion of grazing rights in the context of the uncertainties of a locally disputed "frontier" zone (14.3.7 above). In this connection it is noticeable that the rectangular buildings are to some extent clustered towards the southern boundary of the *commote* of Perfedd (fig. 14:4) (Ward 1991, 18-19). Once more there is support for this from analysis of information on Post-Medieval transhumant practices which suggests the strategic siting of buildings in relation to access routes and territorial boundaries. As noted, exploitation of upland pastures carried risks of human predation (11.6.7 above).

CHAPTER 15: SOME
CONCLUSIONS

15.1 INTRODUCTION

The principal aim of the project was the survey and analysis of the field remains in the chosen area within a putative chronological framework. The analysis provided a basis for discussion of the use made of this tract of upland landscape from the late Glacial/early Post-Glacial through until the early Post-Medieval period. This was undertaken against an environmental backcloth, and informed by discussion of characteristic strategies adopted in the exploitation of upland landscapes (1.2.1 above). The limitations of a primary phase of field survey alone are recognized. Therefore, it was also intended that this project should inform future research designed to study aspects of this and other comparable upland landscapes in the region in greater detail (Chapter 16 below).

This chapter will provide a concluding summation of the principal elements of the analysis and interpretation of the archaeological record in relation to land-use in the survey area.

15.2 THE ARCHAEOLOGICAL RECORD

15.2.1 The Character of the Archaeological Record

No physical or material evidence for human activity was located for the millennia prior to around 2000bc. Field survey will, of course, only record visible features. Chance discoveries, dating from at least the later Mesolithic, elsewhere in the uplands of South Wales indicate human activity prior to 2000bc. The palaeo-

botanical record for the survey area indicates human interference with the natural vegetation from the later Mesolithic onwards and it is likely that artefacts and the remains of structures await discovery in the survey area to complement the environmental data. On analogy with similar landscapes elsewhere, archaeological evidence very much earlier than the later Mesolithic is less likely to be found, particularly that dating to the late Glacial and early Post-Glacial.

Three discrete categories of major structural remains are present (4.3 above). These are the monumental cairns, which are presumably sepulchral in character; annular and sub-annular foundations and enclosures together with rectangular foundations, which are settlement structures; and, finally, evidence for agricultural activity in the form of linear boundaries, and stony heaps and strips. Again, it is highly probable that evidence for timber structures together with artefacts lies in the soil (9.3 above).

The field remains described can be placed in a tentative chronological sequence which starts around 2000bc, continuing to the early Post-Medieval period (9.2 above). The monumental cairns are the earliest structures, dating broadly to the early to mid-second millennium bc; the annular foundations and enclosures may focus between around 500bc and 500AD, although there is some possibility that they could date either side of this bracket; the rectangular foundations are most likely to be Medieval to early Post-Medieval in date perhaps with a focus in the

fifteenth/sixteenth centuries. The field evidence for agricultural activity is likely to parallel very largely that for settlement, particularly the annular foundations and enclosures (9.3 above), although one significant element, the linear boundaries which partition the north-western edge of the survey area, could date to the close of the second millennium bc (5.4.2 above). There remains a possibility that settlement and stone clearance features could extend back into the second millennium bc too, although there is, as yet, little evidence from elsewhere in Wales to support this (6.2.5 and 12.5.4. above).

15.2.2. The Archaeological Record and the Landscape

The chronological division of the monuments is echoed by differences in their location (9.4 above). There is a noticeable downward movement of construction through time, from the ridges to the lower foot slopes, and also a shift from exposed to more sheltered locations. The second millennium bc monumental cairns are at the greatest altitude, up to 600m OD on ridge tops. The later prehistoric and proto-historic annular foundations and enclosures tend to be on open slopes mostly within a 240m to 340m altitudinal band. Some of the Medieval or early Post-Medieval rectangular foundations occupy the lowest altitudinal positions, but they also have the widest distribution along a gradient between c. 200m and 500m OD. They are most often found in sheltered positions in valleys or gullies but only occasionally on open slopes. The large majority of stone clearance features lie in a 240m to 360m OD band.

The gradual downward spread of field remains across the survey area is paralleled by the chronology for deforestation, and probably also soil degradation, which begins at altitude and then extends eventually to lower slopes (9.5). There is no obvious correlation between the distribution of monuments and present day soil types, at least in terms of the current mapping of soils, although some potential cultivation plots are located on apparently more freely drained areas (9.6 above). There is a tendency for locations with a southerly aspect to be favoured for settlement and cultivation (9.4 above).

15.2.3 Overview of the Archaeological Record Compared to Similar Landscapes Elsewhere in the Region.

It is difficult to discuss the range and distribution of site-types in the survey area compared to that in similar upland areas elsewhere in the region where survey work has mostly been carried out on a period basis often unsupported by detailed planning of individual sites. It appears, however, that generally the types of site identified in the survey are to be found elsewhere in the Southern Welsh uplands (eg. RCAHM 1976a; 1976b; 1982), while eventual publication of the landscape surveys undertaken by the Royal Commission on Ancient and Historic Monuments (Wales) across sections of the South Wales uplands (eg. Leighton and Percival 1986; Leighton *et al* 1987) will provide a basis for comparison both of the monuments' forms, and their relative distribution and location in the landscape.

It is apparent, however, that there are some differences in the suite of monuments in the survey area compared to areas of similarly unimproved landscapes at rather lower altitude in the region where the chances of survival are roughly the same (Appendices 1 to 4). Chambered tombs and other monuments with a potential role in communal ceremony such as standing stones, ring cairns or stone circles are absent from the survey area. Also mounds of burnt stones, common in some landscapes, seem under-represented by the one possible example located (8.1 above). Foundations are absent from the areas at lower altitude described in the *Appendices*, apart from a single example on Rhossili Down (Appendix 3). These differences can be explained by a combination of factors including differences in the extent of the relict landscapes, contrasting topographical locations and variations in local climate, and the steeper and longer altitudinal gradient of the survey area compared to the other areas which crosses a regionally significant environmental threshold (2.5.7 above).

15.3 SOME CHARACTERISTICS OF UPLAND LAND-USE

A general overview of aspects of the study of upland land-use contributes ideas which usefully inform discussion of land-use in the survey area (Chapter 10 above).

Uplands tend to be areas of low productivity where the effects of seasonality on the availability of resources are accentuated. The more unpredictable climate at altitude involves an additional degree of risk to be taken into account in implementing

subsistence strategies (10.2.1 above). Decisions on how best to use the resources of upland landscapes with a view to minimizing risks reflect social and cultural factors as well as economic and environmental circumstances. However, the former are not as directly accessible through the archaeological record (10.2.2 above).

Uplands usually present a series of economic zones in which resources vary according to the time of year. Thus, seasonal availability of resources both within and around upland landscapes is a salient factor. Exploitation of these resources requires a degree of human mobility between the zones. This is an important feature of land-use in the uplands which facilitates the management of fluctuations in food supply, thereby reducing risk. Physiological adaptations, storage and redistribution are other mechanisms for coping with seasonal availability of food (10.2.3 above).

Hunting and gathering groups can find territories which include uplands attractive since relatively short movements allow the exploitation of contrasting economic niches. There will be considerable mobility between diverse environmental zones within the region and populations levels tend to be low where food extraction is practised (10.2.4 above). Food-producing agro-pastoralists exploit upland landscapes as part of a wider regional economy too. The regional setting serves to minimise the risks

inherent in exploiting such areas of relatively low and often uncertain productivity (10.2.5 above).

Risks in undertaking arable food production in upland environments, which are often at the limits of viable cultivation, may be minimised through concentration on crops particularly suited to local conditions and the morcellation of arable land so that crops are spread around a number of micro-habitats. However, food producers find animal husbandry particularly suited to upland environments, and very often the economy is truly pastoral in the sense that animal husbandry is the dominant element in the agro-pastoral mix to the extent that it affects social organization and behaviour by requiring a degree of mobility to exploit the markedly seasonal availability of pasture (10.2.5 above).

Such mobility to exploit seasonally available grazing and browsing is known as transhumance (10.2.6 above). The practice of transhumance can take several forms with varying degrees of social mobility ranging from highly mobile nomadism to stock transfer with very limited social dislocation (10.4). In a Western European highland setting, the practice of transhumance has often taken place in historic times within a family based subsistence economy. It is best known as a practice which involves the vertical movement of animals accompanied by people from the permanently occupied homestead to a base from where communally owned summer pastures can be grazed (10.4.3 above). The practice has frequently been invoked to explain exploitation of the Welsh uplands, both

during historic times, when it is to some extent attested by documentary evidence, and during the prehistoric period (10.3 above) despite the challenges of identifying transhumance from the archaeological record (10.5 above).

In reality there is rather little direct evidence from Wales for the mechanics of the practice of transhumance and their implications for the character of land-use (11.2 above). However, the Welsh data is usefully supplemented by information from comparable areas elsewhere in the British Isles. Importantly, it becomes apparent that distinctions between "seasonal" and "permanent" settlement were not necessarily clear-cut and that transhumance played an important role in the settlement dynamics of the upland zone (11.6 above).

15.4 LAND-USE IN THE SURVEY AREA

15.4.1 Introduction

The archaeological record for the survey area (Chapter 3), placed in a tentative chronological framework on analogy with evidence from elsewhere (Chapters 5, 6 and 7), combines with the environmental data (Chapter 2) to suggest the following principal phases of land-use. Interpretation is stimulated by the information and ideas on upland land-use outlined in *Chapters 10 and 11*.

15.4.2. Land-use Prior to the End of the Second Millennium bc

During the late Last Glacial and early Post-Glacial there is no evidence for human activity. Any human activity that did take place can be envisaged in the context of hunter-gatherer reconnaissance camps in what has been termed "a zone of exploration" (Spratt 1993, 51). This would have articulated with activity at lower altitude in and beyond the region of the present-day coast and estuaries (12.2 and 12.3.1 above).

From some time before c. 4000bc and through the fourth millennium bc, there are suggestions in the palaeo-botanical record of interference with the woodland by later Mesolithic hunter-gatherers, presumably with a view to enhancing opportunities for hunting. This activity is almost certainly a seasonal phenomenon, part of a cycle of movement incorporating lower ground either towards the coast to the south and west or valleys to the north (12.3.4 above).

The arrival of food production with associated monumental and material culture in the wider region around 3000bc has no tangible local impact in terms of material evidence. Continued deforestation and the degradation of soils attested in the palaeo-botanical record through the third millennium bc probably in part result from fairly transient human activity undertaken perhaps both by mobile indigenous peoples gradually adapting to food production through animal husbandry, and more sedentary communities with mature food producing skills who were taking advantage on a

seasonal basis of opportunities for grazing, browsing and supplementary hunting (12.4.4 above).

15.4.3 Land-use in the Earlier Second Millennium bc.

Grazing is indicated by the palaeo-botanical evidence. The appearance in the earlier second millennium bc of monumental cairns, with an assumed funerary function, on summit ridges now clear of trees, is a clear manifestation of changing perceptions of territorial consciousness in relation to a landscape which was probably still used only on a transient seasonal basis either as part of a nomadic cycle or as part of an agro-pastoral cycle related to sedentary food production in the surrounding region (12.5.4 above). The absence of monuments which could fulfil wider communal ceremonial roles serves to distinguish the survey area from other areas which can be described as "home areas". These were probably more intensively exploited and settled by communities with increasingly hierarchical organization (12.5.5 and 12.6.6 above).

15.4.4 Land-use from the late Second Millennium bc to Approximately 400/500 AD

Interpretation of land-use during this extended period draws on the evidence of linear boundaries, house circles which can be either isolated or associated with plots and in one instance fields, and enclosed homesteads (13.3 above). These were constructed in a landscape in which woodland clearance becomes more extensive, and which is adversely affected by climatic deterioration from the late

second millennium bc through well into the first millennium bc. Later in the first millennium bc or perhaps early in the first millennium AD the palaeo-botanical record indicates a distinct episode of cereal cultivation.

The linear boundaries which partition the north-western edge of the survey area, and which may date to the later second or early first millennium bc, could represent a phase during which parts at least of the survey area are carefully managed, presumably in relation to animal husbandry which also involved seasonal stock movement to unenclosed land. Their construction may reflect still more authoritative social organization and possibly permanent settlement at not too great a distance (13.4.2 above).

Climatic deterioration may have ended this phase of more intensive management, with the landscape continuing to be grazed on a seasonal basis prior to an episode, sustained over several centuries in the later first millennium bc and early first millennium AD, during which land-use focussed on the house circles and enclosed homesteads. There is now some potential to argue for mixed agro-pastoral activity which together with associated settlement could, at times, have been sustained in the area on an all-year-round basis (13.4.3 above). During the later Iron Age it becomes possible to suggest a regional context, the area articulating with a tribal focal point in the Towy Valley to the north. This connection could have continued into the period of

Roman administration, although the area is apparently remote from the direct impact of Roman innovation (13.4.3 and 13.6 above).

15.4.5 Land-use from Approximately 400/500 AD to 1500/1600 AD.

There is no evidence for activity which can be dated to the centuries after the end of Roman administration except for the palaeo-botanical record which indicates on-going grazing. Tentatively, on the basis of what is known about tenurial organization and the agricultural economy in Wales generally (14.1.1 above), the area was most probably only used for transhumant grazing as part of a larger "estate" which still may have had its focus on lower ground to the north (14.1.3 above).

Certainly later in the Middle Ages most of the survey area can be shown to be part of a wider administrative region, the *commote* of Perfedd, extending to the River Towy to the north (14.3.7 above). The rectangular structures represent settlement activity which it is difficult at present to date with precision. While it is tempting to correlate the presence of all or some of the buildings with a period of climatic amelioration in the eleventh and twelfth centuries AD (14.4.1 above) coinciding with an increase of cultivation in the region (14.5.1 above), archaeological analogy suggests that a later date, in the fifteenth or early sixteenth century, is more likely (7.6.5 above). This would correspond with a period when, historically, there was greater interest in animal husbandry on upland grazing as part of a family based subsistence

economy within the declining structure of Welsh tribal society and tenorial practices (14.5.4 above).

The character of the settlement is ambiguous. While structures of this type in upland location are frequently regarded as *hafodydd*, occupied only in the summer, there are contradictions in the interpretation of the archaeological evidence which is unsurprising in view of the challenges of determining seasonality through archaeology alone (14.4.3 above). Consideration of the rôle played by transhumance in the extension of permanently occupied homesteads (14.4.4 above) suggests that many of the buildings can be regarded as satellite settlements for holdings elsewhere in the *commote* which, as well as serving as summer shelters, were often capable of overwintering people and stock, and providing nuclei for the extension of permanently occupied settlement (14.5.2 and 14.5.3 above).

15.4.6 The Dynamics of Settlement through Time

It can be argued that the character of the settlement which is visible in the survey area fluctuates along a continuum, and that over the long timescales during which trends in land-use are of necessity studied through archaeology, its character cannot readily be polarised as *only seasonal* or *only permanent*. There are certainly three episodes of activity when there may have been permanent settlement within or close to the edge of the survey area. These fall, possibly towards the end of the second millennium bc when part of the landscape was partitioned (13.4.2); during

the later first millennium bc and the proto-historic period (13.4.4); and in the later Middle Ages and early Post-Medieval period (14.5). They would have taken place against a background of a transhumant strategy which established seasonally occupied shelters in the area which could also have been used for overwintering, allowing the feasibility of permanent settlement to be tested.

15.4.6 The Character of Transhumant Exploitation in the Area

It has been recognized that potentially several different transhumant practices were involved in exploiting the resources of the survey area during and subsequent to the transition to food production.

During and subsequent to the transition phase, the area may have been included within highly mobile seasonal cycles which may have assumed some of the characteristics of nomadic pastoralism as animal husbandry became established. There may also have been transhumant activity undertaken by members of sedentary agro-pastoral groups, although this becomes more likely from the second millennium bc, once there is evidence for potential 'home areas' closer to the survey area which would have allowed the most effective exploitation of resources. Transhumance undertaken by sedentary agro-pastoralists may have led to competition with that of nomadic pastoralists giving rise to attempts more formally to assert claims to territory and resources. The construction of the

monumental cairns in the earlier second millennium bc could be an indication of this.

The construction of linear boundaries partitioning a part of the landscape, perhaps towards the end of the second millennium bc, is a further reflection of territorial consciousness. While such boundaries may indicate that the scope for nomadic transhumance was greatly reduced, they also suggest that transhumance in the form of stock-transference with minimal social disruption is probable on grazing immediately beyond the enclosed areas. This particular practice cannot be discounted still earlier. It does, however, become particularly likely once it is possible to assert more strongly the presence of communities close to the survey area. The seasonal transfer of stock, without a significant social dimension (10.4.3 above), continues to be a transhumant tactic for the survey area down to the present day, and one likely to be underestimated in the past on account of a minimal impact in the archaeological and historical records (11.6.2 above).

The appearance of more substantial settlement structures later in the first millennium and during the proto-historic period may herald a phase (although the discovery of earlier timber buildings could well alter perceptions of timing as regards the initiation of this phase), in which part of a community lives on the summer pastures in a satellite settlement. Overwintering is possible and this could have developed into longer periods of continuous occupation. In the sub-Roman centuries, again subject to the caveat

concerning timber structures, the apparent gap in the settlement record and the limited historical knowledge of agro-pastoralist activity suggests that rather fewer people may have been involved in tending stock on summer pastures, in a tactic which could again be described as stock-transference. Subsequently, perhaps during the later Middle Ages and early Post-Medieval period, a strong settlement dimension in the use of the landscape indicates once more a substantial communal rôle and greater population dislocation. This again could ultimately lead to some permanent occupation via the development of incipient homesteads.

**CHAPTER 16: FUTURE WORK -
SOME RECOMMENDATIONS**

16.1 INTRODUCTION

As has been noted, the survey represents a primary accumulation of data. Its analysis is intended to produce only an initial interpretative framework on which further work can be articulated. This final section outlines some ideas for future work which will build on the current project. Some suggestions are made specifically to improve the extent and quality of data available from the survey area. Others relate more to improving the wider interpretative framework.

16.2. RECOMMENDATIONS RELATING TO FURTHER WORK WITHIN THE SURVEY AREA

16.2.1 Field-work

More field-work within the same parameters (1.2.3 above) will inevitably produce additional sites. These, however, are unlikely to change greatly perceptions of the character of the archaeological record unless a major category of evidence has gone unrecognized. Evidence for early cord rig cultivation is the most likely feature which may still await discovery. This has been shown to be characteristic of upland landscapes in northern England where its widespread recognition has challenged the view of a primarily pastoral economy in later prehistory (Topping 1989). Such evidence can often be ephemeral and difficult to identify at ground level in upland terrain. The complementary use of aerial photography in favourable conditions of light or snow cover may assist.

Field-work during the survey focussed on monuments. Although eroded soil surfaces and river banks together with peat cuttings were inspected as a matter of routine when seen, a more deliberate search for and examination of such features offers some potential for locating artefacts, particularly lithics. Chance figures largely in such discoveries which may, however, in conjunction with environmental study contribute significantly to understanding land-use, as has been demonstrated at Waun-Fignen-Felen just to the east of the survey area (Smith and Cloutman 1988) (2.3, 2.4.2 and 12.3.4 above).

The parameters for field-work could also be widened to include the industrial features of the Post-Medieval period. This would extend the continuum of the archaeological record allowing the exploration of possible associations between the rectangular buildings and early industrial activity undertaken as an ancilliary occupation (8.2 above). Their exclusion from the present work was a practical necessity (1.2.3 above). Their future inclusion would undoubtedly contribute to an intellectually more satisfying appreciation of the development of the "total" landscape as seen at present (Coones 1985, 6).

16.2.2 Environmental Work

There are several ways in which the data on present and past environments could be enhanced. Detailed soil mapping would facilitate investigation of the relationship between soils and the distribution of sites (9.6 above). This could be complemented by

survey of the present vegetation which may reflect past use of the landscape (Cowell 1984).

Further palaeo-botanical study could contribute additional data with which to consider issues outlined in *Chapters 2* and *12* relating to land-use before the appearance of the strictly archaeological record such as the anthropogenic input to early deforestation and soil degradation, and the character of the transition from hunting and gathering to food production. For example, quantitative analysis of microscopic charcoal fragments from profiles sampled for pollen can help distinguish intentional woodland fire setting against the background of naturally ignited fire (K. J. Edwards 1988; 1989a). Also studies with more chronological markers in the period equivalent of Cloutman's *Phase 3*, between c. 3000bc and 1300bc (2.5.4 above), would assist consideration of the transition to food production and the post-transition phase. Studies on the northern side of the survey area would complement those of Cloutman (1983) and Trotman (1963), addressing, for example, the contradiction seemingly apparent in the conclusion that, towards the end of the second millennium bc, woodland clearance was more advanced on the southern side of the Mountain compared to the northern face, although the archaeological record in the form of the linear boundaries, which could potentially date to this period, argues for considerable clearance on the northern side (13.4.2 above).

Palaeo-botanical studies should be closely integrated with archaeological investigation following the example of work in Arduwy in north-west Wales (Chambers and Price 1988; Kelly 1988b; Chambers *et al* 1988). Such partnerships could investigate, for example, the possibility of identifying seasonal land-use through pollen analysis following studies undertaken in Norway (Kvamme 1988). The importance of this is obvious from the potential role of seasonal activity canvassed in discussion of land-use in *Chapters 12, 13 and 14*.

16.2.3 Excavation

Comments reflecting on the absence of securely dated parallels for the sites recorded in the survey area are rife throughout *Chapters 5, 6 and 7*. The effects of the uncertainties are apparent in the interpretations presented, particularly in *Chapters 13 and 14*. Chronological uncertainties hamper interpretation of the linear boundaries relative both to climatic decline, and to the house circles and homesteads; it is unclear whether these could have origins in the second millennium bc and the extent to which they may continue into proto-historic times. The absolute and relative chronologies of the rectangular buildings are also open to debate.

Excavation alone offers the possibility of establishing a chronological framework. There are two discrete programmes; firstly, determining the date range of annular house foundations and homesteads in relation to the chronology of evidence for early land division and agriculture; secondly, establishing the date range

of the various forms of rectangular building. Fortunately, the dating parameters of the monumental cairns are sufficiently well known for present purposes on analogy with monuments excavated elsewhere.

Sites are unlikely to yield closely datable material culture. There may well be problems in securing organic material for radiocarbon dating from sufficiently secure contexts since stratigraphies are likely to be shallow. Palaeo-magnetic dating of hearths is likely to be an effective technique. The utility of magnetometer survey to identify anomalies which might be hearths could be assessed as an aid to selecting appropriate sites for excavation.

Excavation would also provide opportunities for the chance discovery of timber structures which could radically alter interpretations proposed in *Chapters 13 and 14* in particular.

The importance of integrating excavation with palaeo-environmental studies has already been noted. This will involve assessing the information potential of adjacent soils when selecting sites, as well as methodical sampling of excavated contexts. Regard can be had to the potential of adjacent waterlogged deposits to preserve organic material, particularly in the selection of rectangular foundations in valley floor locations. Determination of the internal arrangements of structures could be assisted by quantitative phosphate analysis (Conway 1983).

16.2.4 Documentary Research

It appears that not very much documentary evidence relating directly to the usage of the survey area in the Medieval and early Post-Medieval period is likely to be forthcoming on account of its status as commonland (M. Bowen-Evans pers. comm.). However, documentary sources relating to the margins of the common can be of assistance in interpreting the archaeological record as has been shown in the use of cartographic information relating to the farm of Sarn Fan in the Twrch Valley (14.5.3 above), while documentary research contributes to the understanding of activity in the surrounding area (eg. Bowen-Evans 1991; D. Rees 1988 and 1991). The relationship between research into the survey area and its integration with the less accessible and still less complete archaeological record in the modern agricultural and industrial landscape beyond has already been recognized (13.1 above). This is a point concerning wider questions of methodology which is considered further below.

16.3 WIDER CONSIDERATIONS

16.3.1 Local versus Regional Studies?

The value of studying landscapes in detail on a local basis has been questioned on the ground that the focus is too narrow to allow conclusions of general significance to be canvassed. The wider region has been advocated as providing an appropriate scale for synthesis (Coones 1985, 9). There is, however, no conflict between local and regional studies. They are complementary, and

both are necessary. Local studies contribute detailed chronological frameworks for landscape development and land-use. As in the current study, they have the advantage of a long temporal perspective.

Used on a comparative basis, local studies underpin analysis on a regional scale. In South Wales further local studies of upland landscapes are required (1.4 above) in order both to establish generally applicable patterns and to highlight contrasts and diversity. To attain these objectives, work must proceed at two levels; firstly, the general survey, with a long timescale, such as that represented by the present work; and, secondly, research carefully targetted to address specific matters which will refine and enhance understanding of the scheme suggested by the general survey, such as that suggested in 16.2 above.

The region will usually contain the greater diversity of landscapes and land-use. In the case of upland landscapes, relationships and interaction with surrounding lower lying lands are important. They can be approached both in terms of consideration of general principles (10.2 above) and of evidence suggesting actual links.

16.3.2 A Basis for Regional Study

Regional contexts have been addressed in so far as possible throughout *Chapters 12, 13 and 14* but this presents particular challenges. The landscapes around the survey area are fundamentally under-researched, whether from an environmental, archaeological or

historical perspective. There are also differences in the quality and character of the evidence between unimproved uplands and enclosed lower lying lands which will hinder comparison. Further, it is not just a matter of "looking over the fence" from the open uplands into the fields immediately downslope - the very scale which justifies study on a regional dimension inhibits the endeavour. It is not intended to detail a regional research strategy. However, begging the question for the moment as to what constitutes "the region", a manageable start would be comparative interdisciplinary micro-studies sampling the various types of landscape on a transect down an altitudinal gradient starting from the edge of the current survey area. A guide for the direction of the transect is provided by the conclusion that in historic, and possibly proto-historic times, the immediate regional focus for this upland tract lay to the north and north-west, towards the Towy Valley (13.6, 14.1.3 and 14.5.4 above).

Regard to the regional dimension has highlighted one particular issue in relation to the survey area, its possible status as "frontier" and/or "backwater." Low intensity early use of the landscape has been noted, with monumental evidence of human activity appearing rather later and in more restricted forms than elsewhere in the wider region during the third and earlier second millennium bc. During the proto-historic period the area probably lay close to the borders between the *Demetae* and the *Silures*, and any direct tangible impact of Roman administration is not discernible (13.3 and 13.6 above). During the Middle Ages too the

area was close to troubled borders (14.3.7 and 14.5.6 above). This aspect of the location of the survey area in relation to the wider region merits further research particularly in view of the intriguing observation based on blood grouping that the local population exhibits considerable continuity (1.6 above).

16.3.3 History and Theory

At times, particularly in respect of *Chapter 14*, the writer was aware of the dangers of adopting a "best-fit" approach of matching the interpretation of field remains to the historical framework. A sense of unease still remains about the attribution of the compartmented rectangular structures to the later Middle Ages and early Post-Medieval period on the basis of analogy with excavated structures in far distant regions (14.5 above), as part of a convenient, apparently historically attested process of expansion of activity in the Welsh uplands at this time (14.3.6 above). There must be a possibility that the specific circumstances of the survey area and its region may show some variation from the general historical picture. In part this sort of problem can be addressed through the mechanics of excavation to establish dating. (16.2.3 above) but the question of the applicability of the explanatory process is more difficult to resolve.

A first attempt at formulating a series of principles in *Chapter 10* to help understand the characteristics of upland land-use was useful in informing discussion of land-use in succeeding chapters. For example, the account of transhumant practices in Britain in

Chapter 11, when combined with ideas from *Chapter 10*, helped inform understanding of the dynamics of settlement in the area at several points in prehistory and history (15.4.6 above). It is felt that this extrapolation of guiding principles could be profitably refined and developed. In terms of the study of the historical practice of transhumance, for example, there is probably relatively little novel data to be gleaned from resources relating to Britain unless records of the quality of those available for Assynt in Scotland come to light (11.6.2 above). There may well be a way forward through the study of historical husbandry practices in areas of say, central France, which will bear better comparison with British upland regions, than the Alps or the Norwegian Mountains which have often been used as analogies (eg. Sayce 1956 and 1957) but are landscapes with inappropriately greater environmental extremes.

16.3.4 The Concept of the "Uplands"

The term "uplands" has been used in a general way throughout the discussion. However, the uplands themselves include landscapes with considerable topographical diversity (Conway 1988, 2). Definition of this diversity and its correlation with evidence for past land-use would allow the potential for differential patterning of activity within the uplands to be explored. For example, the survey area lies towards the top of a relatively short altitudinal gradient of around 35km along which the growing season reduces from around a full year on the coast to less than two hundred days on the Black Mountain (2.2.4 above). Further, it lies close to

significant environmental thresholds between lower altitude coastal zone and valley landscapes and the extensive upland hinterland beyond (2.5.7 above). How may these factors have affected land-use in the survey area compared to areas much further within that upland hinterland?

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APPENDIX 1

"Survey and Excavation of Ring Cairns in S. E. Dyfed and on Gower,
West Glamorgan"

Anthony Ward

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Survey and Excavation of Ring Cairns in SE Dyfed and on Gower, West Glamorgan

By ANTHONY H. WARD¹

Ring cairns in Wales have been viewed as a discrete form of structured cairn, a stony ring enclosing an open central area, dating to the second millennium bc, whose distinctive character may reflect a particular role not primarily connected with the interment of the dead. Fifteen likely ring cairns were noted in cairn groups on five ridges in SE Dyfed and on the Gower Peninsula. Although the position of ring cairns on these ridges to some extent overlaps that of other cairns, ring cairns tend towards locations particularly dominated by higher ground which are not so favoured by the other cairns. A range of structural elaborations was present amongst the ring cairns including kerbing, in-filled interiors, orthostats in the bank, and breaks in the ring possibly representing entrances.

Two ring cairns adjacent to each other, GCRC I and II, on Cefn Bryn, Gower were excavated. GCRC I was a stony ring bank, originally with two entrances, one of which had been blocked in antiquity. It enclosed an open area at the centre of which was a pit containing a very little burnt bone. GCRC II comprised a ring bank of stone with inner kerb, against which was a pit containing earth and charcoal flecks. It certainly had one entrance, which was deliberately blocked perhaps at the same time as the interior was filled with stone to the level of the top of the kerb. The pit contents at the rings each gave mid-2nd millennium bc radiocarbon dates. It is possible that the pit fill at GCRC I came from an earlier burial elsewhere so the determination may not reflect the time of deposition at GCRC I.

A case can be argued that ring cairns in the area were built for the public performance of ceremonial on the basis of the apparent absence of formal burial at GCRC I and II, and the structure and siting of the monuments suggesting their suitability as arenas. Ceremonial may have been connected with mortuary ritual, although undated evidence for early agricultural activity in the vicinity of the rings indicates a potentially wider social and economic context for their use. While aspects of the evidence for activity at the two excavated ring cairns may be paralleled at structurally similar monuments in N Wales and SW England, some variations in form and activity are apparent which could indicate differences of emphasis during the time they were in use across the region. Finally, ring cairns are not the only form of broadly contemporary monument to which a ceremonial role can be assigned, and the differences in monumental form could well reflect different ritual requirements, or even social distinctions though too little work has been undertaken as yet on possible social models for the region for this idea to be developed.

Post-war fieldwork in Wales, studying ritual cairns of presumed 2nd millennium bc date, or late Neolithic earlier Bronze Age attribution, indicated considerable

structural diversity (RCAHM 1956; 1960; 1964; 1976a; Bowen and Gresham 1967). The data were reviewed by Lynch (1972), and a general classification proposed based on visible structural components, particularly ring elements. There has been a cautious response towards a widely applicable classification

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based on variations in ring structure on the grounds that the fieldworker is looking at the residual components of cairns after millennia of disturbance and dilapidation, and that the areas from which the information is drawn are geographically restricted (Leighton 1984). There is some agreement, however, that one basic form of cairn can be recognized which is distinguishable from other ritual cairns, and is common to the areas where work has been carried out, that is the *ring cairn* (Lynch 1972; RCAHM 1976a, 44-45; Leighton 1984, 331).

Ring cairns have been variously described as banks of stones surrounding a hollow central area (Lynch 1972, 63); a roughly circular area enclosed by a bank of earth or stones (RCAHM 1976a, 44); and an annular or penannular bank of stones, with or without revetment, enclosing an area which is free of cairn material (Leighton 1984, 331). Lynch, however, would also accept as a ring cairn a bank with a centre which contained some stony material, and also employs the term *complex ring cairn* to highlight ring cairns with conspicuous stones within the bank (1972, 63-65).

The identification of ring cairns as a discrete type of monument has acquired for some a significance beyond mere classificatory convenience. Lynch's review of the evidence from excavated ring cairns, mostly in N and mid-Wales, led her to propose that the differences in the design of these cairns compared with other cairns could also have been accompanied by differences in the way the monuments were used (Lynch 1972, 70-77). Although the information, much of it from old or partial excavations was ambiguous, she concluded that ring cairns in Wales 'were not simply burial monuments but fulfilled some role which was ancillary to the funeral' (Lynch 1979, 9).

In response to such issues, fieldwork and excavation undertaken in an area of SW Wales between 1977 and 1984 (fig. 1), aimed: (a) to plan all likely ring cairns so as to expand the corpus available for study in Wales; (b) to examine the location of ring cairns both in relation to other monuments, presumed to be broadly contemporary, and to the landscape; (c) to address problems of definition and the question of the function through excavation of selected ring cairns. Excavation was necessary since none had been totally excavated in recent years in S Wales.

SURVEY OF RING CAIRNS

Fifteen likely extant examples of ring cairns are identified in the survey, which covered SE Dyfed and the

Gower Peninsula in W Glamorgan (fig. 1), taking account of the definitions already noted, and criteria adopted to deal with ambiguous monuments, particularly eroded cairns which may superficially resemble ring cairns. These follow those used previously in this region during preparation of the Inventory for Glamorgan (RCAHM 1976a, 44n, 3); a heavily robbed cairn is usually indicated by substantial quantities of loose stone within the central area, coupled with the irregularity of the inner edge of the bank; the profile of the bank, or more properly 'lip', around the circumference of a robbed cairn tends to be sharper, with a steep, often irregularly contoured inner face, while the undisturbed ring cairn should have a symmetrically profiled bank. Despite the application of similar criteria, some sites which were described as ring cairns in the Inventory have been omitted following survey. Omissions are explained. Each cairn was visited on a

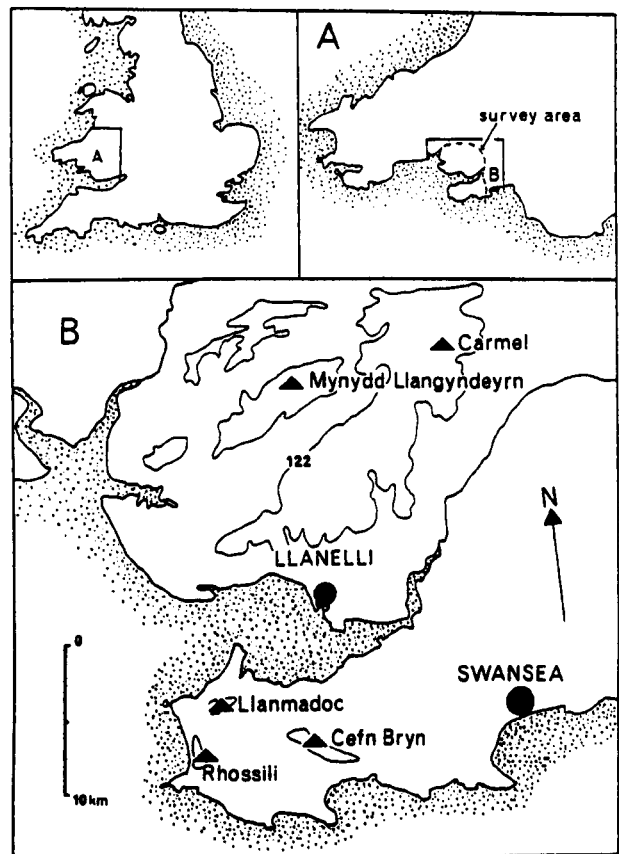


Fig. 1

The survey area and location of the cairn groups in which likely ring cairns have been identified (contours in metres)

number of occasions over several years, and planned in late winter or early spring when vegetation was low; visible stones only (not those obscured by turf and soil) were drawn.

DESCRIPTIONS OF LIKELY RING CAIRNS

The likely ring cairns occur within five groups of ritual cairns on Mynydd Llangydeyrn and at Carmel in SE Dyfed, and on Llanmadoc Hill, Rhossili Down and Cefn Bryn, Gower (fig. 1).

Mynydd Llangydeyrn (figs 1 and 2)

This common land ridge rises to 262 m OD near Pontyberem, SE Dyfed. The monuments comprise a pair of ruinous chambered tombs, seven ritual cairns including three ring cairns, and two standing stones (Ward 1976; 1983). There is also evidence for early land division (Ward 1987a). A possible fourth ring cairn has been destroyed (Briggs and Ward 1979). Numbers allocated to ring cairns follow Ward (1976).

MYNYDD LLANGYDEYRN

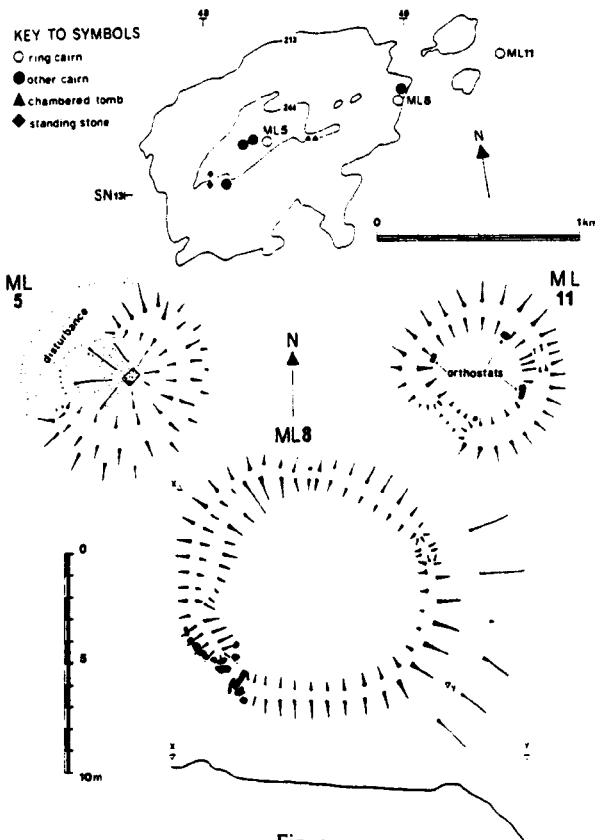


Fig. 2

Ring cairns on Mynydd Llangydeyrn (contours in metres). The key also applies to figs 3-6

ML 5 lies at 254 m OD on a terrace beneath and to the S of the summit. Although the height of the ring's north-western arc has been reduced, its line is clear. Elsewhere the grass-covered stony ring, 1.7 to 2 m wide, survives to a height of 0.4 to 0.5 m. Its inner edge is marked by some larger stones beneath the grass. The overall dimensions are 8 m N-S and perhaps up to 9 m E-W. The area enclosed, which has been disturbed, is around 4 m N-S and 5 m E-W (SN 48311326).

ML 8 is sited on a platform cut into a slope with a south-easterly aspect at 215 m OD. The bracken-covered stony ring, around 14 m NW-SE and 12.5 m NE-SW, is broken into two unequal arcs by breaks aligned WSW-ENE, which seem to be opposed entrances. The western break is about 1 m wide and is delineated by stone kerbing. A constriction in the width and reduction in the height of the ring marks the eastern break. The bank, enclosing an area 9 m across, is around 2 m wide and up to 0.5 m high except for the north-western arc which is up to 3 m wide where there is a ledge in its 0.7 m high inner face, perhaps representing the scarp face of the platform. Beneath the grass are suggestions that the edges of the ring are marked by laid stone (SN 48971344).

ML 11 lies at 205 m OD, towards the north-eastern edge of a terrace in the lee of higher ground. Measuring 8.5 m N-S and 8.3 m E-W, the bracken-covered stony ring is broken into two unequal sections by breaks aligned NE-SW indicated by constrictions in width and reductions in height. The bank is 2 to 2.5 m wide and 0.4 to 0.5 m high, enclosing an area about 4 m across. A telephone cable trench cut through the cairn, after it had been planned, uncovered stone blocks from probable kerbs on both inner and outer edges of the ring, and dislodged three orthostats on the inner edge which rose between 0.14 and 0.34 m above the ring (SN 49501365).

Carmel (figs 1 and 3)

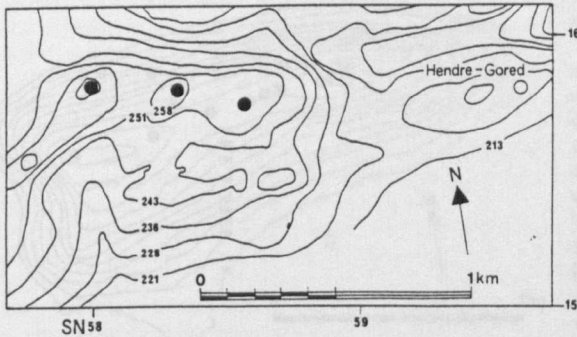
Four major ritual cairns one of which is a ring cairn, form an extended group of monuments on a ridge up to 273 m OD, near Carmel in SE Dyfed (Ward 1987b).

The *Hendre Gored ring cairn* is in a hollow with an easterly aspect between a local summit and the scarp face of a minor ridge at 221 m OD. It comprises a grassy egg-shaped stony ring 16 to 17 m across enclosing an area 12 m wide. Where best preserved the bank is more than 2 m wide and 0.4 m high but has been depleted by erosion or robbing and is increasingly obscured by encroaching peat. The eastern arc is broken by a 1.6 m wide gap or entrance which may have a swollen southern terminal (SN 59591582).

Rhossili Down (figs 1 and 4)

Rhossili Down is a ridge rising up to 193 m OD, mostly of common land, at the western end of Gower. Monuments noted (RCAHM 1976a) include two chambered tombs, RCAHM 32; 14 ritual cairns, RCAHM 169-82, three of which are heather-covered ring cairns on the eastern slope, RCAHM 175, 180 and 181; and remains of early land division and probably settlement (Ward 1987c). RCAHM 171 has been described as a possible ring cairn (RCAHM 1976a) but is badly disturbed, contains much red brick and is approached by a cable trench; its form probably results from use as the site of a Second World War military installation.

CARMEL



Hendre-Gored

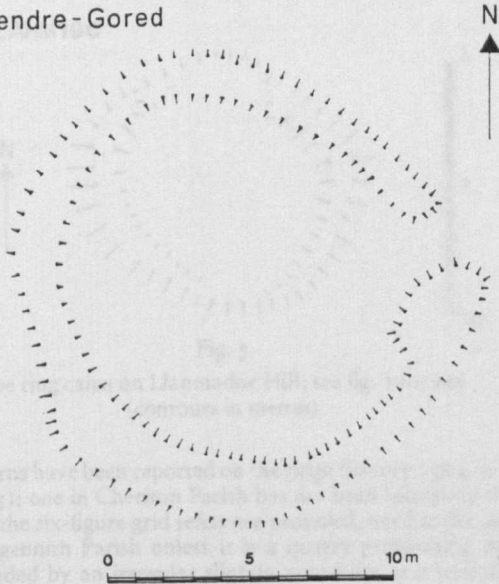


Fig. 3

The Carmel ring cairn; see fig. 2 for key (contours in metres)

RCAHM 175 is on a terrace at 160 m OD. The stony ring, 9.5 m across, is 1.5 to 2.5 m wide and c. 0.25 m high, enclosing a stone-free area c. 6 m across. Larger stones on its circumference may indicate original edges. Two clusters of large stones are opposed in the ring on a NNW-SSE alignment, projecting between 0.3 and 0.5 m above the bank. Although some are slightly displaced, they appear to mark breaks or entrances (SS 42168929).

RCAHM 180 is located at 168 m OD. The eastern arc of the 10 m diam. stony ring is partially obscured by peat. The bank is 1.5 to 2 m wide and 0.3 m high where well defined, enclosing an area 7 m across. Some concentrated stone is detectable by probing within the ring, particularly in its southern arc. A 0.5 m high stone stands 2.5 m to the S (SS 42278890).

RHOSSILI DOWN

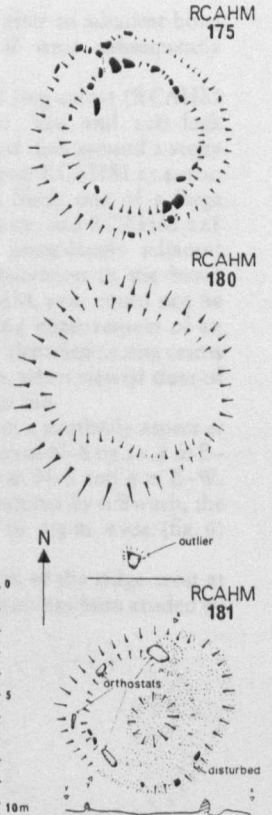
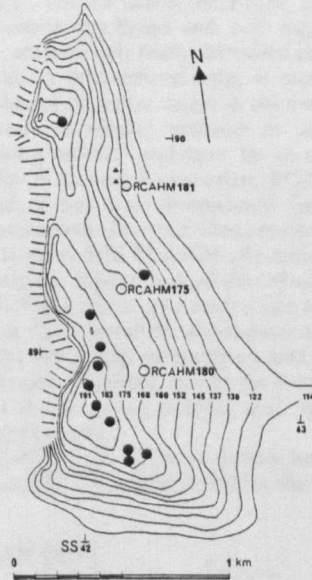


Fig. 4

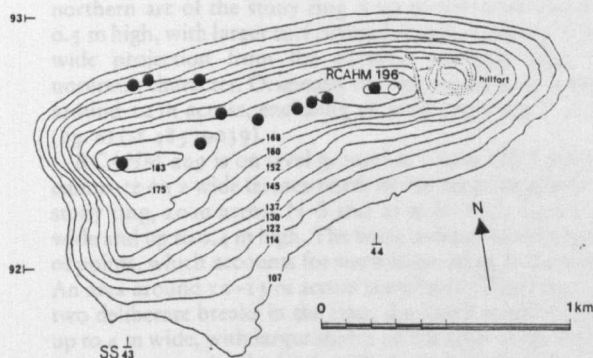
Ring cairns on Rhossili Down; see fig. 2 for key (contours in metres)

RCAHM 181 is sited at 130 m OD. The eastern section of the stony ring has been reduced by disturbance extending into the interior but its line is clear, partly marked by earth-fast stones. Measuring 8 m N-S, with probably similar dimensions E-W, it encloses an area 5 m across. Where undisturbed, the bank is 1 to 1.5 m wide and up to 0.4 m high, with stone blocks retaining the south-western inner edge. Four orthostats from 0.25 to 0.75 m high are incorporated within the ring, three towards the inner edge, the fourth within the bank. Three of these now lean outwards, the fourth slightly inwards. The site has been identified with a cairn 'excavated' in the nineteenth century in which a cinerary urn and cremation were found (RCAHM 1976a). While the association is plausible, the excavated cairn could be one of several on the eastern side of the Down (A. Williams 1939, 22) (SS 42158977).

Llanmadoc Hill (figs 1 and 5)

The common of Llanmadoc Hill rises to 186 m OD at the north-western corner of Gower. Fourteen likely ritual cairns have been noted (RCAHM 1976a, nos 183-96), including one bracken-covered ring cairn, RCAHM 196. Two other

LLANMADOC HILL



RCAHM 196

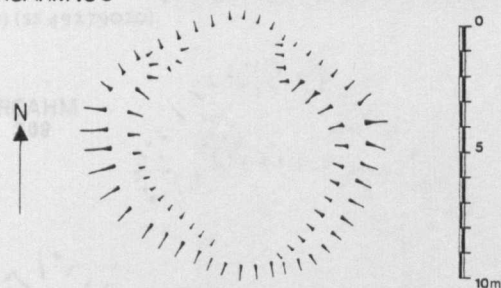


Fig. 5

The ring cairn on Llanmadoc Hill; see fig. 2 for key (contours in metres)

ring cairns have been reported on the ridge (Savory 1984, 416 and 425); one in Cheriton Parish has not been located in the area of the six-figure grid reference provided, nor has the one in Llangennith Parish unless it is a quarry prospecting pit, surrounded by an irregular slightly raised lip, at a position approximating to the reported grid reference.

RCAHM 196 is on the crest at c. 180 m OD with an easterly aspect. The stony bank, 0.1 to 0.3 m high, is well defined E and W, but less so to the N, and also to the S where eroded by a path. The ring is 12.5 m E-W and 10.8 m N-S; the enclosed area, 7 m N-S and somewhat under 8 m E-W, contains compact stone beneath the turf (ss 44099271).

Cefn Bryn (figs 1, 6, 7 and 8)

Cefn Bryn near Reynoldston on Gower is mostly common land up to 185 m OD. Many of the monuments on the ridge have been noted previously (RCAHM 1976a). They include two chambered tombs, RCAHM 33 and 34; cairns, RCAHM 198-230; cairn fields, RCAHM 485 and 500; and 'cooking' mounds, RCAHM 588-89. More sites have been found in recent work. Many of the cairns already recorded and those more recently noted, are small and cluster together. These most probably result from clearance for agricultural improvement. The cairns to which a ritual role can be ascribed with some confidence total fifteen, of which seven appear to be bracken-covered ring cairns, RCAHM 199, 202, 209, 215

and 221, and GCRC I and II, named after an adjacent bowl cairn, Great Carn. GCRC I and II were subsequently excavated (pp. 160-67).

Five cairns, previously described as ring cairns (RCAHM 1976a), are excluded, RCAHM 201, 206 and 220 lack convincing ring banks and, with ragged rims around a stony base, are probably badly disturbed cairns; RCAHM 214, also without a well-defined ring, is most likely one of a large number of clearance cairns in the vicinity; and RCAHM 228 is made of similar material to an immediately adjacent 'cooking mound' and may be an excavation in the burnt debris. A damaged ring cairn, RCAHM 229, could not be found; it may have disappeared during improvement of an adjacent track. Also excluded are sites identified as ring cairns within cairn field RCAHM 485 which, when viewed clear of vegetation, appear as small disturbed cairns.

RCAHM 199 is on a steep slope with a southerly aspect at 140 m OD. Overall the monument is 10 m N-S by 11.5 m E-W, the stony ring enclosing an area 7 m N-S and 9 m E-W. Partly gorse covered, and to the N obscured by hillwash, the bank is 0.4 to 0.5 m high, and up to 1.5 m wide (fig. 6) (ss 47999037).

RCAHM 202 lies on a terrace north of the ridge crest at 145 m OD. The southern half of the cairn has been eroded by

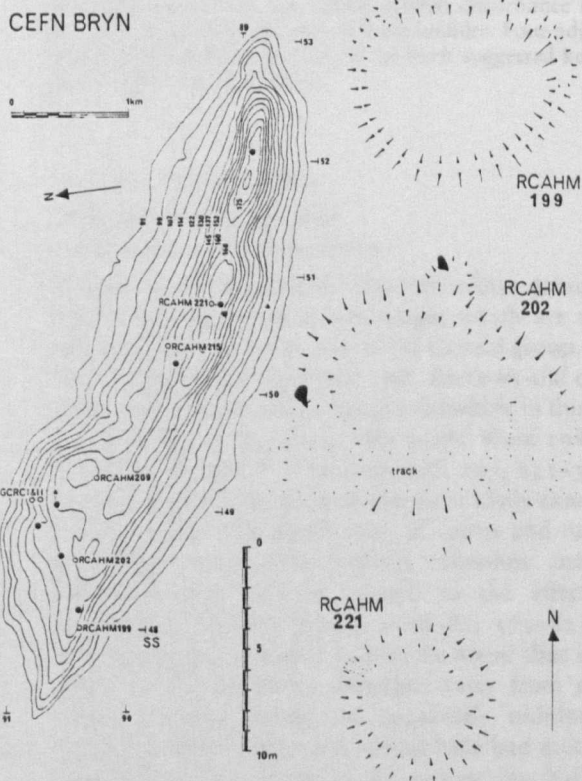


Fig. 6

Cefn Bryn; see fig. 2 for key (contours in metres); ring cairns RCAHM 199, 202 and 221

a track where the bank survives only as low undulation. The northern arc of the stony ring is up to 2 m wide and 0.4 to 0.5 m high, with larger turf covered stones at the edges. A 2 m wide projection from the external northern edge is of uncertain character. Originally the ring would have measured around 14 m across, enclosing an area about 8.5 m in diam (fig. 6) (SS 48579039).

RCAHM 209 is on level ground at 150 m OD beneath an eminence on a wide terrace north of the main ridge crest. The stony ring, 20 m across N-S and 21 m E-W, is 2.2 to 4.5 m wide and up to 0.4 m high. The bank is disturbed at a number of points, which accounts for some loose stone in the interior. An area around 12-13 m across is enclosed. There seem to be two deliberate breaks in the ring; the north-western break is up to 4 m wide, with larger stones on the edge of the southern terminal suggesting kerbing, with the opposed south-eastern break, a 1 m wide passage defined by upright stones (figs 6 and 7) (SS 49279020).

RCAHM 215 is towards the edge of a terrace at 145 m OD beneath a minor eminence north of the main ridge crest. The ring is 16 m across and comprises a stony bank 2 to 2.5 m wide and about 0.3 m high, enclosing an area 10.5 m N-S by 11 m E-W. Some larger stones define both the inner and outer edges. The southern inner edge has been disturbed, spreading stone within the interior. A 3 m break in the ring's western arc constitutes an entrance, and a likely opposed eastern passage is marked by larger stones in the bank (figs 6 and 7) (SS 50398962).

RCAHM 221 is in a shallow saddle on the main ridge crest at 175 m OD. The low but well defined stony ring, 0.2 to 0.3 m high, is up to 2 m wide and measures 8 m across. An area around 5 m wide is enclosed. A constriction and reduction in height of the bank could mark a WNW-facing break (fig. 6) (SS 50758921).

GCRC I lies at c.130 m OD on the main northerly scarp slope. The oval ring measures 11 m N-S by 9 m E-W, with a stony bank up to 2 m wide and 0.3 m high enclosing an area 6 m N-S and 5 m E-W. A large boulder lay to each side of a break, 0.5 m wide, in the northern arc (figs 6 and 8) (SS 49079072).

GCRC II is sited 22 m north of GCRC I at c.122 m OD on a steep slope. The ring, 10.5 m across N-S and 10 m E-W, comprised a bank up to 0.5 m high, around a hollow with an uneven stony surface 7 m across. Within disturbance in the northern part of the cairn was a large boulder. Four adjacent boulders along the inner face of the bank suggested kerbing (figs 6 and 8) (SS 49089075).

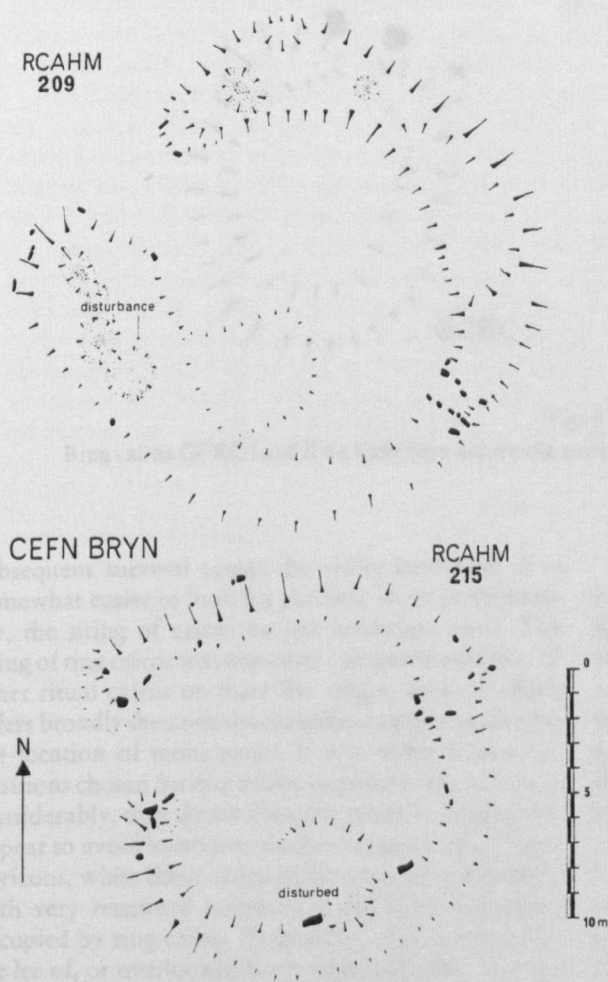


Fig. 7

Ring cairns RCAHM 209 and 215 on Cefn Bryn

ANALYSIS OF THE SURVEY

Siting in the landscape and in relation to other monuments

The probable ring cairns all occur within groups of other ritual cairns on upland ridges which are either common land, or, in the case of the Carmel group, poor and unimproved agricultural land. Barrows and cairns occur individually and in clusters elsewhere in this area (Ward 1976; 1982; 1987a; Morris and Ward 1984 for SE Dyfed; RCAHM 1976a, nos 168, 197, 231-34 for Gower). They do not include any other likely examples of ring cairns. The distribution of cairns and tumuli, particularly away from upland commons and unimproved land, will be related to the effects of subsequent land use (Roese 1980-82, 579-82). On Gower though, it should at least be noted that cairns which survive at lower altitudes, away from major ridges are also mostly on apparently unimproved common, where ring cairns would have had much the same chance of surviving to the present day, had they been built.

Whatever landuse and demographic factors determined the original distribution of monuments and their

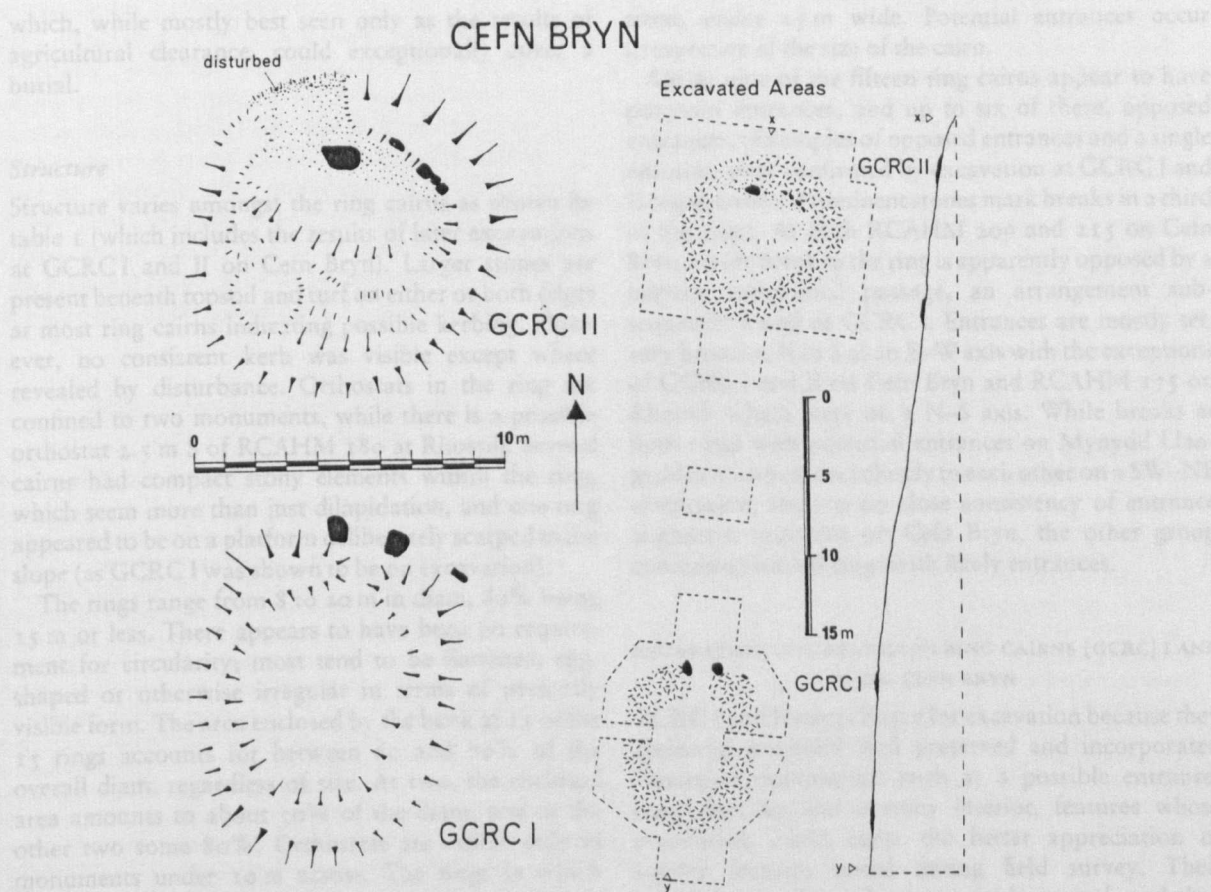


Fig. 8

Ring cairns GCRC I and II on Cefn Bryn before excavation, together with the extent of the excavated areas

subsequent survival across the wider landscape, it is somewhat easier to look for patterns in, or preferences for, the siting of cairns on like-landscape units. The siting of ring cairns was therefore compared with that of other ritual cairns on these five ridges, each of which offers broadly the same topographical opportunities for the location of monuments. It was noted that while positions chosen for ring cairns and other cairns overlap considerably, they do not coincide entirely. Ring cairns appear to avoid locations which offer particularly wide horizons, while other cairns tend not to be in positions with very restricted horizons of the kind sometimes occupied by ring cairns. Frequently, ring cairns are in the lee of, or overlooked from, higher ground. A slope or terrace below a ridge crest is a typical position for a ring cairn, in this region at least (Ward 1988).

Again questions of survival hinder comparison of the number of ring cairns with other ritual cairns. The fifteen likely ring cairns identified in this study are part of five cairn groups which comprise altogether around 54 likely ritual cairns, i.e. 28% of the total. There is little consistency, however, in the relative number of ring cairns from group to group; 7 out of 15 on Cefn Bryn; 3 out of 7 on Mynydd Llangyndeyrn; 1 out of 4 at Carmel; 3 out of 14 on Rhossili; and a mere 1 out of 14 on Llanmadoc Hill. Only two ring cairns, GCRC I and II on Cefn Bryn, are located closely together as a pair. The location of a ring cairn adjacent to other cairns is more common, although not invariable. Some pairing with other ritual cairns is apparent, particularly on Cefn Bryn (fig. 6), although interpretation is complicated by large numbers of smaller cairns on the ridge

which, while mostly best seen only as the results of agricultural clearance, could exceptionally cover a burial.

Structure

Structure varies amongst the ring cairns as shown by table 1 (which includes the results of later excavations at GCRC I and II on Cefn Bryn). Larger stones are present beneath topsoil and turf on either or both edges at most ring cairns indicating possible kerbing. However, no consistent kerb was visible except where revealed by disturbance. Orthostats in the ring are confined to two monuments, while there is a possible orthostat 2.5 m S of RCAHM 180 at Rhossili. Several cairns had compact stony elements within the ring, which seem more than just dilapidation, and one ring appeared to be on a platform deliberately scarped in the slope (as GCRC I was shown to be on excavation).

The rings range from 8 to 20 m in diam, 80% being 15 m or less. There appears to have been no requirement for circularity; most tend to be flattened, egg-shaped or otherwise irregular in terms of presently visible form. The area enclosed by the bank at 11 of the 15 rings accounts for between 60 and 70% of the overall diam, regardless of size. At two, the enclosed area amounts to about 50% of the diam, and at the other two some 80%. Orthostats are visible only in monuments under 10 m across. The rings in which consistent kerbing (as opposed to prominent stonework at entrances) was exposed were small to medium-

sized, under 15 m wide. Potential entrances occur irrespective of the size of the cairn.

Up to nine of the fifteen ring cairns appear to have potential entrances, and up to six of these, opposed entrances. (Examples of opposed entrances and a single entrance were confirmed by excavation at GCRC I and II respectively.) Prominent stones mark breaks in a third of the rings. At both RCAHM 209 and 215 on Cefn Bryn a *wide* break in the ring is apparently opposed by a *narrow* stone-lined passage, an arrangement subsequently found at GCRC I. Entrances are mostly set, very broadly, N or S of an E-W axis with the exceptions of GCRC I and II on Cefn Bryn and RCAHM 175 on Rhossili which were on a N-S axis. While breaks at both rings with potential entrances on Mynydd Llangyndeyrn correspond closely to each other on a SW-NE orientation, there is no close consistency of entrance alignment apparent on Cefn Bryn, the other group containing several rings with likely entrances.

EXCAVATION OF GREAT CARN RING CAIRNS (GCRC) I AND II ON CEFN BRYN

GCRC I and II were chosen for excavation because they appeared relatively well preserved and incorporated structural elaborations such as a possible entrance, inner kerbing and a stony interior, features whose excavation could assist the better appreciation of similar features noted during field survey. Their position on a steep slope was fairly typical, and they presented an opportunity, unique in the area, to

TABLE 1: SUMMARY OF VISIBLE STRUCTURAL FEATURES

	<i>Mynydd Llangyndeyrn</i>	<i>Carmel</i>	<i>Rhossili Down</i>	<i>Llanmadoc</i>	<i>Cefn Bryn</i>
Visible kerb	ML 11		RCAHM 181		GCRC II
Orthostats in bank	ML 11		RCAHM 181		
Possible orthostat beyond ring			RCAHM 180		
Stony interior			RCAHM 180	RCAHM 196	GCRC II
On scarped platform	ML 8				GCRC I
Single break visible in ring		Hendre Gored			RCAHM 221, GCRC II
Opposed breaks in ring	ML 8 and 11		RCAHM 175		RCAHM 209 and 215, GCRC I
Break in ring highlighted by stones	ML 8		RCAHM 175		RCAHM 209 and 215, GCRC I

examine closely-paired rings (fig. 8; pl. 10a). They were totally excavated in May and June 1981 and 1982 respectively, with the exception of two 1 m wide sections across the ring of GCRC I, and were then reconstructed for display (pl. 10a). Limited excavation between the rings revealed no archaeological features. However, considerable quantities of presumably glacially-deposited stone were found suggesting that the builders did not have to look far for materials. Finds are in the National Museum of Wales and the records in the Swansea office of the Glamorgan Archives Service.

EXCAVATION OF GREAT CARN RING CAIRN I (GCRC I) (fig. 9)

The ring and central area

The ring (3) measured 10.4 m N-S and 9 m E-W and was divided into two sections of stony bank by breaks to N and S (pl. 10b). The eastern section curved only slightly and was up to 2.4 m wide and 0.5 m high. The western section had a pronounced curve ending in two bulbous terminals. Its width varied from 1.8 m, to 2.8 m at the terminals, and it was up to 0.4 m high. Some stone had slipped from the bank through dilapidation but there was no disturbance. The bank's surface was flat or slightly convex. Its inner edge was marked by irregularly spaced stones larger than those in the bank, or else by stacked stone. The outer edge was less well defined except that at both northern and southern terminals of the western section, short arcs of larger stones (28 and 29) had been laid towards the outer edge of, but still within the bank. The north-western arc (28) coincided with the edge of an area of coarse yellow-brown soil (27 see below). These were the only instances of stones laid with some care in the body of the bank which generally was constructed with dumped stone, mostly sandstone and Millstone Grit. The upper stones were surrounded by black organic soil, with the lower set in a greyish-brown matrix. Bracken roots riddled the bank, penetrating into the soil beneath.

The northern break formed a passage through the ring 2.3 m long and 1.1 to 1.5 m wide, its outer end marked by a large boulder to either side (pl. 10b). The western boulder was 0.6 m high and 0.7 m across and the eastern 0.65 m high and 0.8 m wide. The southern break comprised a passage 1.4 m long, 0.9 m wide at its inner edge and 0.8 m at its outer. It was lined by substantial facing stones, up to 0.5 m high (pl. 10b) and had been filled to a depth of 0.2 m with tightly wedged stone (7) (pl. 11a). The northern limit of the fill was marked with larger stones on the line of the ring's inner edge.

The area within the ring measured 5.9 m N-S and 4.9 m E-W. It was fairly level except for a low step about 0.1 m high to the S (30). Against the inner edge of the south-western arc was an area of hard grey-white soil 0.45 × 0.5 m × 10 mm thick, embedded in which was one fragment and some flecks of charcoal (20). W of centre was a flat stone, flush with the surrounding surface (pl. 10b). It measured 0.62 × 0.48 × 0.15 m thick. Around its southern and eastern edges was a

deposit of yellow-brown soil (13), no more than 50 mm thick. It was distinguished by a softer, finer consistency and slight variation in colour from the surrounding bright brown sandy clay (4) which was the dominant natural horizon. This yellow-brown soil, together with the stone, filled a hollow measuring 0.1 × 0.7 m scooped in the brown sandy clay (4). It had sloping sides, a flat base and was up to 0.14 m deep. A void, 15 mm wide and 0.17 m deep, appeared in its southern side, penetrating the ground at an angle of 45° (fig. 10).

On the base of the stone hollow was a thin black circular line defining an area of clean, soft yellow-brown soil up to 50 mm thick, entirely free of rootlets (17). This was the upper fill of an oval, steep-sided pit (16), 0.33 × 0.35 × 0.13 m deep (figs 9, section A-B, & 10). The lower part of the pit contained a dark-grey sandy soil with charcoal, bonded by root growth (18). Bone fragments in the grey deposit, were concentrated in association with a yellow-brown fibrous, spongy material with a musty organic smell (19) (fig. 10, section E-F), which broke up along regular lines revealing a platy structure. Its decayed condition prevented further examination. The bone, which weighed 0.76 g, was almost white in colour; the largest fragment was 13 mm long, the average length 6 mm. It was examined by Dr Glynne R. Jones who reported that it was cremated and that its origin could not be determined. The charcoal was identified by Mr A. D. Tipper as being mostly oak, *Quercus* sp. (30.05 g), with a little hazel, *Corylus* sp. (0.5 g). The fragmentary nature of the charcoal precluded assessment of the annual growths represented though no heart wood was obvious. The charcoal provided a radiocarbon determination of 3415 ± 70 BP (1465 ± 70 bc) (Birm-1150). Calibration following Pearson and Stuiver (1986, 845, fig. 1c) suggests 68% and 95% probabilities of the calendar date falling between 1640 and 1820/1870 BC, and 1520 and 1900 BC respectively.

Features beneath and around the ring

Within the northern half of the ring was a deposit of coarse-textured yellow-brown soil (27), covering an area 6.5 m E-W and 4.1 m N-S. This feature, of almost imperceptible thickness at its southern edge, increasing to 0.1 m at its northern, overlay the natural bright-brown horizon (4) (fig. 9, sections C-D). It extended under the north-western arc of the ring towards its outer edge, and across the northern break, but was not seen under the ring's eastern arc. On its surface, beneath the north-western terminal of the ring, was a concentration of charcoal flecks about 0.15 m across penetrating 30 mm into yellow-white soil, with further fragments scattered in the entrance (25). A patch of grey-white soil (26), with a brittle surface, lay on the brown sandy clay (4) beneath the south-eastern arc of the ring, partially extending into the interior. It contained a few charcoal flecks and measured 0.86 × 0.3 m × 25 mm thick.

A reddish-black soil (22) underlay the ring except where the coarse yellow-brown soil (27) was present under the north-western arc (fig. 9, sections). A soil profile through the ring, together with a control profile, were examined by Dr K. Goodwin. The reddish-black soil was noted as having a relatively high organic content. The descriptions are in the site record, together with an inconclusive analysis of the pollen

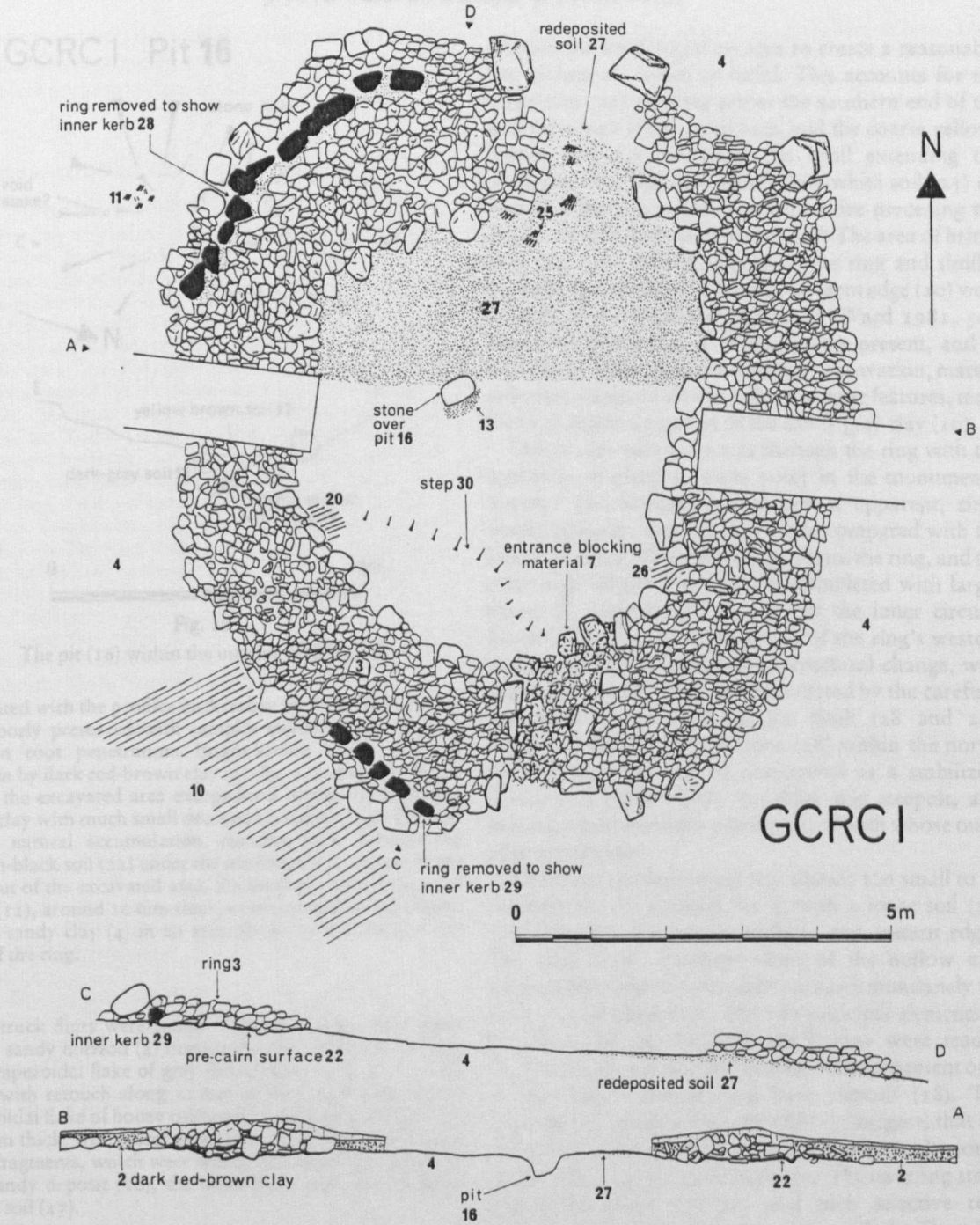


Fig. 9

GCRC I after removal of tumble. The section A to B was cut back subsequently to the inner edges of the ring

GCRC I Pit 16

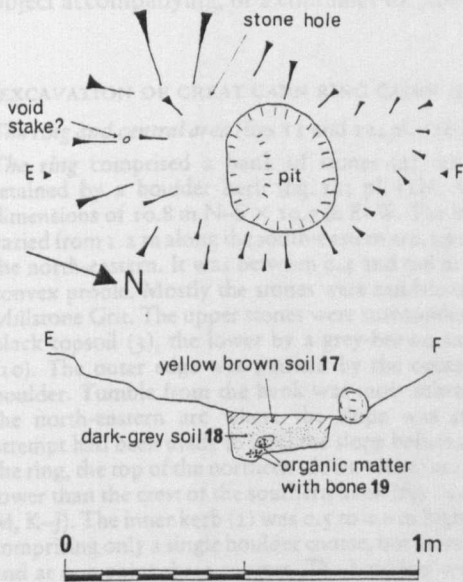


Fig. 10

The pit (16) within the interior of GCRC II

associated with the profiles undertaken by Dr Q. Kay. Pollen was poorly preserved with samples contaminated through bracken root penetration. Bright-brown sandy clay (4) overlain by dark red-brown clay (2) (fig. 9, sections A-B) ran across the excavated area except for a deposit of hard grey sandy clay with much small decayed sandstone (10). This too was a natural accumulation, running from beneath the reddish-black soil (22) under the south-western section of the ring, out of the excavated area. Six small patches of charcoal flecks (11), around 10 mm thick, concentrated on the bright-brown sandy clay (4) in an area about 0.6 m across, 0.5 m west of the ring.

Finds

Four struck flints were found. Two came from the bright-brown sandy horizon (4) outside the ring; a scraper worked on a trapezoidal flake of grey flawed flint, 29 × 21 × 4 mm thick, with retouch along 21 mm of the longer edge, and a trapezoidal flake of honey coloured translucent flint, 24 × 12 × 3 mm thick, with traces of wear on its longer edge. Of the other fragments, which were waste, one came from the hard grey sandy deposit (10), the other from the coarse yellow-brown soil (27).

Interpretation of features and sequence

Around most of its circumference the ring over-lay the reddish-black soil (22) which is probably derived from the vegetation on the pre-monument surface. Activity had taken place before the construction of the ring,

notably the levelling of an area to create a reasonably flat surface on which to build. This accounts for the slight step (30) running across the southern end of the interior which is the scarp face, and the coarse yellow-brown soil (27) which is the spoil extending the platform. The charcoal and yellow-white soil (25) on this platform may either indicate a fire preceding the ring, or residual material in the spoil. The area of brittle grey clay (26), partly underlying the ring and similar material against the ring's south-western edge (20) were initially also interpreted as hearths (Ward 1981, 50). However, few flecks of charcoal were present, and as such flecks were common across the excavation, mature reflection suggests other origins for these features, most likely as isolated pockets of the sandy grey clay (10).

There were two entrances through the ring with the southerly blocked at some point in the monument's history. The deliberation of this is apparent, since blocking stones were tightly packed compared with the looser material which had slipped from the ring, and the inner edge of the blocking was completed with larger stones in imitation of the rest of the inner circumference. The expanded terminals of the ring's western section could also result from structural change, with stone added to an original face created by the carefully laid arcs of stone within the bank (28 and 29). However, the arc of laid stone (28) within the north-western terminal can be interpreted as a stabilizing device at a point where the slope was steepest, also helping retain the earth platform (27) with whose outer edge it coincided.

The stone sealing the pit was slightly too small to fill the hollow (14) scraped for it, with a loose soil (13) accumulating around its southern and eastern edges. The void in the southern slope of the hollow may indicate the presence of a stake, or more mundanely the limit of a bracken root. The two principal elements of the fill of the pit dug into the hollow were readily distinguished, not least by the dense rootlet present only in the lower charcoal and bone deposit (18). The absence of rootlets in the upper fill (17) suggests that the root mat binding the lower deposit had formed prior to the material being placed in the pit. The covering stone effectively sealed the pit, and such selective root penetration and preservation seems unlikely. There is a case for suggesting, therefore, that the charcoal and bone were disinterred elsewhere, roots and all, and reburied. If this were so, the determination of 3415 ± 70 BP (Birm-1150), will relate to the earlier deposition, not burial at GCRC I. The yellow-brown

organic material associated with the bone (19) was most likely completely decomposed wood, perhaps an object accompanying, or a container for, the bone.

EXCAVATION OF GREAT CARN RING CAIRN II (GCRC II)

The ring and central area (figs 11 and 12; pl. 11b)

The ring comprised a bank of stones (4), its inner edge retained by a boulder kerb (fig. 11; pl. 11b), with overall dimensions of 10.8 m N-S × 10.7 m E-W. The bank's width varied from 1.2 m along the south-eastern arc, up to 3 m along the north-eastern. It was between 0.4 and 0.6 m high with a convex profile. Mostly the stones were sandstone with some Millstone Grit. The upper stones were surrounded by brown-black topsoil (3), the lower by a grey-brown sandy deposit (10). The outer edge was marked by the occasional larger boulder. Tumble from the bank was most substantial along the north-eastern arc where the slope was steepest. No attempt had been made to level the slope before constructing the ring, the top of the northern (down-slope) arc being 0.8 m lower than the crest of the southern bank (fig. 12, sections L-M, K-J). The inner kerb (1) was 0.5 to 0.6 m high, sometimes comprising only a single boulder course, but more usually two and at one point three courses. The boulders were carefully laid end-to-end, creating a substantial kerb which effectively retained the bank. It was well preserved except where deliberately disturbed. Beneath the undisturbed ring was a thin grey-black horizon with areas of iron panning (17), 2 to 3 mm thick, fragmented by the weight of stone. The underlying natural horizon across the excavated area was a bright-brown sandy clay (13), overlain outside the monument by a reddish-brown clay (7).

One original *break in the bank* was found (fig. 11), a 0.9 to 1.2 m wide by 1.6 m long passage through the southern section of the ring with sides of stacked stone. Two large boulders side by side blocked the passage 0.5 m from its inner end (pl. 12a). The outer section had been filled with stone (18) flush with the profile of the ring, the inner blocked by one large stone and a section of carefully stacked smaller stones placed on the circumference of the kerb completing its circuit (pl. 12b).

The egg-shaped *area within the ring* measured 6.6 m N-S and 7 m E-W, sloping relatively steeply from S to N. A patch of reddish soil and charcoal flecks, around 0.5 m across and 50 mm thick, lay against the kerb's north-eastern arc (20). A flat sandstone, 0.36 m across and 80 mm thick, was embedded in the reddish soil (fig. 11) and showed no signs of having been subjected to heat. Beneath the stone was a *pit* (23), 0.35 × 0.24 m wide at the top, dug 0.15 m into the bright brown soil (13). The upper half of the fill comprised reddish soil mixed with small stones and charcoal flecks, the lower half of black soil, small stones and charcoal flecks (fig. 11, sections N-P). The reddish soil (20) and pit-covering stone were overlain by a loose mixture of small stone and grey-brown sandy soil (9, see below), at the limit of the disturbance affecting the northern part of the monument. The feature, however, was undamaged, pit and contents being preserved intact beneath the covering stone. Around 70 g of

charcoal was recovered through flotation of the pit fill; species could not be identified by Mr A. D. Tipper on account of the small size of the flecks. A radiocarbon determination of 3510 ± 60 BP (1560 ± 60 BC) (Birm-1179) was obtained from the charcoal. Calibration, following Pearson and Stuiver (1986, 845, fig. 1c), suggests 68% and 95% probabilities of the date falling between 1750 and 1925 BC, and 1685 and 1990/2030 BC respectively.

The southern part of the area within the ring contained a *stone fill* (5) up to the top of the inner kerb but consistently lower than the crest of the bank behind the kerb (fig. 12, sections K-J, L-M; pl. 13a). They were dumped without formal arrangement save that the lower stones tended to be larger, up to 0.5 m across, particularly towards the centre, and were surrounded by fine grey-brown sandy soil (10), the upper stones by brown-black soil (3) (pl. 13b). Bracken roots penetrated between stones into the horizons beneath. The surface of the stone fill followed the contours of the ring until broken by the disturbance (9) in the northern part of the monument. Where undisturbed, it overlay a brittle grey-black horizon with areas of iron panning (17), 2 to 3 mm thick, indented and broken by the pressure of stones (fig. 12, sections). The all-pervading bracken roots prevented collection of uncontaminated samples for environmental analysis from beneath either stone fill or ring.

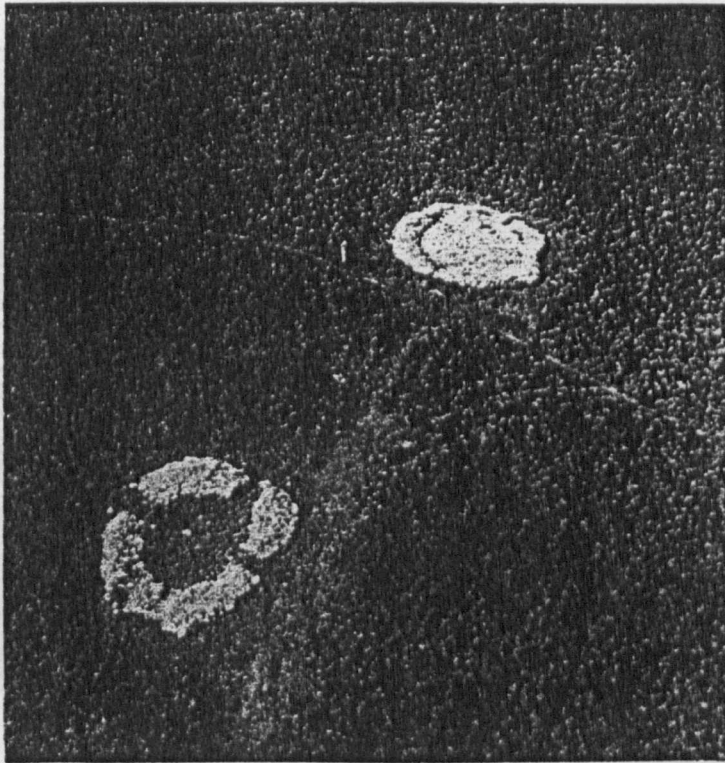
The disturbance and features outside the ring

Quantities of stone had been taken from the northern part of the monument's interior (fig. 12), but the bank had survived intact except for a cut somewhat over 2 m wide (fig. 11). A mix of small stones, and grey-brown soil with elements of shattered iron pan (9) remained where stone had been removed, with impressions of larger stones in the underlying soil (11 and 12), (fig. 12). There were two large boulders (2) in the disturbance. One measured 0.7 × 0.55 m, the other 1.2 × 0.7 m. Two features on the line of the kerb suggested the positions of displaced kerb stones. One was an oval depression, 0.66 × 0.41 m up to 0.14 m deep (16), filled with grey-brown soil and small stone. The other was a steep sided pit (14), oval at the lip where it measured 1.02 × 0.97 m, descending 0.66 m to a stepped base 0.7 m across. It was filled by loosely-mixed black greasy soil, stone and bracken roots (figs 11 and 12, sections J-K).

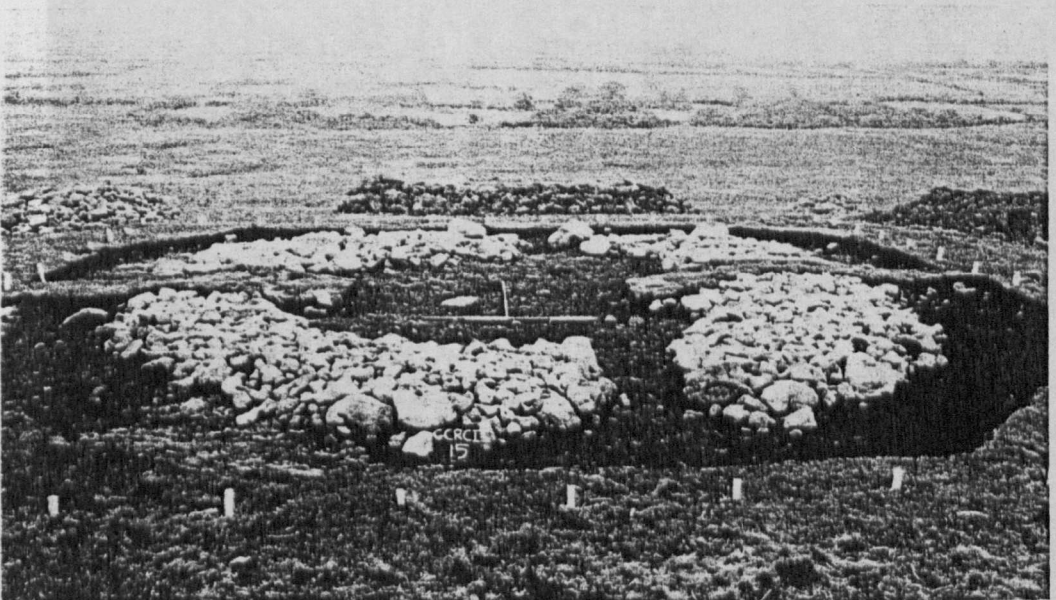
An accumulation of stone (8) piled against the outer face of the ring on its eastern arc (pl. 13a) seemed more compact than tumbled stone elsewhere around the ring. The material was level with the top of the ring and covered an area 2.25 × 1.3 m. The stone rested on the bright brown soil (13) and, like the tumble, was enveloped by reddish-brown soil (7). There were three concentrations of charcoal flecks (24, 25, 26) beyond the southern arc of the ring on the bright brown soil (13). They ranged between 50 to 120 mm across and 2 to 3 mm deep.

Finds

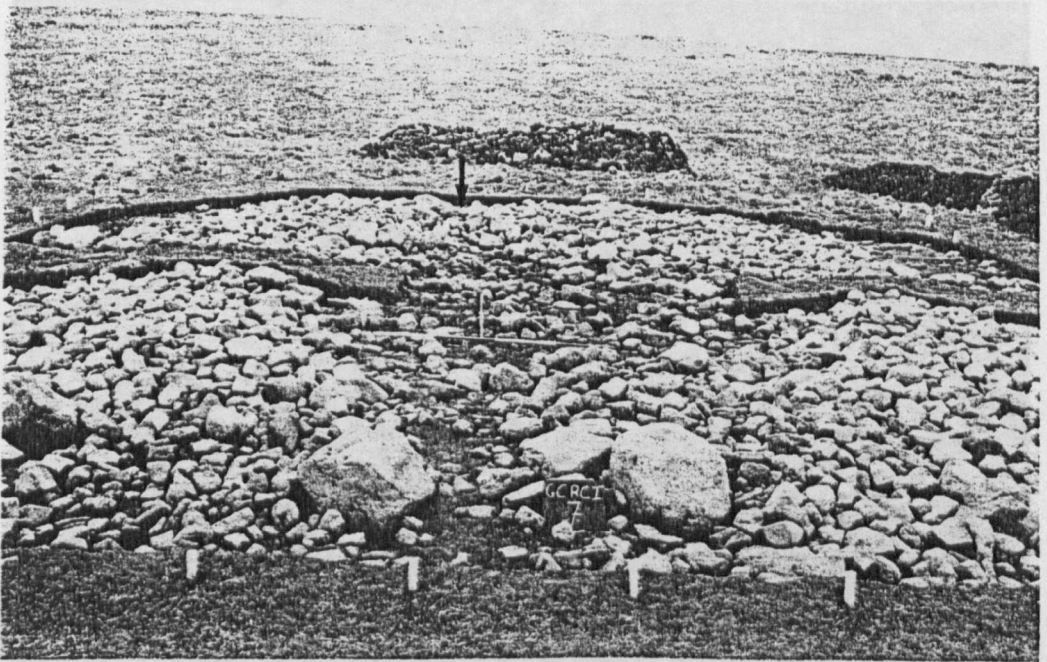
These were a flint scraper on light grey patinated flint, 29 × 15 × 3 mm thick, with an entire long side retouched, from the top of the fill (5) inside the ring; and a polishing or whetstone from the bright brown soil (13) outside the SE edge of the



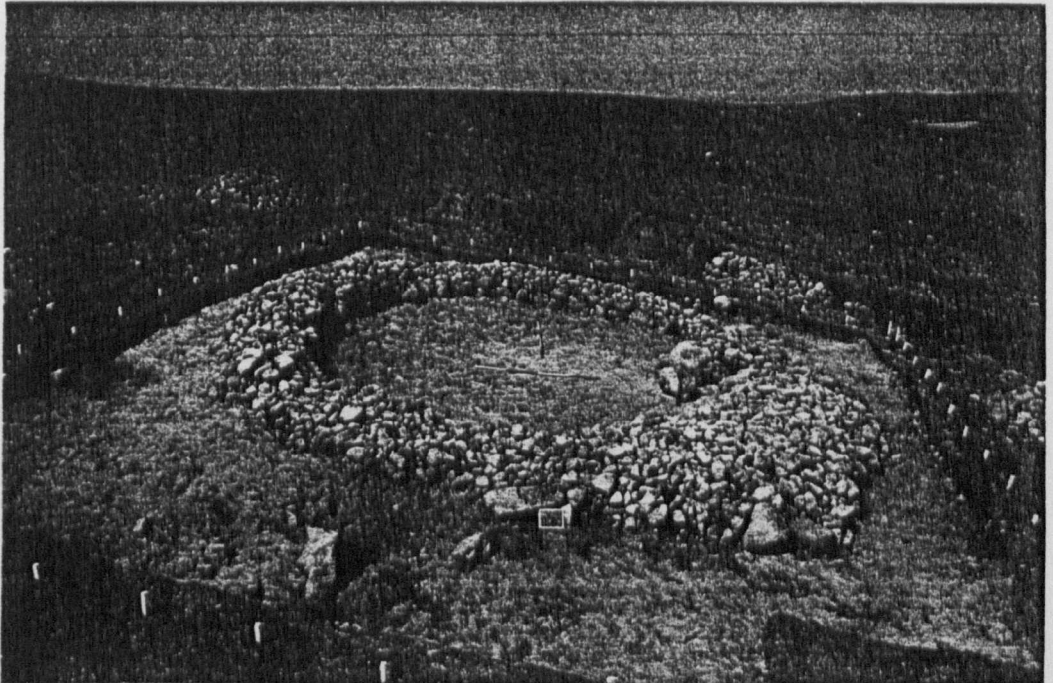
(a) Aerial view of GCRC I and GCRC II from the SE after excavation and reconstruction
(*Photograph, G. B. D. Jones*)



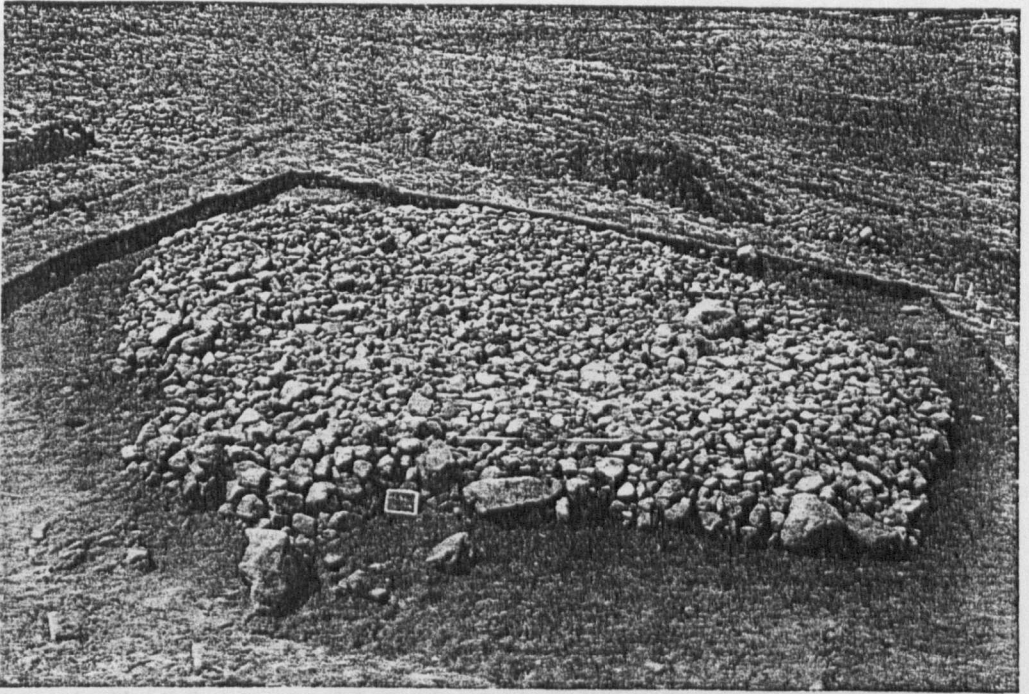
(b) GCRC I from the S after removal of tumbled stone and the blocking material from the passage of the southern entrance. Note the flat stone within the interior which covered the pit (scale = 2m)



(a) GCRC I from the N before the removal of tumbled stone. Note the pair of large boulders flanking the N entrance and the blocked entrance (arrowed) (scale = 2m)



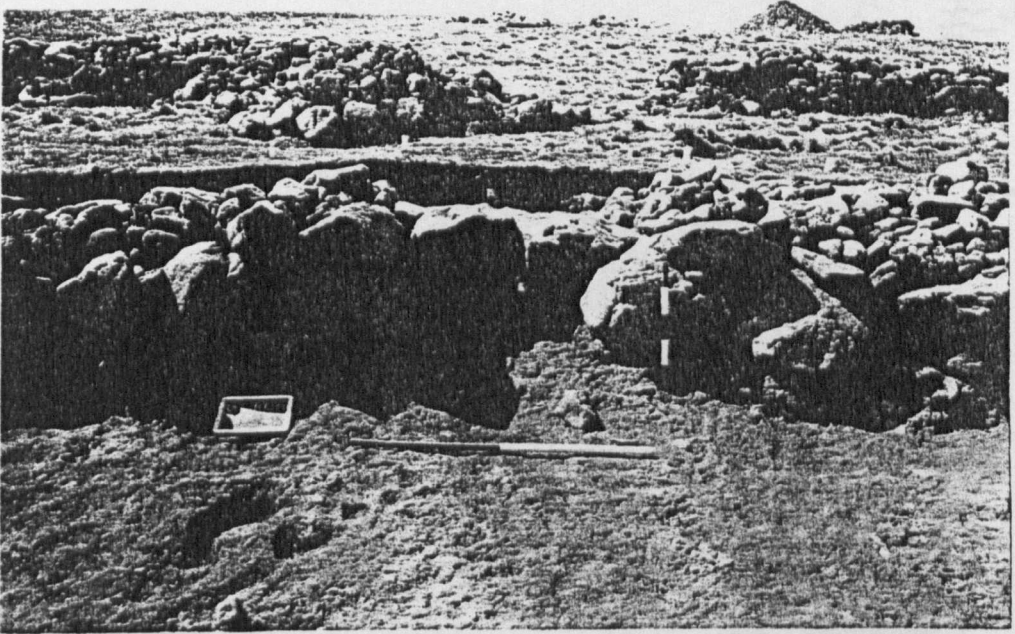
(b) GCRC II from the east with the interior cleared of stone except for the two displaced kerb stones (horizontal scale = 2m; vertical = 0.5m)



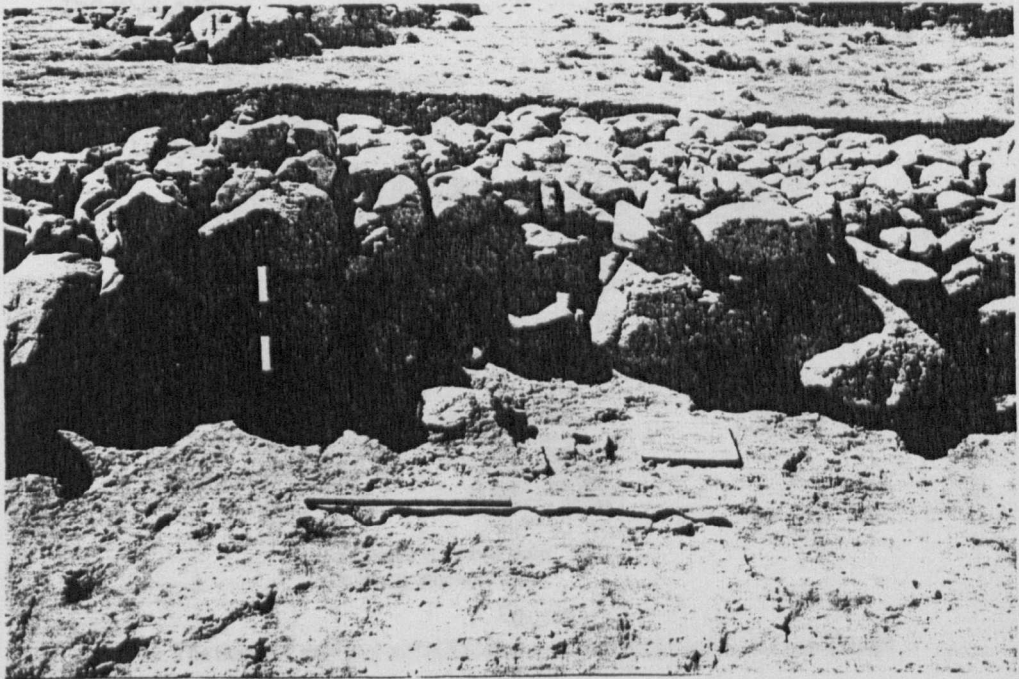
(a) GCRC II from the E showing the ring with stone fill. The problematic accumulation of stone (8) against the outer edge of the eastern arc of the ring is shown (scale = 2m)



(b) A section (fig. 12, K-J) through an undisturbed area of the stone fill of the interior (scale = 1m)



(a) The southern entrance seen from the interior (N) with smaller elements of the blocking removed. Remaining are the two boulders in the passage, and the boulder (against which the 0.5m vertical scale stands) which partially completed the kerb across the inner opening (horizontal scale = 1m)



(b) The careful completion of the kerb's inner face seen from the interior (N) where the bank was broken by an entrance (horizontal scale = 1m; vertical = 0.5m)

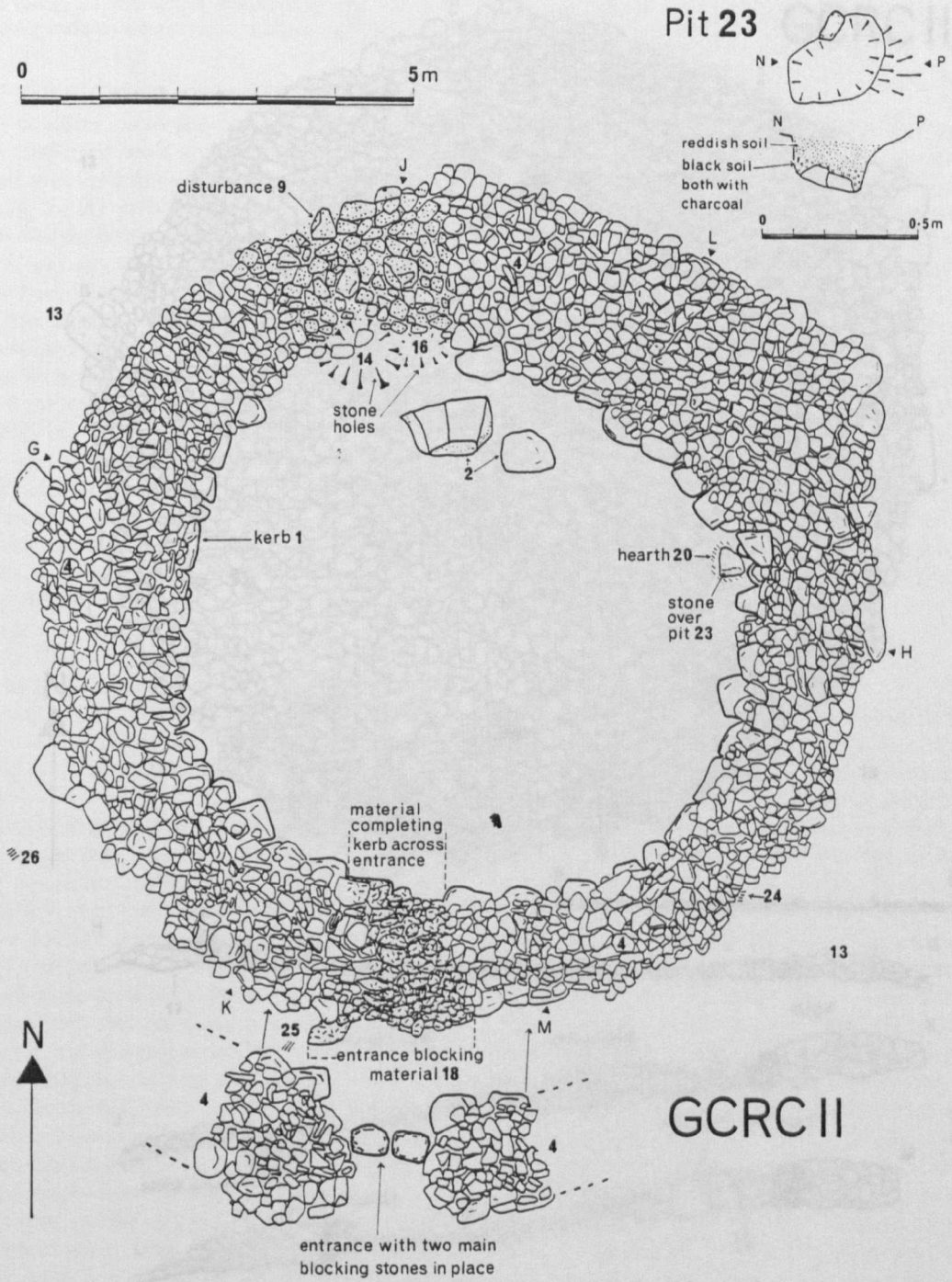


Fig. 11

The ring and entrance at GCRC II after removal of tumble and stone in-fill

GCRC II

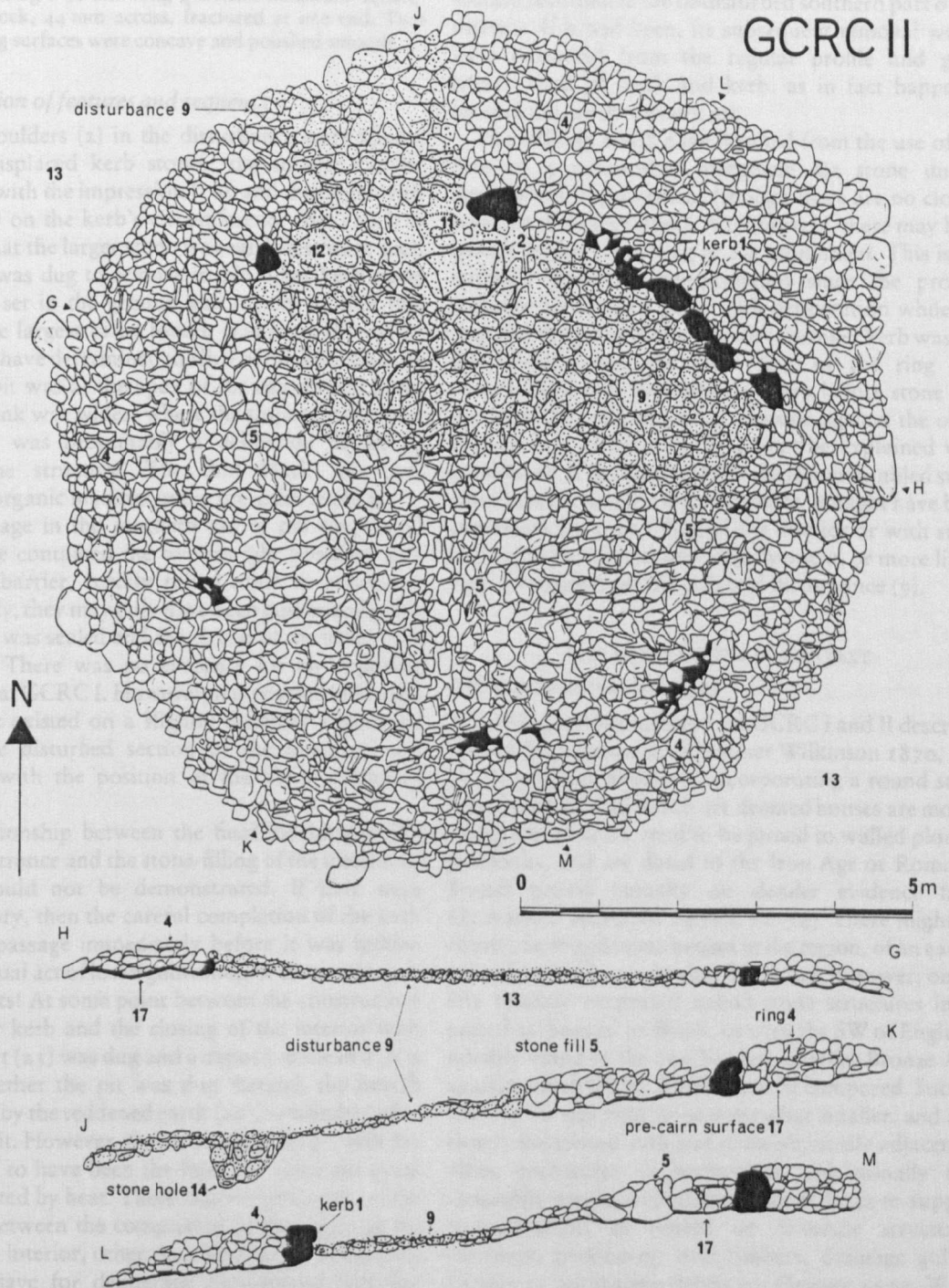


Fig. 12
GCRC II after removal of tumble, with stone in-fill in place; sections through the cairn

bank comprising a 96 mm long quartzite sandstone square-sectioned block, 44 mm across, fractured at one end. Two adjacent long surfaces were concave and polished smooth.

Interpretation of features and sequence

The two boulders (2) in the disturbance were almost certainly displaced kerb stones; the smaller can be associated with the impression (16), and the larger with the pit (14) on the kerb's circumference (fig. 11). It is probable that the larger stone was earth-fast since such a deep pit was dug to remove it. No other kerb stone was found set in the ground and it may be that this boulder, the largest to be found, was naturally earth-fast. It may have determined the line of the kerb since its presumed pit was at the apex of the egg-shaped kerb. That the bank was widest where the slope was steepest to the NE was presumably a deliberate device to stabilize the structure. The thin black soil (17) represents organic material in the pre-cairn surface.

The passage in the southern arc of the ring could always have contained the two upright boulders as a temporary barrier, readily rolled aside as necessary. Alternatively, they may only have been positioned when the passage was sealed and the circuit of the inner kerb completed. There was no evidence for an opposing entrance as at GCRC I. However, it is possible that such an entrance existed on a slightly different alignment, through the disturbed section of the northern arc, coinciding with the position of the likely earth-fast stone (2).

The relationship between the final blocking of the southern entrance and the stone-filling of the interior of the ring could not be demonstrated. If they were contemporary, then the careful completion of the kerb across the passage immediately before it was hidden betrays a ritual act of lost significance, or the working of perfectionists! At some point between the construction of the inner kerb and the closing of the interior with stone, the pit (23) was dug and a deposit made in it. It is unclear whether the pit was dug through the hearth represented by the reddened earth (20), or whether a fire was lit over it. However, the covering of the pit with the stone seems to have been the final act, since the stone was unaffected by heat. There was no indication of the time-span between the completion of the ring and the filling of the interior, other than that the kerb was well preserved (save for deliberate disturbance), arguing either that there was no time for dilapidation to occur, or that it had been well maintained. It is unlikely that the stone within the ring was ever piled higher than the

surface recorded in the undisturbed southern part of the interior. If it had been, its subsequent removal would have detracted from the regular profile and good preservation of bank and kerb, as in fact happened around the north-western arc.

The infilling could have resulted from the use of the ring as a convenient receptacle for stone during agricultural improvement (though there are no closely adjacent clearance piles). Alternatively, there may have been a deliberate sealing of the monument. This is the author's preferred interpretation since the process seems to have taken place with deliberation while the ring was in a good state of repair (the inner kerb was not dilapidated), and the inner face of the ring was completed across the entrance break before stone was dumped. The accumulation of stone against the outer eastern face of the ring (8) cannot be explained with confidence. It did not resemble the looser tumbled stone elsewhere around the circumference. It might have been connected with the filling of the interior or with stone collection for agricultural improvement, or more likely with dumping from the adjacent disturbance (9).

THE EXCAVATIONS IN CONTEXT

The nature of the structures

The only previous reference to GCRC I and II describes them as hut enclosures (Gardiner Wilkinson 1870, 28). In Glamorgan, structures incorporating a round stone foundation or wall which are deemed houses are mostly under 6 m in diam, tend to be joined to walled plots or paddocks, and are dated to the Iron Age or Romano-British period (usually on slender evidence from excavation: RCAHM 1976b, 72-74). There might, of course, be round stone houses in the region, of an earlier period, rather larger in size. There are, however, only a few recently excavated round stone structures interpreted as 'houses' in Wales, or even the SW of England, reliably dated to the late Neolithic/earlier Bronze Age, against which GCRC I and II can be compared. Such as are known still tend to be somewhat smaller, and also closely associated with and often physically adjacent to plots, enclosures or boundaries. Additionally they frequently produce circumstantial evidence to support reconstruction as roofed or domestic structures: variously, post-holes, wall timbers, drainage gullies, hearths or occupation debris (eg Fleming 1979; Wainwright and Smith 1980; Smith 1985). The cumulative absence of any of these associations or features makes interpretation of GCRC I and II as roofed or domestic

structures difficult and unconvincing. (Post- and stake-holes found at two Welsh ring cairns cannot be reconciled as roofed structures either (Lynch *et al.* 1973, 31–37; Hogg 1977, 28–33)). Rather, they are stone rings defining open areas approached through breaks in the banks. They therefore fall within the definitions of ring cairns cited at the outset, and can be compared in terms of structure, chronology and use with similar monuments elsewhere in SW Britain.

Excavated ring cairns elsewhere in SW Britain

Evidence for activity within the rings at GCRC I and II is limited to a pit at each site containing mostly charcoal, or charcoal-flecked earth, and a little bone at GCRC I. Deposits of charcoal in pits have been noted within ring cairns at Shaugh Moor on Dartmoor (Wainwright *et al.* 1979, 10–32), and at rings in mid and N Wales (Griffiths 1960; Hogg 1977; Lynch *et al.* 1974, 31–38; Lynch 1984). Some Welsh ring cairns have also produced cremated bone. Although these deposits have been greater than the miniscule quantity from GCRC I, it has been argued that the burials are still only of a 'token' nature (Lynch 1984, 27). It has been suggested that some of the smaller quantities of burnt bone found may be extracted from burials at other locations (Lynch 1984, 28), which may be echoed tentatively at GCRC I.

The radiocarbon determinations for GCRC I and GCRC II match those from similar monuments in both N Wales and on Dartmoor (Griffiths 1962; Lynch *et al.* 1974; 1984; Wainwright *et al.* 1979, 10–32), though the charcoal dated at GCRC I may come from an earlier deposit from elsewhere. There is no indication of the period over which GCRC I and II were used. It may be significant that there was so much less evidence for activity within the interiors of the two rings, perhaps suggesting a short time-span for activity, compared with some in mid and N Wales such as Moel Goedog I for which activity spanning a century or two was suggested (Lynch 1984, 30). The only suggestion that GCRC I and II may have been used through time comes from the identification of some structural modification, although this is very much less than at the Brenig ring cairn, Clwyd, which arguably was used over a considerable period (Lynch *et al.* 1974; Lynch and Allan 1975). Structural changes at GCRC I were relatively slight, with blocking of the southern entrance and possibly modification to the western arc of the ring. At GCRC II they were more dramatic, involving the blocking of the entrance passage and the filling of the central area with stone, but this represents the cessation of detectable use,

rather than continuity of activity. It is worth considering that GCRC I was constructed after this, explaining the proximity of two similar monuments, the one succeeding the other (as perhaps with the paired ring cairns on Moel Goedog (Lynch 1984)).

The excavations and the field survey (table 1)

The excavations complement the field survey in a number of respects, particularly as regards the elucidation of entrance arrangements. The confirmation that the N-facing break at GCRC I represented a deliberate entrance marked by portal stones, encourages a similar interpretation of such features at other rings. Discovery of blocked entrances at both GCRC I and II, which were not visible as surface features, shows that no assumptions can be made regarding the absence of entrances without excavation. The opposed entrances at GCRC I also supports the identification of similar arrangements at other rings in the area; the structural differences between the GCRC I entrances, the wide gap opposed to a narrow passage defined by carefully laid stone, echo those suggested for RCAHM 209 and 215, also on Cefn Bryn. The consistency of this arrangement at the one location is notable, and the frequent occurrence of likely entrances at rings throughout the area indicates a general concern with regulating access through the bank.

The structural elaboration of the bank, hinted at at a number of the rings surveyed, is amply in evidence at GCRC II, with its impressive kerb (though the contrast with the structure of the bank at GCRC I argues that there was no overriding preoccupation with the appearance of the bank as such). The blocking of entrances at both monuments, and the likely sealing of the interior at GCRC II, demonstrates modification of structure even though the time scale is speculative. The possibility of structural changes, deliberate re-design, must be considered when classifying monuments by field survey alone. For example, the presence of even substantial quantities of stone within a ring, an occurrence noted at several monuments during the survey, does not mean that the ring never defined an open area, with the sealing of the central area being a later event. The scarping of the slope to provide a level platform at GCRC I contrasts to the indifference to a fairly steep slope at GCRC II. An occasional concern that the enclosed area is reasonably level may be paralleled outside the region at the excavated ring cairns in the Brenig valley (Lynch *et al.* 1974) and on Moel Goedog I (Lynch 1984, 25).

9. A. H. Ward. RING CAIRNS IN SOUTH WALES

WHAT MAY HAVE BEEN THE FUNCTION OF RING CAIRNS?

Initially the case that ring cairns were concerned more with ceremony, albeit connected with mortuary ritual, rather than as repositories for the remains of the dead, was based largely on older or partial excavations with ambiguities in the data (Lynch 1972, 70-75). Subsequently, this interpretation has been asserted with increasing conviction as more ring cairns have been excavated with consistent results (Lynch *et al.* 1974; Lynch 1979, 9-11; 1980, 237-39; 1984, 23-36). The nature of bone deposits within ring cairns has been catalogued elsewhere (cf Lynch 1979; 1984). Where human bone has been found, it may be distinguished from 'conventional' burials of the period, for example, the exceptional half-burnt headless child from the Aber Camddwr ring cairn, Dyfed (Hogg 1977, 28-33). The 'token' character of many of the more numerous deposits of cremated bone has led to the suggestion that they too are 'abnormal' (Lynch 1984, 25-30). GCRC I's minute quantity of bone is an extreme example of 'tokenism'. Where 'conventional' burials are found, as at the Brenig ring cairn, they bear explanation as a late deposit, unassociated with the primary usage of the ring (Lynch *et al.* 1974, 38). 'Abnormality' of burial deposits is linked to the ring cairn's frequent proximity to other cairns, to imply that ritual within the ring was connected to interments at the other monument (Lynch 1980, 237).

While, therefore, a case may be made out that ring cairn burials can deviate from common contemporary practice, this requires cautious interpretation as regards attributing an extraordinary role to the monument. There are ample reminders of the diverse ways in which different societies regard death with consequences for treatment of the corpse (Ucko 1969; Binford 1972; Huntington and Metcalf 1979). Any exceptional aspect of a deposit of bone at a ring cairn could merely reflect society's view of the appropriate form of burial, determined by the deceased's particular characteristics or manner of death. Ring cairns intended as mortuary structures, albeit for burial of unusual character, might still cluster with monuments housing more conventional interments. Anyway, given the extensive range of potential motivations behind mortuary rituals, the role of these other cairns merely as repositories for the dead cannot always be assumed with confidence.

With these reservations, it remains possible that human bone on occasions was present only as a necessary ingredient for ceremonial. Occurrence only of minimal bone deposits, as at GCRC I, or lack of

evidence for *any* interment, as at GCRC II, Cefn Caer Euni II (Lynch 1986) and Shaugh Moor (Wainwright *et al.* 1979), argue that these ring cairns were not built for burial, at least of the physical remains of the dead. Rather, drawing in particular on their structural characteristics, their suitability as locations for public ceremonial stands out as a prominent, even predominant requirement. In this regard the following might be stressed on the basis that the design of a monument reflects the requirements, practical or symbolic, of its builders (Fleming 1972):

- a. The definition of an open area delimiting space for the intended activities.
- b. The creation of a level area within the ring, as at GCRC I though not invariably at other ring cairns.
- c. The provision of focal points for activity within the ring, which could account for the eccentricity of GCRC I's flattened circle creating the deeper western arc which accommodates the pit; the attention paid to the inner edge of the ring, for example the kerb at GCRC II, with hearths and pits most frequently at the periphery (Lynch 1972); and the inclusion of prominent stones in the bank, illustrated by the likely earth-fast boulder at the apex of the egg-shaped kerb at GCRC II.
- d. The deliberation with which access to the interior was channelled through entrances, a pre-occupation indicated by the purposeful blocking of the southern entrance at GCRC I and the prominence afforded to its northern entrance by flanking boulders. (Could they have been rolled across to bar, symbolically, access when necessary, with the boulders in the entrance passage of GCRC II performing the same role?)
- e. The effort taken in filling the interior of GCRC II with stone, apparently to deny further access to, or use of the enclosed area, perhaps emphasizing the special significance of the enclosure.
- f. The preferred siting of ring cairns so as to be overlooked from adjacent higher ground, suggesting that it was desirable for activities within the ring to be readily viewed (Ward 1988).

Analysis of the monuments in these terms suggests they can be described as *arenas, activity within which was intended to be seen but access to which was controlled.*

Apart from the deposition of bone, the other prevalent practice evident at ring cairns is a charcoal or

'dirty earth' rite, noted as more common than deposition of human bone, and therefore argued to be the more significant activity (Lynch 1984, 26). The importance and deliberation attached to the rite is sometimes demonstrated by deposition of the material in an urn (Griffiths 1960, 321; Hogg 1977, 29; Lynch 1984, 23). At one of the Shaugh Moor ring cairns a number of segmented faience beads and a pot base accompanied charcoal in a pit (Wainwright *et al.* 1979, 15-18). The rite is enigmatic: the origin of the charcoal could be significant, or its importance might lie in its particular chemical characteristics, as an efficient fuel, a purifying agent, or a material which did not readily decay in an age when stone was the only other common incorruptible substance.

Discussion of public ceremony at ring cairns in the context of funerary ritual alone might be an unwarrantable restriction on their role. That they may have been arenas for ceremonies with other motivations draws support, at least in the survey area, from the potential for economic and domestic activity in the same landscape. If the proximity of presumed burial monuments can imply a relationship, so too might proximity to agriculture and settlement. On Mynydd Llangyndeyrn, Rhossili Down and Cefn Bryn remains of early agriculture and settlement appear variously as land allotment boundaries, an enclosure with adjoining plot or paddock, stone clearance piles and 'cooking mounds' alongside streams (Ward 1987 a and b). None of these is dated though they are representative of remains which could be contemporary with the ring cairns, even if the periods of use did not fully coincide, as on Shaugh Moor (Balaam *et al.* 1982, 266-74). In any event, such agricultural and settlement remains argue that these landscapes had the *potential* for such activity early to mid second millennium bc, even if the remains themselves date to different periods (Ward 1985). This potential could have been realized, at various times, in ways not leaving surface-evidence, as illustrated by the discovery beneath a cairn on Cefn Bryn of domestic or economic activity, with Mortlake ware associations dated to the second half of the third millennium bc (Ward, unpublished). The ceremony envisaged within the rings could equally have complemented subsistence and economic activity, and a complete spectrum of social concerns, not only death.

Manipulation of human bone for purposes not primarily connected with burial is unremarkable and has long been recognized as a possibility particularly when interpreting incomplete skeletal remains from

chambered tombs (Piggott 1962, 65-68; Thomas and Whittle 1986). Bronze Age burials beneath or within cairns or tumuli, on the other hand, are usually taken to have an air of final disposal. However, there are later third and early second millennium bc sepulchral mounds whose structure evolved over time, and whose burials may not always have been as irrevocably sealed as they now appear; for example, at one of the Trelystan Barrows, Powys a burial was robbed before the monument realized its final form (Britnell 1982, 189). Timber mortuary structures may have been free-standing for a time before being covered by a mound (Lynch *et al.* 1974; Ashbee 1960, 52-54), and hence their contents accessible. Human remains were apparently on occasion collected over a period before final burial (Wells 1976). Such practices would have made available, 'on demand', the remains of humans who were not recently deceased; there are hints both at Moel Goedog I (Lynch 1984) and GCRC I that bone was in fact imported from other burials.

That the remains of the long-dead were to hand for use, complements the view that the ritual was not always occasioned by immediate death and burial, but that bone was required for a ceremony, the function of which may have been entirely unconcerned with the deceased, whose bone was used, as an individual. Surviving traces of bones so used would tend to have the air of unconventional or 'abnormal' burials. The transference of bone, and indeed deposition of 'dirty earth' and charcoal if its origins lie in occupation contexts rather than cremation pyres (Lynch 1984, 27), can be interpreted in terms which echo those explaining material from Neolithic chambered tombs, as demonstrating and reinforcing social continuity (Thomas and Whittle 1986).

Structure and activity at ring cairns vary geographically (Lynch 1979, 11-17), and, within even a relatively restricted region such as Wales, diversity is apparent which goes beyond differences attributable to individual whim. For example, entrances through rings demonstrably occur frequently in S Wales, but less so in N Wales (Lynch 1972, 64). Activity at the N Wales monuments generally seems to have generated greater tangible evidence in the form of more numerous pits and more prominent use of bone than those on Cefn Bryn, and also further south on Shaugh Moor (Wainwright *et al.* 1979), though even this is not invariable. For example, activity within Cefn Caer Euni II, Gwynedd, was limited to a single pit containing black earth and stone (Lynch 1986, 96-97). For parts of N

Wales, it has been claimed that ring cairns and sepulchral monuments were built away from settled areas (Lynch 1984, 36) in contrast to the more intimate association with economic and domestic activity hinted at in this study. This diversity cautions against adoption of an exclusive explanation within parameters that are too extensive geographically or chronologically. Motivations may have ranged variously through time, and across regions, from primary concern with public ceremonial unconnected with mortuary practice, through funerary rituals independent of burial within the ring, to actual burial at the monument.

Ring cairns are but one example of broadly contemporary monuments to which an interpretation extending beyond the burial of human remains is assigned (Lynch 1972 and 1980), including very obviously different structures such as open stone circles and standing stones. Much work has been carried out recently at standing stones in SW Wales, to which ring cairn excavations can be compared. Aspects of activity at the two types of monument are very similar (Ward 1983; Williams 1986), and although there may be a distributional difference, with standing stones tending towards lowlands (RCAHM 1976a, 122; Roese 1980), this is not a hard and fast distinction (Ward 1983). A possibly more fundamental difference lies in the recognition that some standing stones are only one element in a larger monumental complex, which can include timber structures, possibly walled and roofed (Ward 1983; Williams 1986). An explanation for structural diversity may therefore lie in the varying requirements of dissimilar ceremonies; by way of illustration, those at the standing stone complexes containing timber structures requiring a degree of privacy, as opposed to more public displays at ring cairns. Disparate ceremonies with different structural requirements, could ultimately reflect social distinctions, in the status or ranking of individuals or groups, or the size of groups responsible for and using various monumental forms.

Clearly, schemes of explanation are required which account for the full spectrum of early Bronze Age monuments found in Wales which manifest similar elements of activity. Expansion of the data on these sites is required, for despite widespread occurrence, they are known only through limited work not always of recent date. There has been only limited consideration too of ideas of social structure (eg Burgess 1980, 245-51), and much more thought needs to be given to providing as a backcloth for interpretation, models of social and

economic organization dedicated to the circumstances of the region, reflecting its diverse topography and the influences of the equally diverse neighbouring areas.

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APPENDIX 2

"Land Allotment of Possible Prehistoric Date on Mynydd
Llangyndeyrn, South-east Dyfed"

Anthony Ward

Archaeologia Cambrensis 138 (1989), 46-58

Land Allotment of Possible Prehistoric Date on Mynydd Llangyndeyrn, South-east Dyfed

By ANTHONY H. WARD, M.A.

SUMMARY: Stone walls of possible prehistoric date are described, which seem to partition the landscape. It is argued that prehistoric ritual monuments in the vicinity need not have been constructed and used in isolation from agricultural activity, and that generally the potential for agriculture and associated settlement of landscapes of upland character, superficially used only for ritual purposes, should not be under-estimated.

MYNYDD LLANGYNDEYRN is a Millstone Grit and limestone ridge, 2.4 km long, between the villages of Pontyberem and Llangendeirne, dividing the valleys of the Gwendraeth Fach and Fawr in south-east Dyfed (SN 485 135) (Fig. 1). The topography of the ridge which attains a height of 262 m. O.D., and the range of archaeological remains on it has been described previously (Ward 1976 and 1983; Briggs and Ward 1979). The monuments are on the southern side of the Mountain which is now common land and include possible Neolithic chambered tombs, burial and ceremonial cairns and standing stones of proven or presumed second millennium B.C. date (Fig. 1). Vestiges of stone walling of apparent antiquity have also been recognised since 1976 but were indistinct. The assistance and encouragement of Miss M. Bowen Evans and the late Mr. W. Hill Morris during this period was invaluable. Burning of parts of the common in the spring of 1985 not only removed vegetation cover but also broke up peaty top soil particularly where this formed only a thin horizon over stony features. Much detail including previously unknown lengths of walling was revealed (Fig. 2), allowing something like a system to be described and also consideration of the possible relationship of the walls to the ritual monuments with which they share the landscape.

DESCRIPTION OF THE WALLS

Most of the early walls lie on the open common with only two lengths of possibly ancient walling visible within the present field system to the north (Fig. 2). The soils of the common land overlying the Millstone Grit are humus/iron podzols which are regarded as unsuitable for agriculture with extremely severe limitations which cannot be rectified. The brown earths of the limestone on the northern flank of the ridge, mostly within the current field system, have restricted potential for agriculture with careful management (Clayden and Evans 1974, 92-99; 139).

The walling on the common land

Each length of wall is described as seen and surveyed in the spring of 1985. The extent of the area over which the vegetation was reduced by burning is shown on Fig. 2.

At the west end of the common a 37 m. length of superficially isolated wall was noted at 213 m. O.D. (SN 4795 1265). It ran for 30 m. up a southerly reverse slope

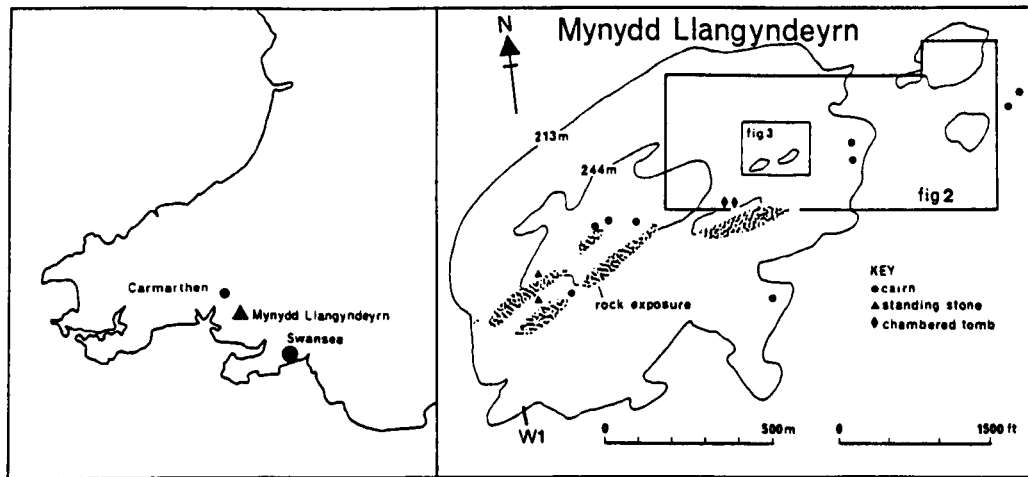


Fig. 1. The location of Mynydd Llangydeyrn, and the monuments on the Mountain. (Contours in metres.)

away from a stream and then crossing a minor crest descended the scarp face for a distance of 7 m. (*W1*, Fig. 1). It was comprised mostly of a band of large stones, around 1 m. wide, without detectable facing. Topping the crest, however, its character changed over a distance of 6.5 m. where it broadened to 2.5 m. wide, comprised of two parallel rows of larger boulders separated by a 'compartment' 1 m. wide. Surface evidence for the wall disappeared abruptly under peaty soil at either end of the visible length.

The next length of walling recognised was 900 m. further along the ridge, to the east of the summit. A wall line at least 42 m. long with a south-south-west to north-north-east alignment emerged from the peat close to the crest at around 244 m. O.D. (SN 4848 1342) (*W2*, Fig. 2). For 22 m. from its southern end, it formed a convex stone band, 1.3 m. wide, clearly delineated although lacking recognisable facing. Arriving at a sharp break in slope the walling deteriorated into little more than a line of boulders visible for 20 m. as it descended steeply before becoming indistinct as it entered an unburnt area. It may continue for a further 40 m. down on to the floor of a hollow at 229 m. O.D., there merging with an exposure of stone blocks on the boundary between the humus/iron podzol and the brown earths at the edge of the modern enclosure system.

Some 150 m. to the east of *W2*, there is a sheltered hollow bounded to the south by a minor Millstone Grit ridge and to the north by a subsidiary limestone ridge which, unlike much of the limestone area of Mynydd Llangydeyrn, has not been brought within the modern field system. The Millstone Grit ridge comprises a low steep south-facing rocky back slope mostly denuded of soil. Its scarp face is either a very steep rocky slope or a low cliff up to 3 m. high, from the foot of which spread areas of scree. To the north is a fairly level terrace up to 50 m. across delineated by a short sharp descent on to the floor of the hollow. Both east and west approaches to the hollow are moderately steep ascents. Four lengths of walling were located within the hollow (*W3*, 4, 5, 6, Figs. 2 and 3).

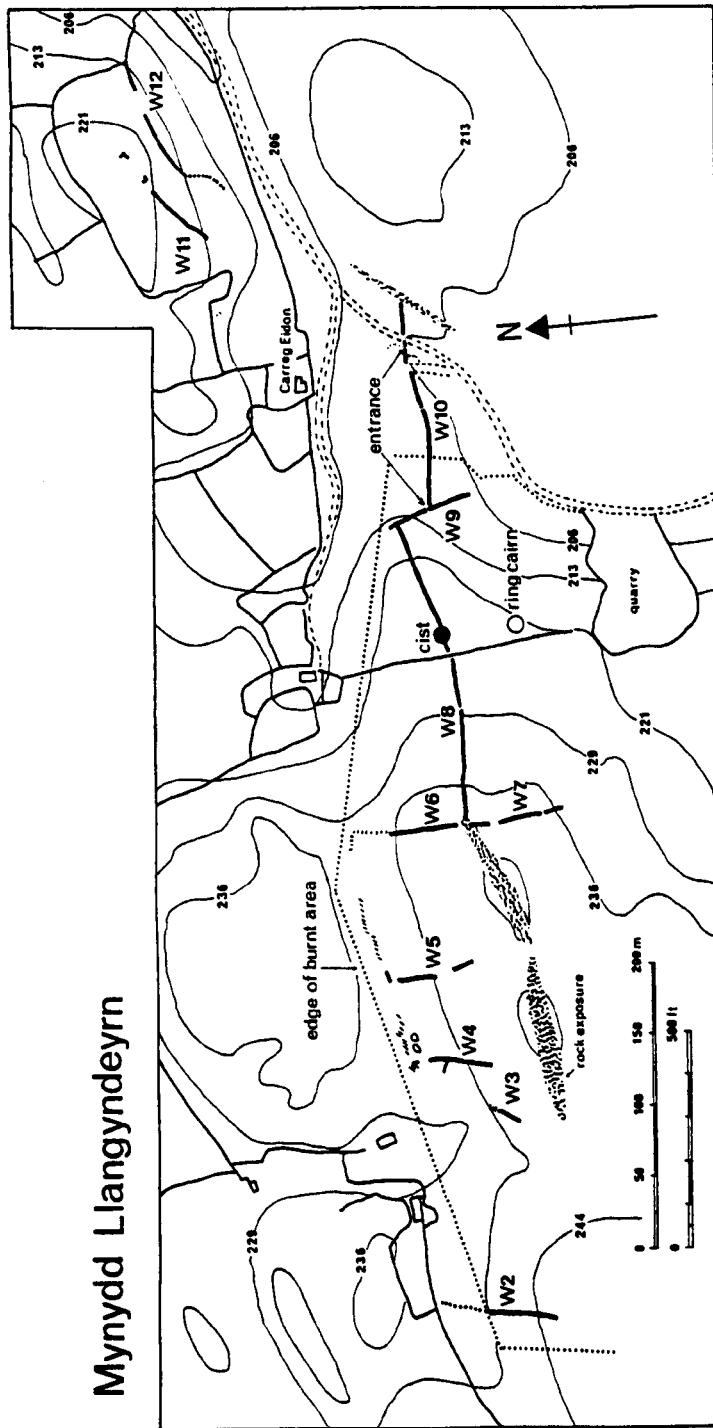


Fig. 2. The boundaries on the eastern part of the Mountain. (Based on the Ordnance Survey map with the permission of the Controller of Her Majesty's Stationery Office. Crown copyright reserved.)

The four wall lines were roughly parallel to each other on a broadly south to north or south-west to north-east alignment. The westernmost wall (*W3*) (SN 4862 1344) was visible for 22.5 m., originating in scree and running on a south-west to north-east line towards the edge of the terrace. The southern 10 m. length was comprised of a 1-1.5 m. wide convex stony band while the rest of the feature appeared as a low vegetation-covered bank in which some stone was visible.

The next wall, 28 m. to the east, maintained a south-west to north-east alignment and commenced in scree to the north of the cliff face (*W4*) (SN 4865 1347). Visible for 46 m., it was comprised mostly of a stony band up to 0.5 m. high and 1.7 m. wide. For 4 m. before it dropped from the terrace on to the floor of the hollow, there were indications of orthostatic construction with one block, 0.5 m. high remaining upright. A stone bank 11 m. long branched off to the west at the foot of the terrace, ending on the curve of a track which has been in use until recently. The main wall line disappeared abruptly on the floor of the hollow, but after a 9 m. gap seemed to be continued for up to 8 m. by a row of stones on the edge of a stony spread. To the east, two shallow hollows were revealed by the burning, one 6 m. by 6.5 m. across, the other 7 m. by 4 m.

Between 60 m. and 70 m. to the east lay a wall which only intermittently was clearly visible in the peaty soil; however, it was traced for a distance of at least 50 m. south to north (*W5*) (SN 4873 1348). Becoming apparent halfway across the terrace, the first 10 m. of the feature was a well-defined bank, 0.3 m. high and 1.3 m. wide, with at one point a fairly distinct face containing a surviving orthostat. Thereafter, for 24 m. the wall was an ephemeral but certain feature, at least where burnt clear of vegetation. The wall line became prominent again once on the floor of the hollow, towards its northern end containing large upright blocks around 0.5 m. high. Five metres north of the point where the wall ceased to be visible, there was a 11 m. long band of stone blocks running to the east and merging into a less well defined stone spread. Immediately to the west of the wall were traces of a hollow track 4 m. wide worn into the scarp face, taking advantage of a series of breaks in slope to cross the southern ridge.

Bounding the eastern side of the hollow was a 78 m. length of walling, originating to the south in scree at the foot of the low cliff close to the end of the minor Millstone Grit ridge (*W6*) (SN 4882 1349). The well-defined convex tumble of stone was 0.3-0.4 m. high and 1.7 m. wide. At one point there appeared to a 'gang joint', with two segments moving around 0.6 m. to meet at right angles. The northern 15 m. of the feature took the form of a slight lynchets.

The apparent northern terminals of the three walls *W4*, *5* and *6* seemd to be linked. The eastward extension from *W5* has been noted. Elsewhere on this line, slight lynchets or stony spreads were visible. As with *W2*, the features within the hollow did not obviously extend on to the brown earths of the limestone which formed the northern flank of the hollow; they were apparently confined to the humus/iron podzol of the Millstone Grit and the cessation coincided with the boundary between the humus/iron podzol and the brown earths.

The eastern end of the minor ridge at 236 m. O.D. (SN 4883 1348), forming the southern side of the hollow, served as the point of origin for two other lengths of wall. One ran south for around 70 m., disappearing beneath peat in places and disturbed by a robbing trench 6.5 m. long (*W7*). It could be traced crossing a minor

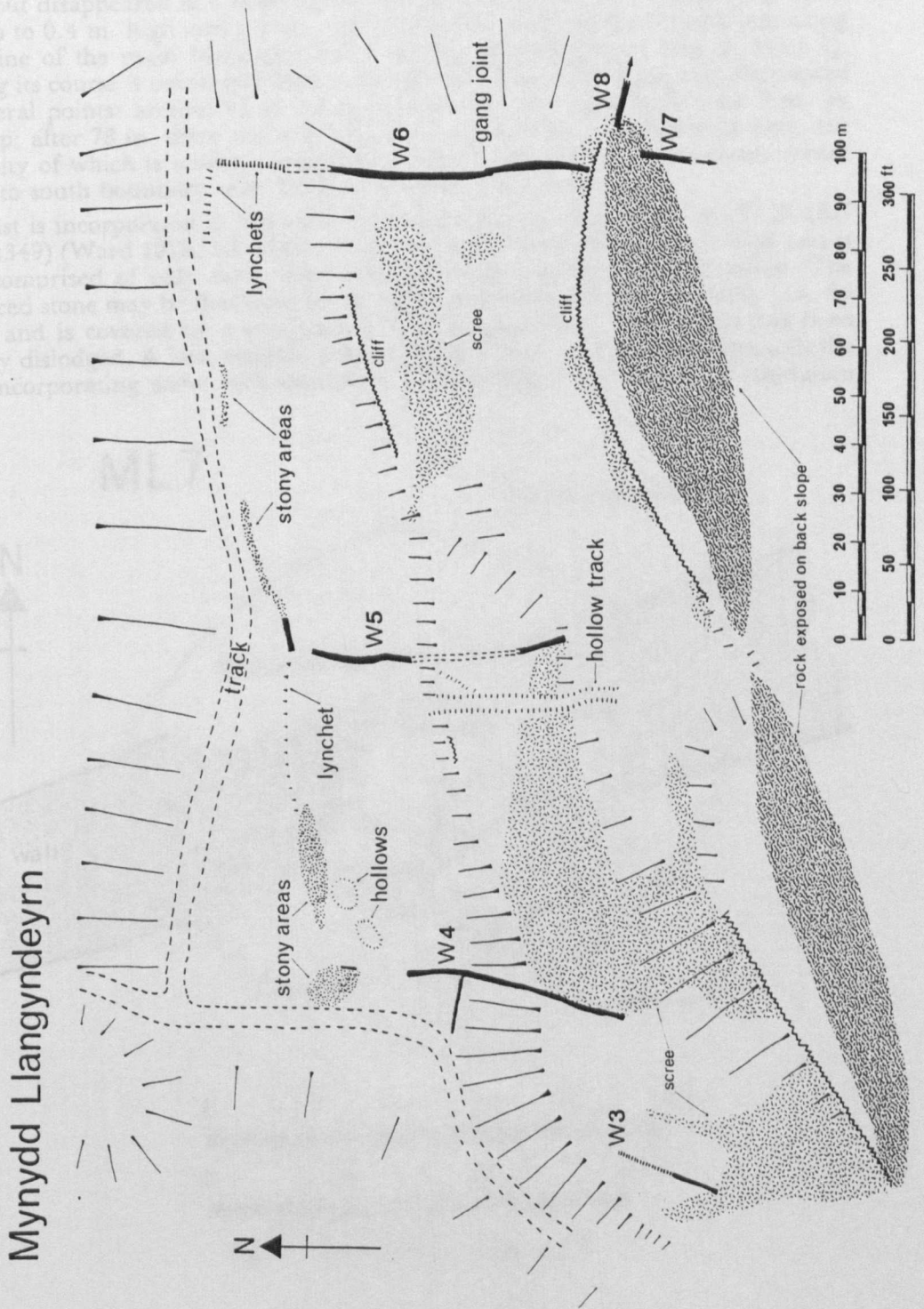


Fig. 3. The hollow containing the enclosures or fields formed by walls 4, 5 and 6.

ridge but disappeared in a small quarry in the back slope of that ridge (Fig. 2). It was up to 0.4 m. high and 1.5 m. wide. The other wall (*W8*) ran eastwards along the spine of the main Millstone Grit ridge for around 220 m. (Fig. 2, Plate I). During its course it descended from *c.* 236 m. to 213 m. O.D. and was interrupted at several points: around 45 m. from its western end it was broken for 3 m. by outcrop; after 78 m. there was a 2.5 m. break in the form of a hollowed path, the antiquity of which is unclear; and after 117 m. it was cut by an obviously recent north to south boundary with flanking ditches, 4 m. wide.

A cist is incorporated in this wall, on a slight crest at around 221 m. O.D. (SN 4896 1349) (Ward 1976, 10, ML7). It is orientated north-east to south-west and is now comprised of only three side slabs, the fourth having been removed. The displaced stone may be that lying to the north. Internally the cist measures 1 m. by 1 m., and is covered by a capstone, 1.7 m. long by 1 m. wide, which has been slightly dislodged. A low, roughly oval cairn up to 5 m. in diameter surrounds the cist, incorporating some rock exposure. The walling when cleared of vegetation

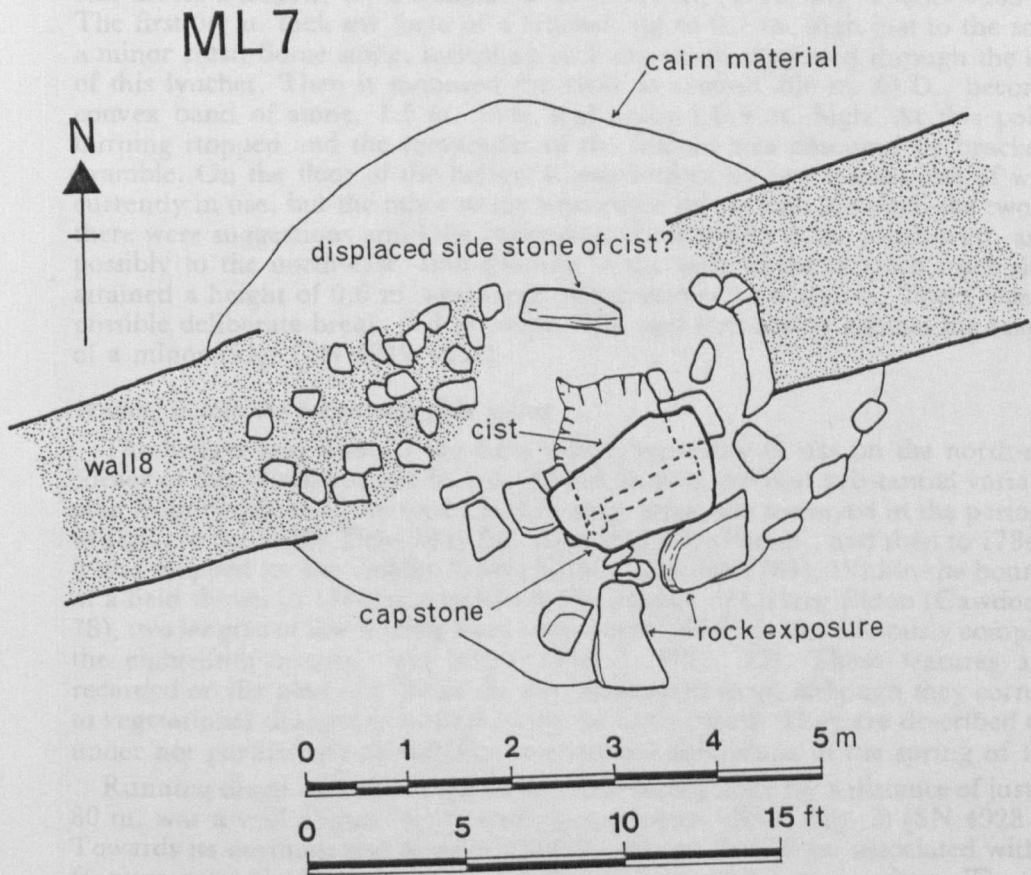


Fig. 4. The cist (ML7) within *wall 8*.

seemed to run up to the edge of the cairn, rather than the cairn having been raised over the walling (Fig. 4, Plate IIa). To the west of the cist the wall was a substantial feature, 1.75 m. wide and up to 0.5 m. high, frequently edged with larger stone blocks. To the east of the cist, the ridge crest falls away steeply and in sections where the wall line is just below the crest, soil has accumulated against it so that it appears as a slight lynchet.

The east end of *W8* at around 213 m. O.D. (SN 4904 1353) abutted a wall aligned north to south, which could be followed for 60 m. along ground falling to the south down to 206 m. O.D. (*W9*) (Fig. 2). Its northern end coincided with a small quarry and a modern track. To the south it vanished in an accumulation of soil towards the foot of the slope. Up to 0.5 m. high and 1.3 m. wide, the wall was comprised of large stone blocks with in places the suggestion of facing. About halfway along the visible line was a break which seemed to be an original feature. A passage 0.8 m. wide was edged with laid stone blocks, with the terminals to either side swollen up to 2 m. in diameter (Plate IIb).

Two metres to the south of the entrance through *W9*, a wall branched off to the east across a hollow, for a distance of over 140 m. (*W10*, Fig. 2) (SN 4905 1351). The first 30 m. took the form of a lynchet, up to 0.7 m. high just to the south of a minor crest. Some stone, including rock exposure, projected through the surface of this lynchet. Then it mounted the crest at around 206 m. O.D., becoming a convex band of stone, 1.5 m. wide and around 0.4 m. high. At this point the burning stopped and the remainder of the feature was obscured by bracken and bramble. On the floor of the hollow it was broken by two tracks, one of which is currently in use, but the other to the west could be ancient. Between the two tracks there were suggestions amid the vegetation of off-shoots to the south-west, and just possibly to the north-east. Immediately to the west of the modern track the wall attained a height of 0.6 m. and large facing-stones were visible. There was also a possible deliberate break, 0.8 m. wide. The wall terminated against the scarp face of a minor ridge (SN 4919 1352).

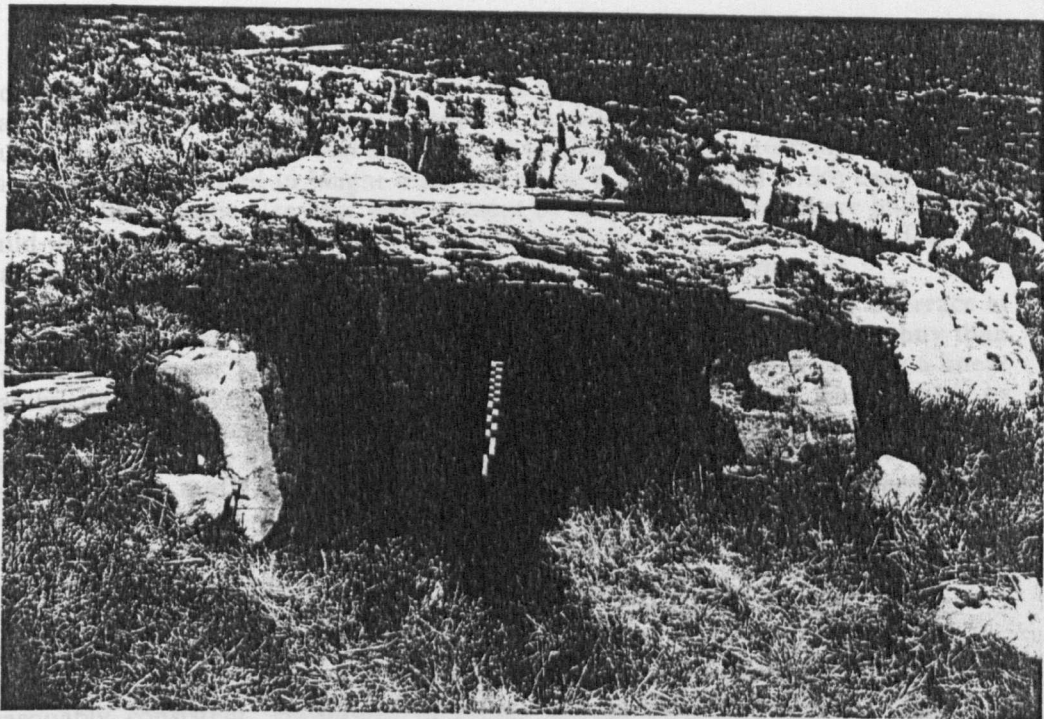
Walling within the present-day field system

The hedges and walls of the field system currently in use on the north-eastern corner of the Mountain can be traced back in time without substantial variation in plan from revisions of the six-inch O.S. map originally surveyed in the period 1877 to 1886, to the 1840s Tithe Map for 'Llangendeirne Parish', and then to 1784 when it was mapped for the Golden Grove Estate (Cawdor 1784). Within the boundaries of a field shown in 1784 as attached to the cottage of Carreg Eidon (Cawdor 1784, 78), two lengths of low walling have been noted which do not obviously complement the eighteenth-century field layout (Fig. 2, *W11*, *12*). These features are not recorded on the plan of 1784 or on any subsequent map, although they correspond to vegetational changes indicated on recent O.S. sheets. They are described as seen under not particularly favourable vegetational conditions in the spring of 1985.

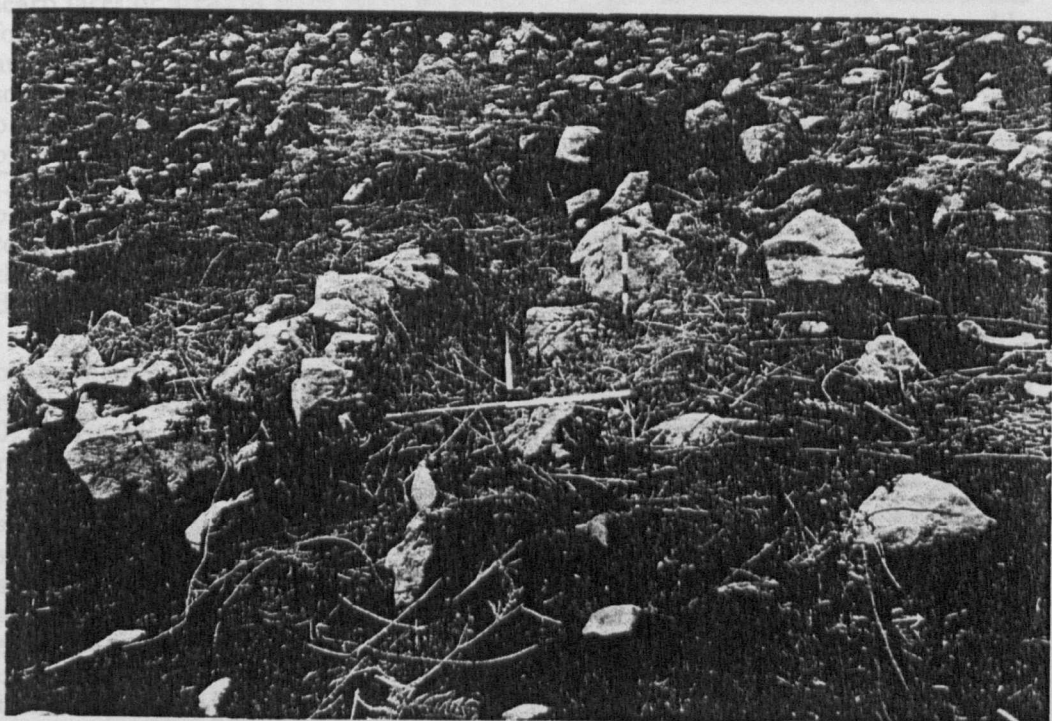
Running diagonally across the steep south-facing slope for a distance of just under 80 m. was a wall aligned south-west to north-east (*W11*, Fig. 2) (SN 4928 1370). Towards its northern end were two breaks of 6 m. and 12 m. associated with stone features extending for distances of between 4 m. and 7 m. up-slope. The precise form of these features was unclear. Both rock outcropping and artificial



Looking east along *wall 8* with the cist (ML7) arrowed.
Scales: horizontal 0.5 m.; vertical 2 m.



(a) The cist (ML7) from the north.
Scales: horizontal 1 m.; vertical 0.3 m.



(b) The entrance in wall 9 from the east.
Scales: horizontal 1 m., vertical 0.5 m.

accumulations are possible explanations. The feature abutting the northern terminal may be a roughly rectangular enclosure or foundation, around 7 m. across. The south-western 50 m. of the wall appeared as a continuous sinuous band of limestone fragments which varied in height from 0.4 m. to 0.9 m. and in width extended up to 0.5 m. Orthostatic elements were present in the wall line, and there had been a build-up of material against sections of the up-slope side of the feature. The wall ceased to be visible to the south-west on the edge of a sharp descent.

To the east of *W11* the slope becomes markedly concave, providing a terrace at between 213 m. and 221 m. O.D., 20-30 m. across, which is much less stony than the rest of the slope. The south-eastern edge of this terrace was bounded by a linear feature, part a convex band of limestone fragments, part lynchet, and towards its south-western end taking on the appearance of stone clearance without deliberate structure (*W12*, Fig. 2) (SN 4930 1367). The lynchet or wall element, which was between 0.8 m. and 1 m. wide and 0.5 m. to 0.7 m. high, could be traced for up to 90 m. west to east, disappearing for around 20 m. of that distance in scrub. It could not be followed to the east beyond the boundary of 1784 into which it merges.

ANALYSIS: CHARACTER AND POSSIBLE DATE

Character

Walls 1 to 10 on the common are broadly comparable in character. Their form is reasonably consistent, comprised of either convex bands of stone in which an orthostat is occasionally visible, or lines of larger stone blocks. Surviving facing to the walls is rarely present. Such lynchets as occur are not very substantial. Rocky scarp faces or areas of scree serve as points of origin and sometimes as connections for lengths of walling. The walls either follow ridge crests or run down-slope roughly at right angles to ridge crests. *Walls 3 to 10* appear to be linked as elements of one scheme of enclosure which can be traced over an area of roughly 9 hectares. Its principal feature is an axis 600 m. long which closely follows the west-to-east descent of the ridge crest, made up both of stretches of rock exposure and lengths of walling. Off-shoots of walling branch out north and south from this axis. *Walls 1 and 2* are of similar character but are isolated, and cannot be shown as necessarily belonging to the same system as those walls further to the east. They indicate, however, at least the possibility of a system or systems of enclosure extending along the ridge for a distance in excess of 1.6 km.

The parallel offshoots, *walls 4, 5 and 6*, apparently combine with the rock exposure of the main axis to the south and various features now intermittently visible to the north, to delineate two discrete enclosures or fields. The western enclosure is around 0.5 hectares, and the eastern one about 0.75 hectares in extent (Fig. 3). Any relationship between these two enclosed areas, and the sunken track which runs parallel to the walls, and the two small hollows is speculative. The latter *might* be sites of structures in this sheltered location. Although parts of the enclosed area are scree-covered, the most sheltered part, the actual floor of the hollow, is relatively stone-free. Stone clearance may explain this, with the spreads of stone which apparently connect the northern ends of the walls constituting the dumps of cleared stone. This would appear to be the only possible example now apparent on the common of *clearance* of stone from a defined area, as opposed to what seems to have been only the *collection* of surface stone elsewhere in order to construct walling.

Only *walls 11 and 12* suggest land allotment on the brown earths of the limestone predating the present-day field system which embraces most of that part of the ridge. Their relationship with the features on the common is inconclusive. They cannot be physically connected with the walling on the common although *W11* in particular is similar in character except that it runs across slope. *W12* is incorporated within a more consistent and substantial lynchet element than any length of walling on the common. Together they define a plot terraced into the slope.

The absence of other potential examples of earlier walls on the brown earths could be explained by the destruction which the construction and use of the current enclosures may have occasioned. However, it has been noted that some lengths of walling run northwards across and up to the edge of the humus/iron podzol, but apparently no further. Hence it is possible that parts of the area now covered by the brown earths were used differently in antiquity compared with adjacent areas over which the humus/iron podzol has formed. An element of uncertainty about this must be admitted in the case of *W2* because of the proximity of the modern field system to its apparent termination which may have obliterated any continuation of the wall on the brown earths. But *walls 4, 5 and 6* appear genuinely to stop close to the edge of the humus/iron podzol, with the features forming the northern side of the fields roughly coinciding with the boundaries between soils, at a point where the brown earths have been spared the consequences of more recent enclosure.

Possible Date

The date of *walls 11 and 12* within the field attached to Carreg Eidon is uncertain for the same reasons as it is not possible to reach a conclusion regarding their connection with the walling on the common. The evidence from maps which has been rehearsed shows that the features have not been recorded as integral to the post-medieval field-system during the last two hundred years. This argues that they predate the present field-system by an unknown period, unless they result from relatively recent improvement within the field which has been too insubstantial to record cartographically.

Turning to the walling on the common, it has been suggested that *walls 3 to 10* represent a single scheme with a principal east-to-west axis. Part of that axis, *W8* appears to take account of the cairn containing the cist (Figs. 2 and 4). This wall, and quite likely the system to which it is integral, will therefore post-date the cist. The size and robust structure of the cist is compatible with Beaker burial traditions which in south-east Dyfed continued into the second millennium B.C. as indicated by the developed southern style Beaker from Cors-y-dre some 8 km. south-east of Mynydd Llangydeyrn (Clarke 1970, No. 1849).

It has been noted that walling on the common often disappears into peaty soil and is only revealed at all in some places after peat cover has been destroyed. Clearly on the common peat was forming after the construction of the walling. Phases of peat formation, the consequence of higher rainfall, have been recognised at several periods both historic and prehistoric (Seddon 1967). On Mynydd Llangydeyrn, it has been demonstrated during excavations at a standing stone that peat was beginning to accumulate at a time about which recognisable activity around the stone ceased (Ward 1983). This occurred some time after 1140 ± 100 bc (Birm 950), a determination obtained for an *earlier* phase of activity at the site. The upland

traditions of ritual and funerary monuments to which the standing stone belongs appear to wane towards the end of the second millennium B.C. and not noticeably to continue into the first millennium B.C. (Burgess 1980, 129-30). The episode of peat formation detected at the standing stone, co-inciding with or quickly following final activity at the monument, might therefore be estimated to have commenced within the centuries either side of 1000 B.C.

A widespread cyclical climatic deterioration occurred during the period from the latter part of the second millennium into the early centuries of the first millennium B.C. (Lamb 1968, 173) which resulted in the onset or recurrence of peat development, the beginnings of which locally in south-east Dyfed have been dated to between 1280 ± 110 bc (Q458) and 1228 ± 100 bc (Q459) at Llanllwch Bog (Thomas 1965). It cannot be demonstrated explicitly that the phase of peat formation around the standing stone initiated the process whereby the walls have become buried elsewhere on the Mountain. However, it is likely that the process extended across the Mountain, given that the suggested date for its occurrence around the stone is compatible with the chronology of a marked cycle of climatic deterioration with consequent widespread episodes of peat accumulation.

By way of summary, only an imprecise and (in the absence of firmer evidence from excavation) necessarily speculative chronology can be proposed. Assuming that *W8* (which is later than the cairn containing the cist) is a primary element in the pattern of walls on the common (which its axial nature suggests), the system should not predate the period of the Beaker tradition. An initial date for the arrival of Beaker influences in south Wales is uncertain, but they may not have been felt until the latter half of the third millennium B.C. and seem to have continued into the early second millennium B.C. These centuries provide a general *post quem* date for the walling. Peat formation on Mynydd Llangyndeyrn around the late second to early first millennium B.C., limiting the agricultural potential of the area and reducing or even removing the impetus to exploit the landscape in the systematic manner the walls seem to indicate, suggests a possible context for the decline and eventual abandonment of the system. The difficulties which environmental changes posed for early farmers, including the abandonment of holdings, have been underlined by a study of the relationship between rural settlement and soils in Caernarvonshire (Johnson 1980-82).

DISCUSSION

Too little of the walling on Mynydd Llangyndeyrn has been exposed for detailed consideration of diagnostic form or likely manner of use. The visible elements may have incorporated or have been extended by hedges, turf or timber structures. Timber fencing has been recorded at Holne Moor and Shaugh Moor on Dartmoor where surveys of very extensive field-systems, supplemented by excavation, have been carried out (Fleming 1978, 1983; Balaam *et al.* 1982). Such features, if present on Mynydd Llangyndeyrn, could completely modify interpretations based on the identified walls, for example, by forming additional sub-divisions, or if predating the walling providing evidence of chronological depth. If the walls are considered as presently visible, there is the impression of a concern with the demarcation of larger areas of land, ancillary to which are the small enclosures recognised in *walls 4, 5 and 6* and possibly the less regularly defined plot created by *walls 11 and 12*. That

the builders intended to parcel the landscape rather than only create plots and paddocks is indicated by the manner in which *W2* and the eastern section of *W8* descend steeply awkward and rocky slopes which in any circumstances would be impossible to exploit directly.

Moderately large areas of landscape brought within linear walling of apparently early date in south Wales have usually been taken as limited to Pembrokeshire (Fowler 1983, 126). Further to the east, cairn fields and more rarely small plots or paddocks associated sometimes with house foundations have been recognised as the common features of early agriculture (RCAM 1976; Briggs 1985). The system on Mynydd Llangyndeyrn, however, is now only one of several examples of enclosure known beyond Pembrokeshire typified by predominantly linear walling running for several hundred metres or more across a landscape. Other examples have been located on the lower slopes of the Black Mountain, east of Ammanford (Leighton *et al.* 1987), on Rhossili Down, Gower (Ward 1987) and on the Brecon Beacons (C. S. Briggs, pers. comm.). The increasing recognition of the survival of these systems of walling suggests that the formal parcelling or allotment of land by artificial boundaries should be accepted as a regular practice of earlier agricultural communities across south Wales.

The early division of land on Mynydd Llangyndeyrn apparently into larger rather than smaller segments could relate to the relative usefulness of the soils on and around the Mountain. It has been noted that the linear boundaries are predominantly on wetter soils, perhaps reflecting differential exploitation of adjacent soil types. Research in Caernarvonshire, where the quantity and quality of earlier agricultural remains have provided an opportunity for detailed study, indicated that fields were carefully located with regard to environment (Johnson 1978 and 1980-82). The study suggested that wetter soils were likely to be enclosed for pasture, with cultivation indicated by lynchets only on better drained land. Following this, the current peaty soils on Mynydd Llangyndeyrn may always have been relatively less well drained, and hence favoured mostly for pastoral use regulated through the enclosure of larger areas. The status within such a scheme of the two small enclosures delineated by *walls 4, 5 and 6* on the edge of the peaty common is ambiguous. Slight lynchets are present towards the lower edges of these fields. These, and other short lengths of low lynchets noted elsewhere on the steeper slopes of the common might indicate arable activity, but are probably sufficiently insubstantial to be explained by natural soil creep, or soil creep prompted or accelerated by the destruction of vegetation through grazing and burning. Possible locations for complementary arable farming include the terrace, defined on its down-slope edge by the fairly regular lynchet *W12* on a south-facing slope covered by well-drained brown earths, and a cairn field known to have existed on Ysguborwen Farm half a kilometre to the south of the Mountain (Ward 1976, 11), on the presumption, of course, that these were contemporary with the linear boundary system.

The suggestion that this land allotment dates to the second or early first millennium B.C. opens the prospect that the ridge could have been used for agricultural and ritual purposes contemporaneously, even if there was not an exact coincidence in the spans of the practices. In any event, even if the boundaries were constructed some time after the funerary traditions on the Mountain had faded, the

fact that the land was exploited agriculturally on a systematic basis at a still far from recent date argues that the area could at least have held potential for peoples of even earlier periods, including those who built the ritual monuments on the ridge.

Where landscapes typical of the uplands containing such monuments are sometimes defined as *ritual*, the reality of that description is usually that evidence for contemporary economic activity is *apparently* absent, rather than that the area can actually be shown not to have been exploited at the same time as the ritual locations were used. A more accurate understanding of the situation might be forthcoming if the potential of the landscape for agriculture at the period of the ritual sites was assessed, using for example evidence for subsequent exploitation (Ward 1985). If it seems any potential existed, it should be recognised that this could have been realised through activity which did not result in durable surface remains. A distinction can be drawn between formal management of a landscape which manifested itself in terms of boundaries, enclosures or cairn fields, and less formal methods, involving some pastoral practices in particular, which did not leave surface traces. Domestic activity is now relatively commonly identified beneath ritual sites (Burgess 1980, 199). How likely is it that this was carried on in an economic vacuum? Increasingly widespread recognition of various types of evidence, either directly indicating or allowing the possibility of early agriculture in landscapes dominated on the surface by ritual remains (and which perhaps only today are perceived as having no or very limited agricultural attractions), has implications for the interpretation both of ancient settlement and subsistence patterns and the social context of the ritual structures themselves.

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APPENDIX 3

"Early Agriculture on Rhossili Down, Gower, West Glamorgan"

Anthony Ward

Bulletin of the Board of Celtic Studies 34 (1987), 220-27

Early Agriculture on Rhossili Down, Gower, West Glamorgan

SUMMARY

A linear wall crossing Rhossili Down, and a possible settlement enclosure with an open-sided annexe are described. These are interpreted as indications of early agriculture, the physical remains of which are becoming more widely known in south-west Wales. Although it is not claimed that these features were contemporary with Neolithic and Bronze Age ceremonial and sepulchral monuments on the ridge, they suggest that the landscape could have held some economic potential for those who constructed the monuments.

INTRODUCTION

Rhossili Down at the western end of the Gower peninsula in South Wales is best known archaeologically for its prehistoric funerary and ceremonial monuments (Fig. 1). There are two Neolithic chambered tombs, the Sweyne's Howes (RCAM 1976 i, 32) and fourteen cairns of presumed Bronze Age date (RCAM 1976 i, 169-82). There is also, however, some evidence for early land division and possible settlement of the Down, presumably associated with its agricultural exploitation. A roughly circular enclosure, with adjacent annexe has been briefly noted previously (RCAM 1976 ii, 707). A linear wall crossing the ridge seems to have been recognised only recently. These features were surveyed in January and March 1986 when covering vegetation was very low, and are described together with the landscape they occupy. Survey at reasonably large scales, and detailed description supplementary to more general recording are important if such still relatively uncommon evidence for early land use in South Wales is to be accurately assessed.

TOPOGRAPHY

Rhossili Down is a 3 kilometre long ridge of Old Red Sandstone, with a north to south orientation. The massif is steep-sided, particularly the coastal western slope, and a narrow undulating summit ridge runs for most of its length at around 160 m OD with rocky eminences up to 193 m OD (Fig. 1). The soils are mainly rocky coarse textured humo-ferric podzols with stagnohumic gley soils in reddish drift deposits on the lower slopes to the east where they merge with soils of the drift mantled lowlands (Wright 1979, 2:3/13). Most of this severely degraded landscape is now heather- or bracken-covered commonland which seems to be used for occasional grazing of small numbers of sheep, horses and heifers.

THE LINEAR WALLING

Description (Fig. 1)

The linear wall is not a prominent feature but has been traced under various seasonal vegetational conditions and also snow cover, for a distance of some 400 m, running roughly west-south-west to east-north-east across the ridge. It comprises a roughly 1.7 m wide band of mostly Old Red Sandstone conglomerate blocks between 0.2 and 0.3 m high. Despite the occasional larger stone at the edge of the band, consistent evidence for facing is now lacking except for a 15 m stretch about half way along its apparent length where larger stone blocks, including a 0.5 m high orthostat, retain the stony bank. Immediately to the west of this seemingly more carefully constructed, or perhaps better-preserved strip, the walling has been broken by a track, use of which has eroded the ground surface. This has produced a vertical section through the wall which shows it to be a rather more substantial feature than suggested by surface observations, some 2 m wide and perhaps 0.4 m high. There are frequent breaks elsewhere along the wall associated with paths and tracks. At one point the wall is staggered by a right-angled off-set of 0.7 m which may be a 'gang-joint'.

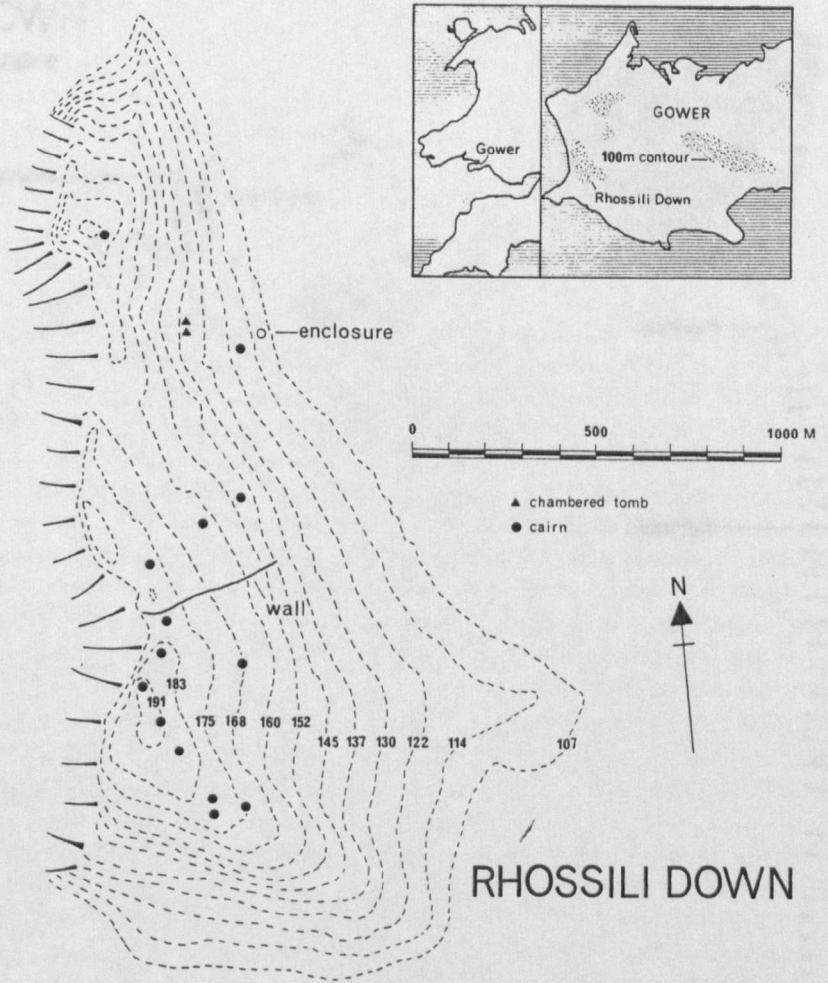
The sinuous course of the wall is best described, and indeed followed, on the ground from west to east. The western terminal appears to coincide with outcrop in a hollow on the steeper western slope of the ridge at around 175 m OD (SS 4200 8905). Below this point the slope becomes impractical on account of the severity of the gradient. The wall ascends over a distance of around 50 m to the crest of the ridge which it crosses before descending a short steep scree covered slope on which it is difficult to detect. On the crest it passes a round cairn some 20 metres to the south (RCAM 1976 i, 173). As the gradient decreases and the stone cover thins on the eastern slope, the line of the wall again becomes rather more evident for about 250 m before once more descending a steeper slope, entering a stony area and finally disappearing in wash material towards the foot of this steeper section at around 145 m OD (SS 4237 8920).

Interpretation

Timber or turf structures may have elaborated or extended the walling. If so it seems likely that the walling presently visible would always have been the principal boundary both on account of its permanent stone construction and well-defined linear axis clearly intended to bisect the ridge. At present the wall appears to stand alone and, on the basis of the superficial remains, seems designed primarily to partition the landscape, cutting off the southern third of the ridge from the northern area.

Unfortunately, the date of the wall is a matter of speculative generalities. Its character, apparent state of dilapidation, and the severely degraded landscape crossed, combine to suggest that the feature is unlikely to have been constructed in the relatively recent past. There is a temptation to assert a prehistoric date for the wall based on comparison with other linear walling in the south west of Britain which sometimes is demonstrated, but often only inferred to belong to prehistoric times. The Rhossili wall, however, could have been laid out at any time during the later prehistoric or early historic periods. Indeed its topographical setting resembles that of the cross-ridge dykes barring ridge-way routes across the Glamorgan uplands for which

RHOSSILI DOWN
Enclosure and Area



Linear walling

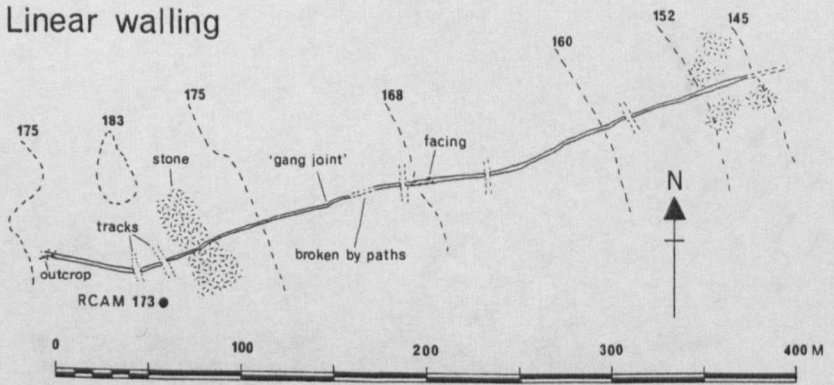


Fig. 1. Linear walling on Rhossili Down, Gower (contours in metres).

RHOSSILI DOWN

Enclosure and Annexe

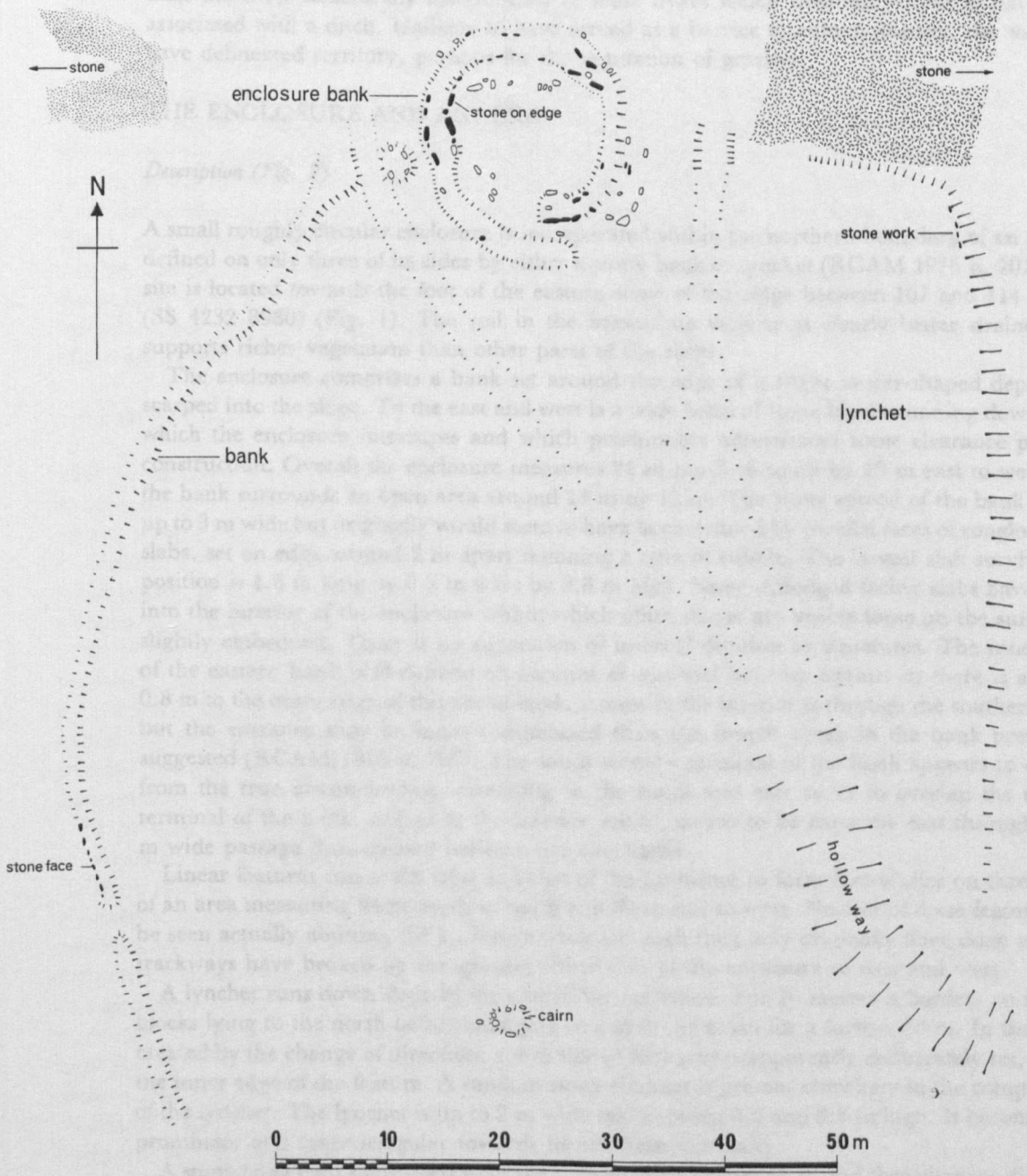


Fig. 2. Enclosure and Annexe on Rhossili Down.

a late First Millennium AD date has been proposed (RCAM 1976 iii, 5-6). Rhossili Down hardly seems to constitute a long distance route, and the wall appears a far slighter structure than the most structurally insignificant of these dykes which invariably seem to have been associated with a ditch. Unlikely to have served as a barrier to human passage, the wall may have delineated territory, perhaps for the regulation of grazing.

THE ENCLOSURE AND ANNEXE

Description (Fig. 2)

A small roughly circular enclosure is incorporated within the northern boundary of an annexe defined on only three of its sides by either a stony bank or lynchet (RCAM 1976 ii, 707). The site is located towards the foot of the eastern slope of the ridge between 107 and 114 m OD (SS 4232 8980) (Fig. 1). The soil in the immediate vicinity is clearly better drained and supports richer vegetation than other parts of the ridge.

The enclosure comprises a bank set around the edge of a slight saucer-shaped depression scaped into the slope. To the east and west is a wide band of stone blocks running down slope which the enclosure interrupts and which presumably necessitated some clearance prior to construction. Overall the enclosure measures 22 m north to south by 19 m east to west, and the bank surrounds an open area around 13 m by 13 m. The stony spread of the bank is now up to 3 m wide but originally would seem to have been defined by parallel faces of conglomerate slabs, set on edge around 2 m apart retaining a core of rubble. The largest slab surviving in position is 1.6 m long by 0.5 m wide by 0.8 m high. Some dislodged facing slabs have fallen into the interior of the enclosure within which other stones are visible loose on the surface or slightly embedded. There is no suggestion of internal division or structures. The inner edge of the eastern bank is ill-defined on account of material built up against it; there is a fall of 0.8 m to the outer edge of this arc of bank. Access to the interior is through the southern bank but the entrance may be more complicated than the simple break in the bank previously suggested (RCAM 1976 ii, 707). The south-western terminal of the bank appears to deviate from the true circumference, extending to the south and east so as to overlap the eastern terminal of the bank. Access to the interior would appear to be from the east through the 1 m wide passage thus created between the two banks.

Linear features run south west and east of the enclosure to form boundaries on three sides of an area measuring 84 m north to south and 80 m east to west. Neither of these features can be seen actually abutting the enclosure bank although they may originally have done so since trackways have broken up the ground either side of the enclosure to east and west.

A lynchet runs down slope to the east of the enclosure. For 20 metres it borders an area of blocks lying to the north before changing course to the south for a further 60 m. In the angle created by the change of direction, a 4 m line of four stones apparently deliberately set, marks the inner edge of the feature. A random stony element is present elsewhere in the composition of the lynchet. The lynchet is up to 2 m wide and between 0.5 and 0.8 m high. It becomes less prominent and more irregular towards its southern extremity.

A stony bank runs south-west from the enclosure for around 60 m and then changes direction to the south-east for a further 36 m before simply fading away. The bank comprises a stony

band 2 m wide and up 0.4-0.5 m high on its inner edge. The height of the outer side has been reduced by the accumulation of soil creeping down slope. Just after the bank swings to the south-east, a 7 m length of stones, seemingly deliberately positioned, indicates a stretch of facing to the outer edge. The southern end of the facing coincides with a break in the bank of uncertain antiquity.

For a distance of around 70 m between the southern terminals of the lynchet and the bank there is no surface indication of a linear feature which might complete the southern edge of the enclosure. On the line between the terminals is a sub-rectangular cairn 3.6 m long by 2.5 m wide by 0.5 m high which is edged with larger blocks of conglomerate. The area within the bank and lynchet amounts to between 0.5 and 0.6 hectares and slopes gently from west to east. The ground within the annexe seems to contain considerably less surface stone than the hillside outside. Such surface stone as there is within the interior becomes more concentrated towards the periphery, along the inner edges of the bank and lynchet. A hollow-way enters the area from the south east but quickly fades into an ordinary track which divides to pass either side of the enclosure.

Interpretation

This site along with two others at the western end of the Gower peninsula has been described as resembling a cashel (RCAM 1976 ii, 16; nos 705-706). The classification is based on the results of excavations on Burry Holms island lying off the end of the peninsula which produced evidence in an early phase for a boat-shaped, earthen embanked enclosure revetted by very small stones, at the centre of which a rectangular setting of four corner posts was noted and claimed as an early church (RCAM 1976 ii, no 705; iii, no 821). Such a specific attribution of the Rhossili Down enclosure is at least premature in the absence of excavation, and perhaps unfounded given that as far as can be judged from the brief published accounts of the excavation similarities in structure and shape are not very close. Now the full extent of the annexe to the south of the Rhossili enclosure is recognised, the site can be regarded as an element in a spectrum of stone walled enclosures, often associated with apparently open-sided annexes in the South Wales uplands (RCAM 1976 ii, 72-74; nos. 711-716; Briggs 1985).

Many such enclosures contain or are conjoined with stone foundations, usually under 6 m in diameter which are interpreted as the remains of houses, or at least roofed structures (RCAM 1976 ii, 73). The 22 m diameter Rhossili enclosure is perhaps unlikely to have been a roofed structure itself but may have contained such a structure, perhaps of timber. If the entrance arrangements actually took the form of those suggested by the survey, their narrow, restrictive character would impede the entry of stock, and favour explanation of the enclosure as a settlement feature, rather than, for example, an animal pen. The annexe if originally truly open-sided, would have better served as a cultivation plot than a paddock, although of course animals which were either tethered or contained within internal pens could have grazed the area. Some support is lent to the view that the area was cultivated on occasions by the moderately substantial lynchet, with the stony element in the lynchet and up-slope stony bank being initially the product of the clearance of the plot of stone. As with the linear boundary, the dating of the enclosure and annexe in the present state of knowledge could fall any time within the later prehistoric or early historic period.

COMMENT

The primary purpose of the survey was to record fully examples of sites only rarely noted in south-west Wales. Many aspects of the interpretations offered are predictably inconclusive. However, the division of the landscape by the linear wall, and the possible settlement enclosure with annexe do seem to reflect some agriculture exploitation of Rhossili Down at an early date. The walling may indicate pastoral activities with cultivation at the plot created by the annexe. The survey is a contribution to a patchwork of evidence for apparently early, but regrettably as yet mostly undated, agricultural activity which is being found, usually on unimproved land in south-west Wales (Murphy 1985, Ward forthcoming a and b). Only cairn fields on Cefn Bryn (RCAM 1975 i, nos 485 & 500) seem to survive as possible direct evidence for the early practice of agriculture elsewhere on Gower; other examples of linear walling or possible undefended settlements with defined plots have yet to be found.

The walling and enclosure are not necessarily contemporary. Although a tentative association between the cross ridge type of boundary and adjacent small enclosures has been noted (RCAM 1976 iii, 6), none of the enclosures in question resembles the Rhossili example which also is located rather further away from the wall than are the enclosures from the dykes. Again, analogy with the dykes is not immediately convincing. The relative chronological relationship of the presumed agricultural features to the sepulchral monuments on the Down is also unknown although it would be surprising if they transpired to be earlier. Direct evidence for the exploitation of the area at a still relatively early date does suggest that the ridge could at least have held some economic potential for those who built the ritual monuments.

These cannot be assumed to have been constructed and used in physical isolation from economic and domestic activity. This point has been made in respect of other groups of Neolithic and Bronze Age ritual sites in the region which occupy currently degraded landscapes with at best only limited attractions for the present day farmer (Ward 1985, forthcoming b). To some extent this has been confirmed by the discovery of a domestic site associated with late Neolithic Peterborough ware at one of these locations, Cefn Bryn, Gower.

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APPENDIX 4

"Cairns and 'Cairn Fields'; Evidence of Early Agriculture on Cefn
Bryn, Gower, West Glamorgan"

Anthony Ward

Landscape Histor, 11 (1989), 5-18

Cairns and 'cairn fields'; evidence of early agriculture on Cefn Bryn, Gower, West Glamorgan

Anthony H. Ward

SUMMARY

Perhaps only fifteen out of around 230 cairns on Cefn Bryn are likely ritual monuments of presumed Bronze Age date. The remainder are interpreted as stone clearance piles which cluster on better drained soils with greatest agricultural potential, though some uncertainty in attribution is inevitable. While a wide dating range is possible for the clearance, it may at least partly have coincided with the construction of the ritual cairns. There is no direct information on the nature of past agriculture and cultivation seems as likely as grazing. Agricultural activity may relate to settlement on immediately adjacent lower ground.

INTRODUCTION

... 'cairn' is ... an umbrella term for what is superficially the slightest and least impressive of Highland Zone field monuments, which nevertheless occurs in its thousands and is central to a consideration of settlement studies generally and early agriculture specifically (Fowler 1983, pp. 146-7).

This paper assesses evidence for early agriculture in the form of cairns on Cefn Bryn on the Gower Peninsula, West Glamorgan (Fig. 1), and discusses the nature of early agriculture and its relationship to ritual and settlement in the local landscape.

Cefn Bryn is a 6-kilometre-long ridge of Devonian sandstone and conglomerate, its crest at a fairly constant 167 metres O.D. peaking to 186 metres (Fig. 1). It is now mostly common land offering rough grazing with limited post-medieval enclosure on lower slopes. No boundaries are noted on the common except for two short lengths at the south foot of the ridge: an earth and stone bank orientated on the angle of post-medieval enclosure contains two recesses which possibly are shooting butts; and a row of stone blocks parallel to a hollow-way leading to a quarry. Their character is unlike that of early land division elsewhere in the area (Ward 1987a; 1989) and they are probably relatively recent.

There is limited documentary and archaeological evidence for exploitation of the common in the late eighteenth and early nineteenth centuries A.D., with sheep-grazing an important activity (Ward 1985).

Cefn Bryn has long attracted interest through 'Arthur's Stone', a Neolithic chambered tomb which does not readily fit conventional typologies (RCAHM 1976a, no. 33) (Fig. 1). Cairns around the tomb were mapped in the nineteenth century and two dug without result (Wilkinson 1870, pp. 23-39). Another chambered structure, near Nicholaston Hall, was excavated in 1939 (Williams 1940; RCAHM 1976a, no. 34) (Fig. 1). The 37.2-metre-long mound is made of stone which has been exposed to heat and is sited by a minor water source on a foot slope. Composition and location are similar to 'burnt' or 'cooking' mounds on Cefn Bryn (Fig. 1). This, together with the cist-like dimensions of the central stone structure to which there was no apparent access, complicates its interpretation as a chambered tomb. There is also possibly more than one phase of construction since a black soil band running consistently through the mound is absent over the 'chamber' while overlying stony material apparently remains undisturbed, suggesting that the 'chamber' may have been a later insertion sealed by a capping of stone. Building on work by Rutter (1948, pp. 53, 55-6), RCAHM (Wales) (1976a) list 33 'round cairns' deemed Bronze Age ritual monuments (RCAHM nos 198-230); two groups of small cairns, one with 38 cairns thought to be 'probably sepulchral' in character (RCAHM no. 485); the other with 12 cairns thought to be 'possibly sepulchral' (RCAHM no. 500); and 3 mounds of burnt stone (RCAHM nos 588-90).

Incidental to recent excavations (Ward 1987b; 1988), it was noted that supposedly isolated cairns adjudged Bronze Age ritual sites in the *Inventory* (1976a) were only elements of previously unrecognised clusters of small cairns which could be added to the two known groups of small cairns, which themselves could be doubled in number. Although functional ambiguities remain (Fowler 1983, pp. 145-50), such groups of small cairns in

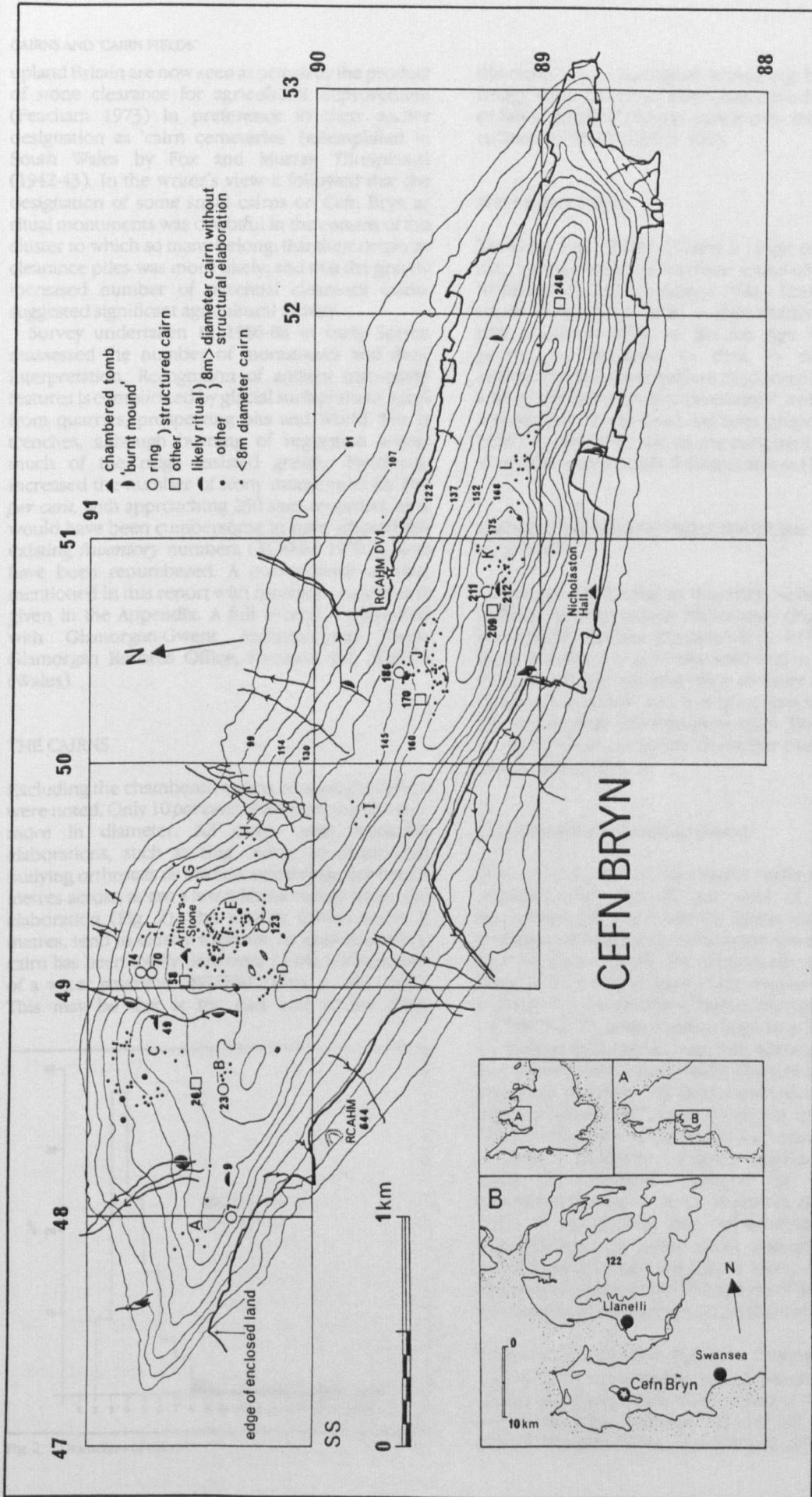


Fig. 1. Location of Cefn Bryn and distribution of chambered tombs, cairns and mounds of burnt stone (contours in metres).

upland Britain are now seen as primarily the product of stone clearance for agricultural improvement (Feacham 1973) in preference to their earlier designation as 'cairn cemeteries' (exemplified in South Wales by Fox and Murray Threipland) (1942-43). In the writer's view it followed that the designation of some small cairns on Cefn Bryn as ritual monuments was doubtful in the context of the cluster to which so many belong; that their origin as clearance piles was more likely; and that the greatly increased number of potential clearance cairns suggested significant agricultural activity.

Survey undertaken in 1986-88 in early Spring reassessed the number of monuments and their interpretation. Recognition of ancient man-made features is complicated by glacial surface stone, spoil from quarries, prospecting pits and World War II trenches, although burning of vegetation across much of the ridge assisted greatly. Fieldwork increased the number of stony monuments by 180 *per cent*, with approaching 250 sites recorded. As it would have been cumbersome to have adapted the existing *Inventory* numbers (RCAHM 1976a), sites have been renumbered. A concordance of sites mentioned in this report with *Inventory* numbers is given in the Appendix. A full record is deposited with Glamorgan-Gwent Archaeological Trust, Glamorgan Records Office, Swansea and RCAHM (Wales).

THE CAIRNS

Excluding the chambered tombs, around 230 cairns were noted. Only 10 *per cent* of these are 8 metres or more in diameter. All cairns with structural elaborations, such as ring cairns, or those with outlying orthostats or internal stone rings, are over 8 metres across, as are a few without visible structural elaboration (Fig. 2). The smaller cairns, under 8 metres, tend to cluster together. At least one major cairn has been totally destroyed by the construction of a water reservoir (RCAHM 1976a, p. 104, xxiv). This may be that at the east end of the ridge

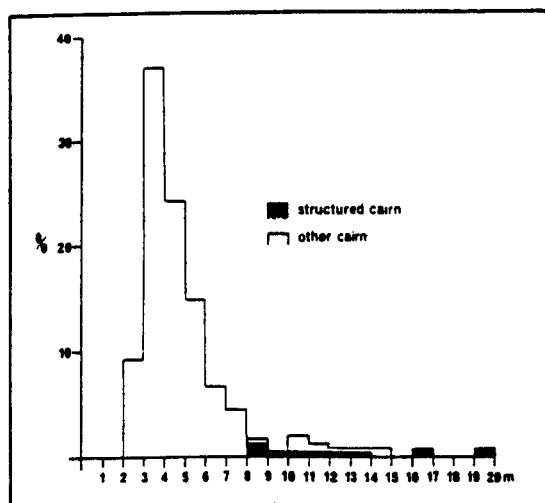


Fig. 2. Diameters of cairns.

illustrated in a Geological Survey log book (C. S. Briggs, pers. comm.). Others may have disappeared or been modified through historically attested stone collection (Ward 1985, p. 415).

STRUCTURED CAIRNS

Twelve cairns (Table 1) have a range of structural elaborations which echo those found elsewhere in Wales (Lynch 1972; Leighton 1984). They are likely ritual monuments with a sepulchral/ceremonial role, conventionally of Bronze Age attribution, proven or assumed to date to the second millennium b.c. Over half are ring cairns for which a role as arenas for public ceremonial, rather than as repositories for the dead, has been proposed (Ward 1988). Usually they are on the periphery of clusters of smaller cairns under 8 metres across (Fig. 1).

LARGER CAIRNS WITHOUT VISIBLE STRUCTURAL ELABORATION

Cairns over 8 metres in diameter without surface indications of structural elaboration (Fig. 2) divide into roughly circular monuments (9, 49 & 212), and those which are oval to extended oval in shape with their length approaching twice or more their width (Table 2). A couple are low stony spreads (81 and 185) rather than elevated stony piles. They are sited within or close to clusters of smaller cairns under 8 metres across (Fig. 1).

CLUSTERS MOSTLY OF SMALLER CAIRNS

Over two hundred smaller cairns under 8 metres in diameter make up 90 *per cent* of the stony monuments (Fig. 2). They are mostly round to oval in shape, a few tending towards the sub-rectangular (e.g. 42, Figs 4 & 5); are occasionally edged with larger stones which never form regular kerbs (e.g. 146, Figs 4 & 6); and some have convex profiles (e.g. 14, Figs 4 & 5), others flattish tops (e.g. 39, Figs 4 & 5). They usually cluster together, although number and density vary considerably. Clusters are often in proximity to structured cairns, and can incorporate larger unstructured cairns in excess of 8 metres. Clusters occupy areas from 1 to 11 hectares, though in several instances relatively scattered smaller cairns are deemed 'clusters' for descriptive convenience, (Fig. 1, A, G, H and I), not because there is necessarily any relationship in their accumulation. In these cases estimates of the measurement of land associated with the cairns are omitted. In total around 35 hectares of the common are associated with groups of smaller cairns.

Cluster A (SS 479 905) (Fig. 1) — 7 cairns, from 4 to 7 m in diameter averaging 5 m across, are dispersed on the crest and north slope towards the western end of the ridge between 125 and 137 m O.D. and include RCAHM 1976a, nos 198 and 200. Those on

the north slope are each sited on a small terrace. Structured cairn 7 (Table 1) and large unstructured cairn 9 (Table 2) lie 100 m south of the cluster (Fig. 1).

Cluster B (SS 486 904) (Fig. 1) — 4 cairns, 3.5 to 5 m in diameter averaging 4.5 m across, are sited over 1 hectare on a terrace at 145 m O.D., east of structured cairn (23) including RCAHM 1976a, nos 203, 204 and 205. Structured cairn 26 (Table 1) is equidistant between clusters B and C (Fig. 1).

Cluster C (SS 486 908) (Figs 1 & 5) — 33 cairns, including the 12 of RCAHM 1976a, no. 500 and the 8 of Rutter's T3 (1948, p. 55), are sited across about 11 hectares of the north brow and slope between 135 and 110 m O.D. Concentrations of cairns occur within the general area covered by the group, those on the north slope on terraces. Cairns between numbers 36 and 41 are laid out approximately at right-angles. Cairn diameters range from 2.4 to 15 m with an average of 5.3 m. Four unstructured cairns in excess of 8 m across are present: extended oval forms (12

TABLE 1
Structured cairns (measurements refer in order to N-S and E-W alignments and then height)

Cairn No.	Grid Ref(SS)	Brief Description	References
7	4799 9037	10 x 11.5 x 0.4 m ring cairn on S slope at 140 m O.D. Fig. 1.	RCAHM 1976a, no. 199; Ward 1988
23	4857 9039	14 m diameter ring cairn, around 0.4 m high with S half eroded by a track; on terrace N of crest at 145 m O.D. Fig. 1.	RCAHM 1976a, no. 202; Ward 1988.
26	4858 9050	7 x 9 x 0.4 m cairn, with central disturbance at 137 m on level ground; 4 stones are set beyond the edge of the cairn, one roughly at each of the cardinal points; 3 of these stones are between 0.3 and 0.4 m high, and the N stone is 0.95 m high. Figs 1 & 3.	
58	4902 9055	Great Carn, a 20 x 20 x 0.7 m cairn found on excavation to incorporate a 13 m diameter stone ring at the centre of which was a grave pit containing the remains of an inhumation. Figs 1 & 6.	RCAHM 1976a, no. 207; Wilkinson 1870, 26; Rutter 1948, 55, T1; Ward 1987b.
70	4907 9072	GCRC I, a 10.4 x 9 x 0.5 m ring cairn, with two opposed entrances orientated N and S, within the central area of which was found on excavation a pit containing a minute quantity of bone and charcoal, radiocarbon dated to 3415 ± 70 B.P. (1465 ± 70 b.c.) (Birm 1150); on N slope at 130 m O.D. Figs. 1 & 3.	Wilkinson 1870, N on map facing 23, & 28; Ward 1988.
74	4908 9075	GCRC II, a 10.8 x 10.7 x 0.6 m ring cairn, with a S facing entrance and an inner retaining kerb against which was a pit containing earth and charcoal, radiocarbon dated to 3510 ± 60 B.P. (1560 ± 60 b.c.) (Birm 1179); on N slope at 122 m O.D. Fig. 1.	Wilkinson 1870, O on map facing 23, & 28; Ward 1988.
123	4927 9020	20 x 21 x 0.4 m ring cairn with two opposed NW and SE orientated entrances, on level ground at 150 m O.D. Figs 1 & 6.	RCAHM 1976a, no. 209; Wilkinson 1870, L on map facing 23, & 27; Ward 1988.
170	5028 8952	11.5 x 17 x 0.4 m cairn which is much disturbed by a SW-NE trench; 3 large displaced boulders in a hollow at its E end, between 1.5 and 1.8 m long, could be elements of kerb, cist or chamber; on terrace in N slope at 160 m O.D. Figs 3 & 7j.	RCAHM 1976a, no. 212 which gives inaccurate grid ref.
186	5039 8962	16 x 16 x 0.3 m ring cairn with W facing entrance and opposed E entrance on terrace in N slope at 140 m O.D. Figs 1 & 7j.	RCAHM 1976a, no. 215 which gives inaccurate grid ref; Ward 1988.
209	5068 8920	7.6 x 8 x 0.4 m cairn with disturbed central area, and spoil to NE and SE; 5.4 m to SW is a 0.8 x 0.65 m high conglomerate slab on a SW-NE alignment; on terrace in S slope. Figs 1 & 3.	
211	5076 8921	8 x 8 x 0.4 m ring cairn with a possible break in WNW arc; in saddle on crest at 175 m O.D. Figs 1 & 7k.	RCAHM 1976a no. 221; Ward 1988.
248	5205 8889	13.4 x 14 x 0.4 m cairn, in SE quarter of which are 2 arcs of stone 1.5-2 m apart, some of which are set on edge; there has been disturbance of the cairn and it is unclear if these are exposed internal features or part of the original outward form. Figs 1 & 3.	RCAHM 1976a no. 230; Rutter 1948, 56, T13.

and 17), an oval cairn (32), and a round cairn (49) on the eastern edge of the group (Table 2).

Cluster D (SS 490 902) (Figs 1 & 7) — 11 cairns, including RCAHM 1976a, no. 208, roughly in a right-angled setting, are located at around 152 m O.D. on about 1 hectare of ground sloping gently northwards from the crest. They are between 2.3 and 7.5 m across with an average diameter of 4.5 m. Some 340 m south-eastwards along the ridge crest lies an isolated cairn, 3.9 m across on a south-facing terrace at around 160 m O.D. (Fig. 1).

Cluster E (SS 492 904) (Figs 1 & 6) — 71 cairns are located on about 9 hectares of land on a slight eminence around 152 m O.D. between the crest and north brow of the ridge, including those noted by Wilkinson (1870), RCAHM 1976a, no. 485 and Rutter (1948, p. 55, T2). Wilkinson illustrated more cairns to the east of the easternmost track than can now be found, unless he mistook humus-covered boulders for cairns. Three extended-oval stone piles from 10 to 26 m across (81, 94 and 147, Table 2) lie amongst the smaller cairns, the dimensions of which

range from 2 to 7 m with an average of 4.5 m. One enigmatic structure amongst this cluster, an oval earth and stone mound within a circular trench (144), may be unconnected with the cairns. The chambered tomb, Arthur's Stone, and structured cairn 58 lie to the north-west and structured cairn 123 to the south (Table 1).

Cluster F (SS 4924 9065) (Fig. 1) — 6 cairns lie over around 1.25 hectares of the north slope between 137 m and 110 m O.D. in a roughly right-angled setting. From 3 to 6 m across, they average 4.7 m in diameter.

Cluster G (SS 4945 9055) (Fig. 1) — 5 cairns are dispersed over the north-north-eastern slope between 137 m and 107 m O.D. From 3.8 to 7.5 m across, their mean diameter is 4.9 m.

Cluster H (SS 4965 9025) (Fig. 1) — 3 cairns are scattered on the north-eastern slope between 145 m and 122 m O.D., the two most southerly sited on terraces. From 4 to 7 m across, their average diameter is 5.2 m.

TABLE 2

Cairns over 8 metres in diameter without visible structural elaboration (measurements refer in order to N-S and E-W alignments and then height)

Cairn			References
No.	Grid Ref(SS)	Brief Description	
9	4816 9037	15 x 15 x 0.3 m round cairn on crest at 140 m O.D. It has been disturbed, comprises a ragged rim around a stony platform, and is unlikely to be a ring cairn as has been claimed, Fig. 1.	RCAHM 1976a, no. 201; Rutter 1948, 56, T16; Ward 1988.
12	4843 9084	15 x 8 x 0.7 m oval cairn, disturbed to NE, on NW slope at 110 m O.D. Figs 4 & 5.	RCAHM 1976a, no. 500i.
17	4852 9084	11.6 x 6.5 x 1 m oval cairn on steep N slope at 114 m O.D. Fig. 5.	RCAHM 1976a, no. 500ii.
32	4861 9075	10 x 7.5 x 0.5 m oval cairn with central disturbance on gentle NW slope at 125 m O.D. Fig. 5.	RCAHM 1976a, no. 500x.
49	4884 9070	13.5 x 13.5 x 0.3 m round cairn at 130 m O.D. on N brow of ridge; it has been badly disturbed, and comprising a ragged rim around a stony base is unlikely to be a ring cairn as previously claimed. Figs 4 & 5.	RCAHM 1976a, no. 206. Wilkinson 1870, M on map facing 23; Rutter 1948, 55, T4; Ward 1988.
81	4913 9044	26 x 6 x 0.25 m oval cairn spread, partly exposed by track, containing two concentrations of stone, on SW slope at 150 m O.D. Fig. 6.	RCAHM 1976a, no. 485.
94	4920 9030	10.2 x 4 x 0.6 m oval cairn on SW slope at 152 m O.D. Figs 4 & 6.	RCAHM 1976a, no. 485xxx; Wilkinson 1870, K on map facing 23, & 27.
147	4934 9033	10 x 5 x 0.6 m, oval cairn on minor summit at 155 m O.D. Fig. 6.	RCAHM 1976a, no. 485xxxviii.
185	5039 8958	11 x 7 x 0.1 m, crescent-shaped stony spread on terrace in N slope at 150 m, O.D. which may in part be a natural accumulation artificially enhanced. Fig. 7j.	
212	5077 8920	13.5 x 14 x 0.3 m, round cairn which has been much disturbed; in saddle on crest at 175 m, O.D. Fig. 7k.	RCAHM 1976a, no. 220.
230	5109 8909	10 x 8 x 0.4 m, oval cairn with loose stony surface on SE at 175 m, O.D. Figs 4 & 8.	RCAHM 1976a, no. 223.

Cluster I (SS 4980 8970) (Fig. 1) — 4 dispersed cairns, from 5 to 7 m across with an average diameter of 6.25 m, lie on a terrace north of the ridge crest. The three to the west include Rutter's T6 and 7 (1948, p. 56), although his numbering cannot be correlated with individual cairns. The eastern cairn is identified with RCAHM 1976a, no. 211. Two cairns, 3.9 and 4.7 m across respectively, lie 10 m apart 150 m to the south, over the ridge crest on a terrace at 168 m O.D.

Cluster J (SS 504 895) (Figs 1 & 7) — 37 smaller cairns including RCAHM 1976a, nos 213, 214 and 216-219 (with inaccurate grid references in RCAHM 1976a) and Rutter, T9 (1948, p. 56) cover some 5 hectares of undulating ground between 145 m and 168 m O.D. north of the crest. Cairns tend to be on natural terraces in the slope and range from 2 m across to a 11 m wide crescent-shaped accumulation (185) which may be only partly artificial (Table 2), with an average diameter of 4.2 m. Two structured

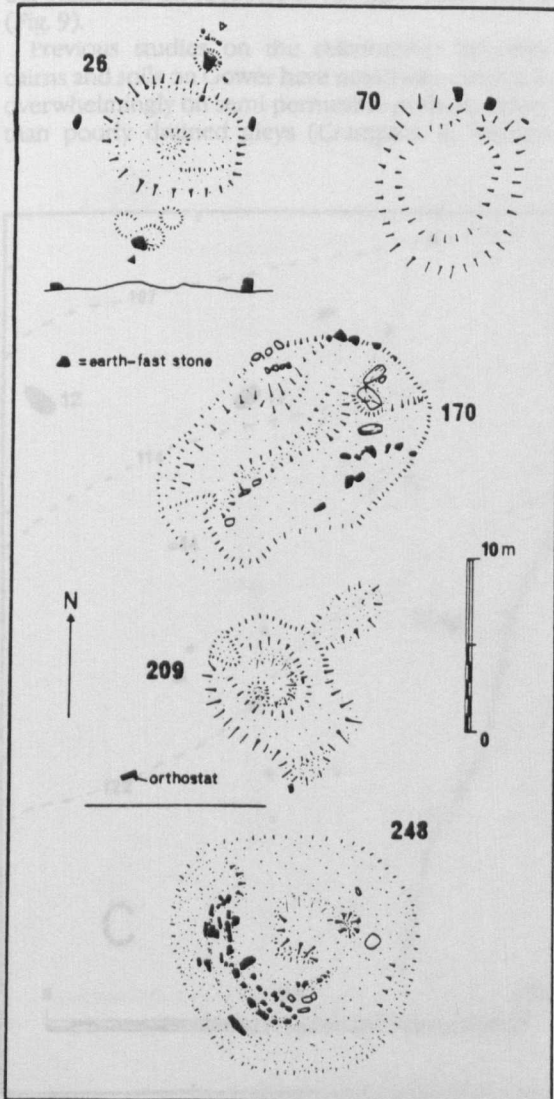


Fig. 3. Examples of cairns with structural elaborations (all the ring cairns on Cefn Bryn are illustrated in Ward 1988).

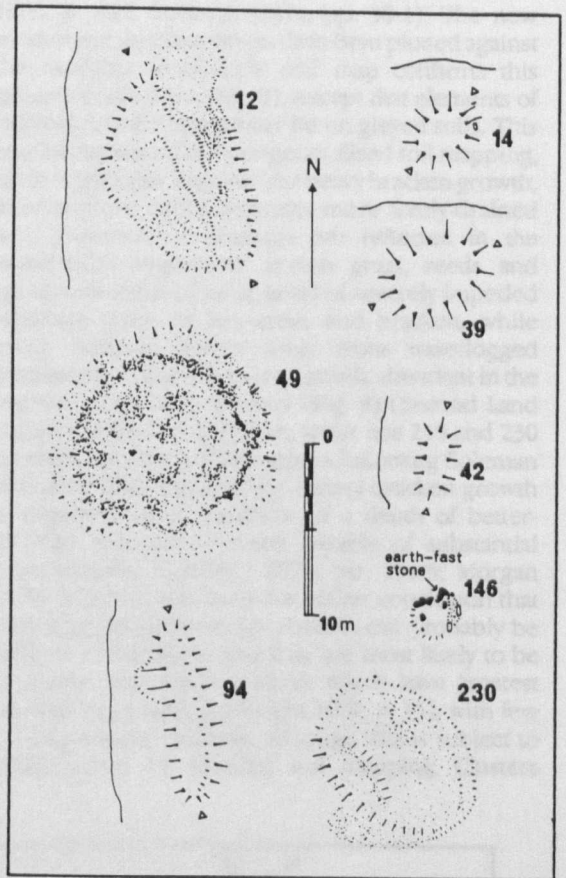


Fig. 4. Examples of cairns without apparent structural elaborations.

cairns (170 and 186, Table 1) lie to the west and north respectively.

Cluster K (SS 5085 8920) (Figs 1 & 7) — 17 unstructured cairns lie over some 3 hectares on the slope of a saddle in the ridge crest at between 168 and 175 m O.D. Seven are on minor natural south-facing terraces. They average 5.1 m in diameter, ranging from 3.3 m to 14 m across. The 14 m-round cairn (212, Table 2) is close to structured cairn 211 (Table 1) on the western edge of the group. Structured cairn 209 (Table 1) lies 50 m to the south-west. Downslope, to the south is a 6.4 m-wide cairn, identified with RCAHM 1976a, no. 222, isolated on a terrace at 140 m O.D. (Fig. 1).

Cluster L (SS 513 895) (Figs 1 & 8) — 15 cairns from 2.6 to 10 m across with an average diameter of 4.5 m, spread over some 4 hectares, of the southern slope of a saddle on the ridge crest between 175 and 159 m O.D., including RCAHM 223-25 and 227. The largest cairn (230, Table 2) is at the western edge of the group. North of cairn 236 is a 18 x 9 m 'enclosure' comprising an irregular stony lip, which, if artificial, may result from the removal of stone from either a natural accumulation or, less likely, a low cairn. 380 m along the crest to the east is a 3.5 m-diameter cairn isolated on a north-facing terrace (Fig. 1).

The pattern of soils on Cefn Bryn is complicated on account of the various materials from which they are derived (Bridges & Clayden 1971, p. 79). Soils include relatively well-drained ferric podzols and brown podzolic soils derived from fine-grain sandstone and marl, less well-drained humo-ferric podzols developed from quartz conglomerates, poorly drained stagnohumic gley soils formed from hill wash and boulder clay, and gley soils derived from glacial drift (Bridges 1967; 1982, pp. 64-8). Although well described in the literature, soils have not been mapped in detail on the ridge. Humo-ferric podzols are found on sections of the crest, with rock exposure and surface stone visible, and substantial quantities of conglomerate boulders are exposed in quarries on the south slope. The ferric and brown podzols are largely north of the crest except for a major accumulation associated with two saddles two-thirds of the way along the crest to the east. The gleyed soils are found in seepages relatively high up the ridge and on foot slopes (Bridges 1965; 1967) (Fig. 9).

Previous studies on the relationship between cairns and soils on Gower have noted that cairns are overwhelmingly on semi-permeable podzols rather than poorly drained gleys (Crampton & Webley

1963, p. 335; RCAHM 1967a, pp. 50-1). The new monument distribution on Cefn Bryn plotted against the available small-scale soil map confirms this general conclusion (Fig. 9), except that elements of clusters A and E apparently lie on gleyed soils. This may be explained by over-generalised soil mapping, since vegetation, in particular heavy bracken growth, around these cairns indicates more freely-drained soil. Extremes of drainage are reflected in the present-day vegetation: cotton grass, reeds and sphagnum moss occur in areas of severely impeded drainage north of the crest; and bracken, while rarely entirely absent away from waterlogged conditions, is dominant or relatively abundant in the vicinity of all cairn clusters (Fig. 9) (Second Land Utilisation Survey of Britain, sheet nos 210 and 230 modified by recent observations following Coleman & Shaw 1980). Significantly, strong bracken growth is regarded as an indicator of a depth of better-drained soil and of areas capable of substantial improvement (Limbrey 1975, pp. 154-5; Morgan 1979, p. 3). On this basis the earlier conclusion that cairns are on present-day podzols can probably be refined to the extent that they are most likely to be on brown and ferric podzols which have greatest agricultural potential (Wright 1979, p. 15), with few on humo-ferric podzols, although this is subject to confirmation by detailed soil mapping. Clusters

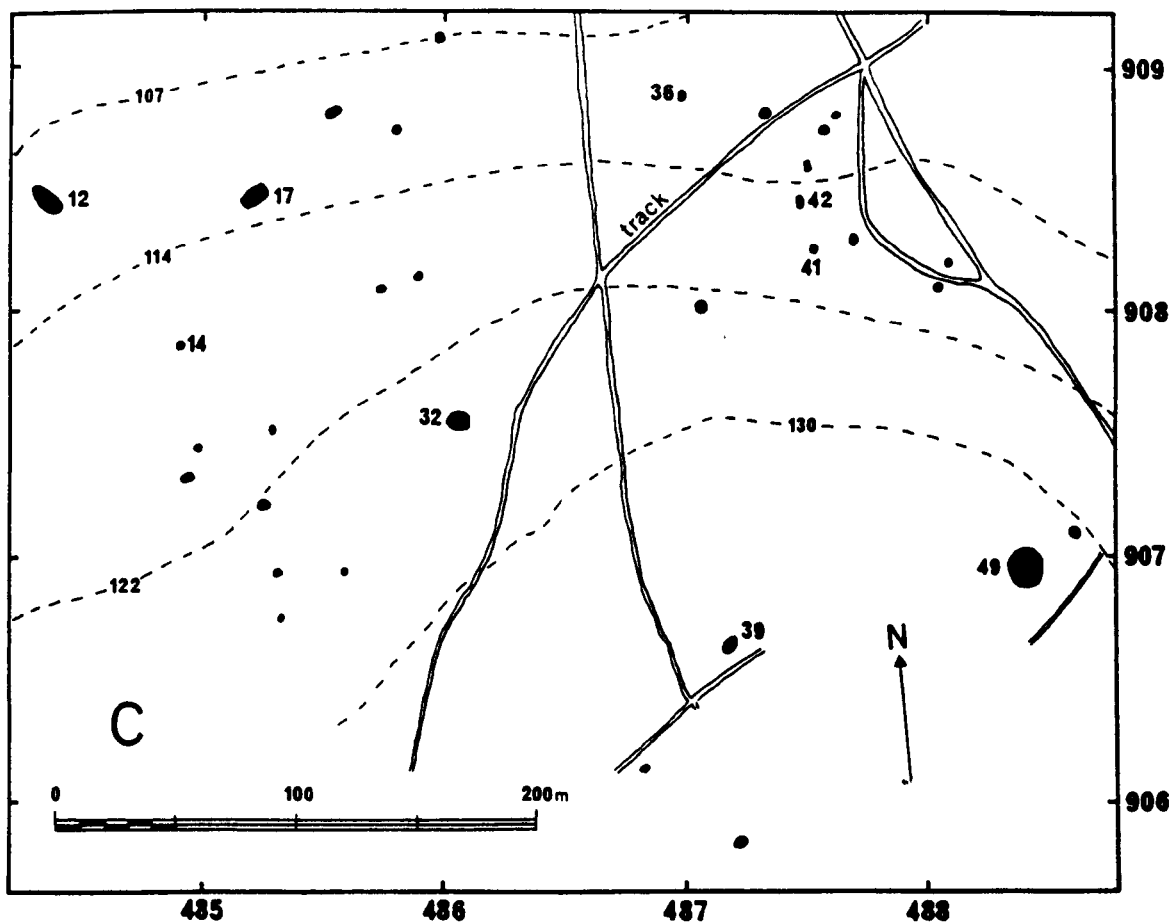


Fig. 5. Cairn cluster C (contours in metres).

avoid steep slopes, particularly to the south and east (Fig. 1), and areas with rock exposure or boulder fields (Fig. 9).

DISCUSSION

THE CHARACTER OF THE CAIRNS

On Cefn Bryn, scale and visual appearance used as primary criteria for analysis (Yates 1983, pp. 342-3) suggest that perhaps only around 15 cairns should be regarded as likely Bronze Age ritual monuments, compared to the 32 in the *Inventory* (RCAHM 1976a, nos 198-230). While the 12 'structured cairns' (Table 1) are likely ritual monuments of conventional Bronze Age attribution, designation of the larger unstructured cairns (Table 2) is more problematic. Some may also be Bronze Age ritual sites, perhaps, particularly, round cairns 9, 49 and 212, which, like the structured cairns, are located at the periphery of clusters of smaller cairns. The status of the larger unstructured oval cairns is less clear, particularly cairns 32 and 230, though the irregular or extended

configuration of the others and their closer association with smaller cairns favours an origin as clearance (*i.e.* 15, 17, 81, 94, 147 and 185). Present-day soils and their potential can be only cautiously projected through climatic change and human interference into the distant past (Bridges 1978). However, the different characteristics of their parent materials may always have resulted in varying potential, with human intervention less important than inherent trends of development (Ball 1975). The coincidence of cairns with soils of apparent greatest agricultural promise supports the hypothesis that the overwhelming majority of cairns, those unstructured in form and under 8 metres across (Figs 1 & 2), are a consequence of clearance for agriculture.

Admittedly, such distinctions are crude, since collection of stone for ritual monuments would have contributed to clearance on Cefn Bryn, quite possibly intentionally, given a recurrent position of ritual cairns on the edge of better land. Also disturbance of sites will have modified form. Further, though excavation of groups of smaller cairns in Wales has not often revealed convincing

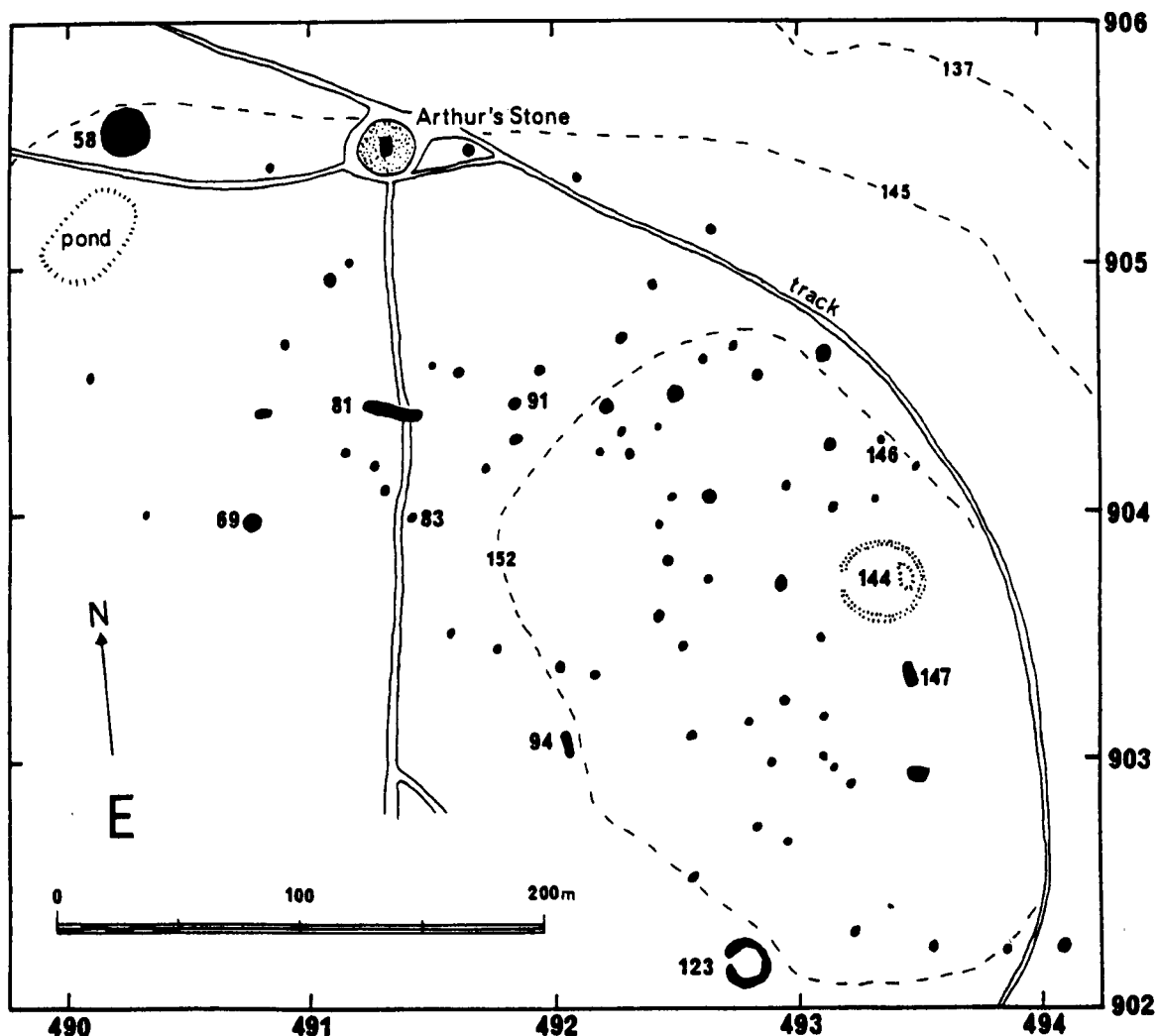


Fig. 6. Cairn cluster E (contours in metres).

evidence of burial (*contra* Fox & Murray Threipland 1942-43), burials have been found within cairn clusters, for example in the partially excavated smaller cairn groups in the Brenig Valley, Clwyd (Lynch *et al.* 1974, pp. 45-9 and at Penrhiw Cradoc, Mid-Glamorgan (Owen John 1986), each of which yielded one cairn covering a burial. These, however, might have been distinguished from other cairns in their groups before excavation: that in the Brenig by a degree of isolation; that at Penrhiw Cradoc by an unusual rectangular structure with built kerb (RCAHM 1976a, no. 489ii), and both by greater size. While most smaller cairns on Cefn Bryn, in the writer's view, probably result from agricultural

improvement alone, the possibility is accepted that an unknown but relatively small number could cover burials.

THE DATING OF STONE CLEARANCE

Even excavated clearance heaps are difficult to date directly and tend to be dated by association with other structures (Fowler 1984, p. 18). Suggested dates for examples in Wales range from the late Neolithic to the Middle Ages (Briggs 1985, p. 300). On Cefn Bryn the coincidence of structured cairns, broadly of second millennium b.c. form, with

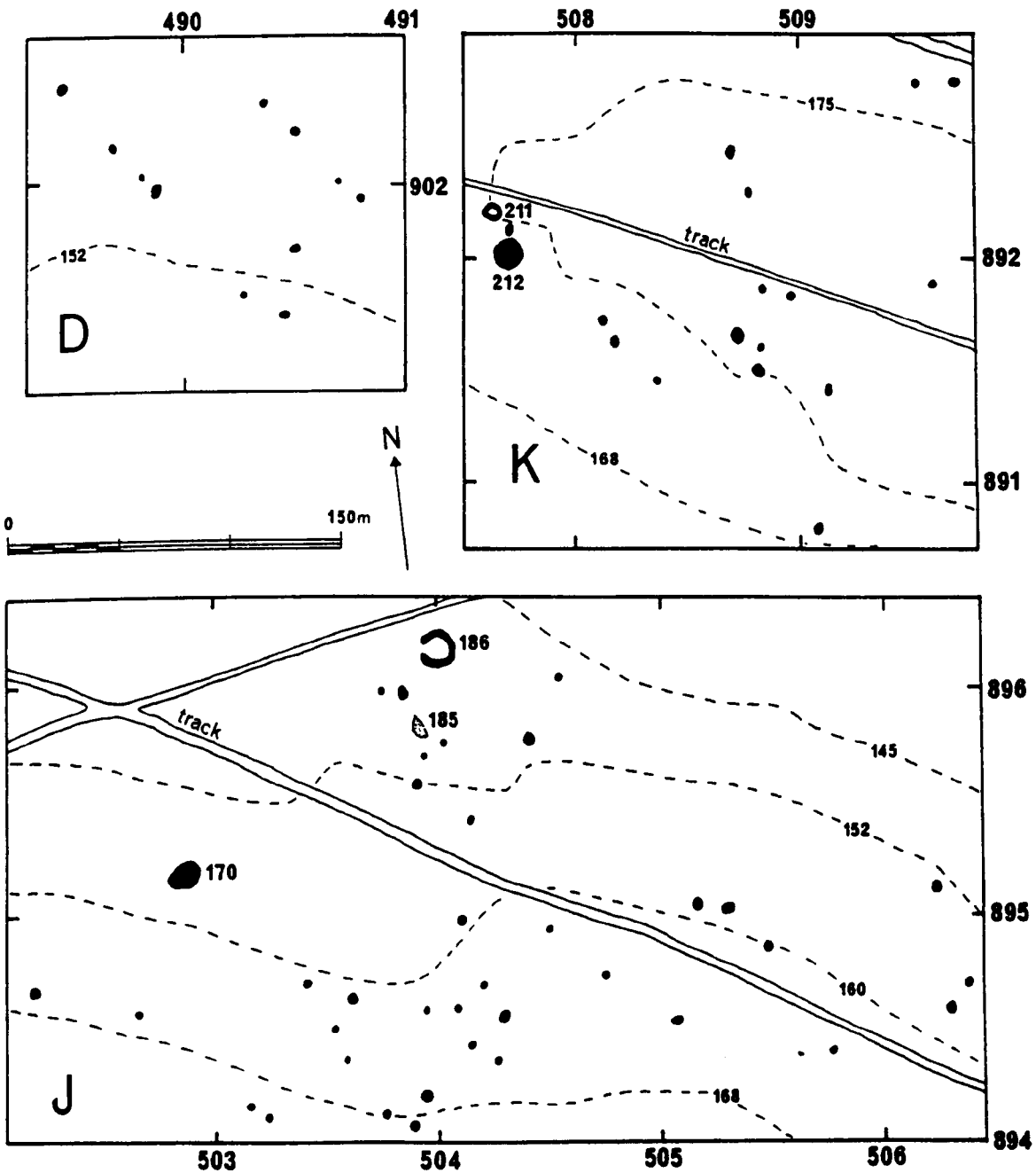


Fig. 7. Cairn clusters D, K and J (contours in metres).

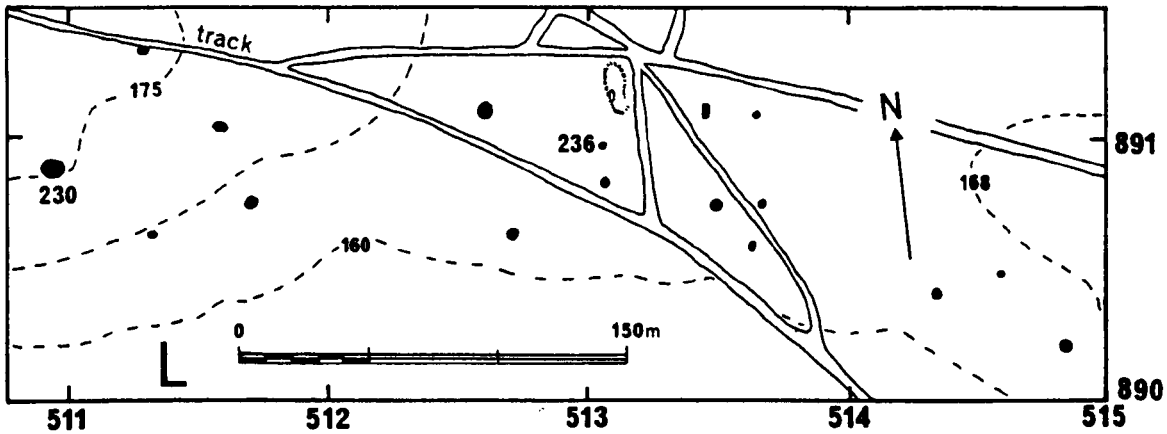


Fig. 8. Cairn cluster L (contours in metres).

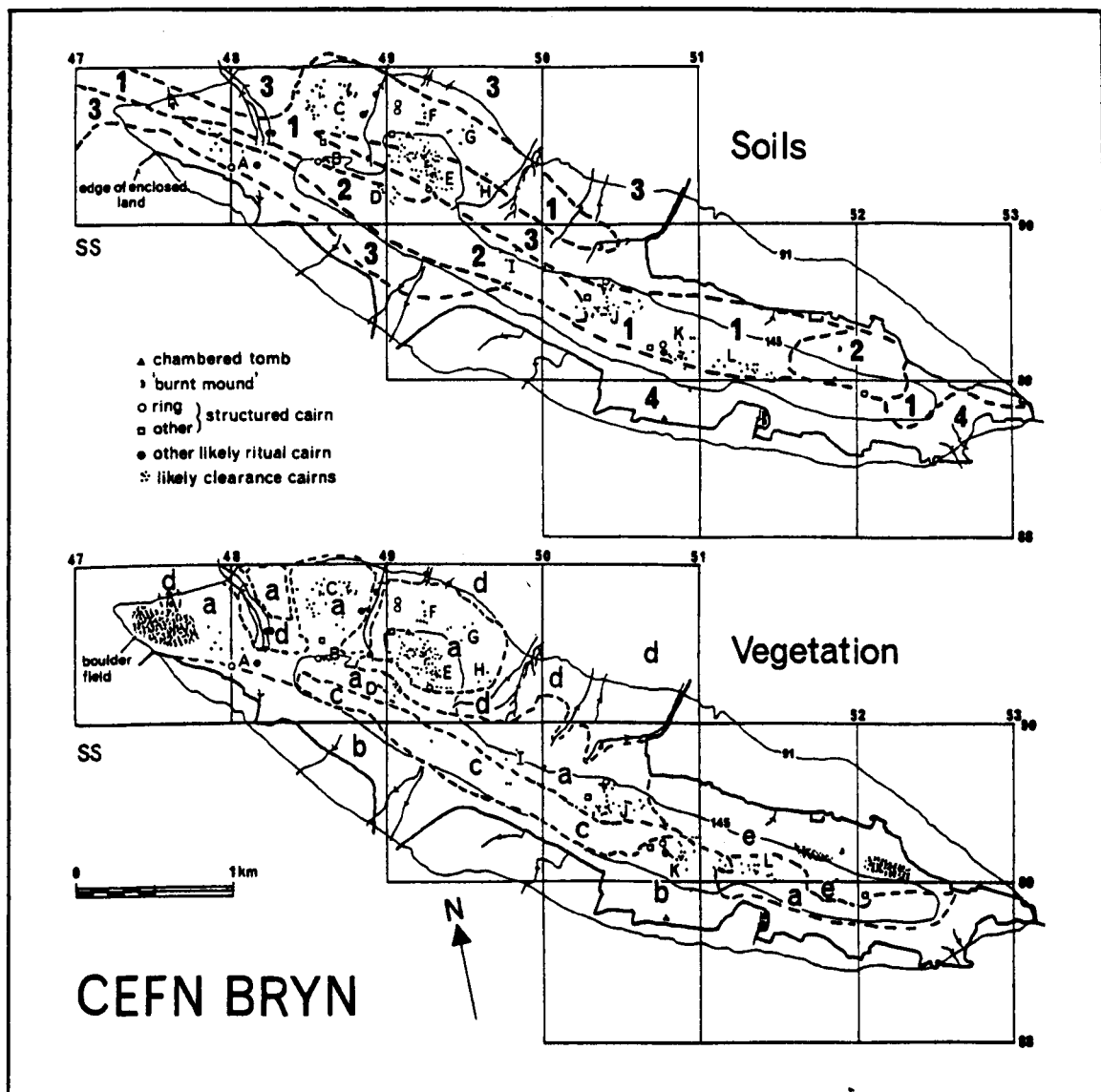


Fig. 9. Relationship of monuments to land use as reflected by generalised soil and vegetation distribution (contours in metres).

Key to Soils (after Bridges 1965 & 1967 following Crampton): 1 = ferric podzols and brown podzolic soils; 2 = humo-ferric podzols; 3 = stagnohumic gleys; 4 = gleyed soils derived from glacial drift.

Key to Vegetation (after Second Land Utilisation Survey of Britain, sheet nos 210 and 230 as modified): a = abundant bracken with grass; b = grass and bracken; c = grasses with a little bracken and some gorse; d = grasses including cotton grass and, in seepages, sphagnum moss; e = mixture of grasses, heather, and some gorse and bracken.

groups of smaller cairns, both on the same islands of better-drained soil, is striking (Figs 1 & 9). On this basis a major phase of stone clearance within the second millennium b.c. is indicated but not proven. A similar observation in the Peak District led to the same conclusion about contemporaneity (Barnatt 1987).

However, stone clearance, potentially of the second millennium b.c., is unlikely to be either the earliest or the only episode of agricultural activity on the ridge. It could, in fact, have been necessitated by earlier exploitation causing erosion of the surface soil with consequent exposure of stone (Limbrej 1975, p. 165), although surface stone may never have been absent in such landscapes (Briggs 1985, p. 298). A third-millennium b.c. site beneath structured cairn 58 (Table 1) (Ward 1987b) will bear interpretation as a work camp for the early exploitation of Cefn Bryn (Ward unpublished), and Arthur's Stone, and possibly the Nicholaston Hall monument, also indicate third-millennium b.c. or earlier, activity. There is, in addition, Iron Age or Romano-British (RCAHM 1976b, no. 644) and medieval settlement around the foot of the ridge (RCAHM 1982, DVI) (Fig. 1) and evidence for recent pastoral exploitation and late eighteenth-/early-nineteenth-century improvement, in the form of lime-dressing, on the common itself (Ward 1983; 1985). Consequently, the various clusters of stone piles could have accumulated during more than one phase of agricultural exploitation.

THE NATURE OF AGRICULTURAL ACTIVITY

Apart from stone clearance, no direct evidence is yet available for the nature of early agriculture on Cefn Bryn. Pollen analysis has been confined to present-day soil profiles (Crampton 1963). Buried soils beneath cairns excavated so far have been contaminated by bracken root (Ward 1988) and superficial undated peat deposits on the Gower Commons indicate that the present vegetation, typical of boggy heathland with oak-birch-alder woodland not far away, has existed throughout the period of accumulation (Kay 1979, p. 12). Towards the base of a soil profile described between the main ridge crest and Arthur's Stone, charcoal has been interpreted as possibly indicating human interference with vegetation (Evans 1976).

Opinions differ as to whether clearance heaps indicate improvement for arable or pastoral farming. The view that stone clearance pre-supposes cultivation (Yates 1983, p. 342) which may have been integrated with pastoral activity in mixed-farming practice (Barnatt 1987, p. 410) has been challenged by an interpretation of palaeobotanical evidence (Limbrej 1975, p. 162) suggesting that cultivation took place only 'exceptionally' in the upland landscapes in which cairn fields are usually recorded. On the basis of recent historically-attested practice (Ward 1985), and because even some poorly-drained gley soils continue to the present to provide moderate pasture (Bridges 1965, p. 204),

there is reason to believe that Cefn Bryn would have provided grazing in earlier times.

As regards arable agriculture, the present climate of the Gower Peninsula is notably mild with a long growing season producing early crops (Perry 1979, p. 6) so that formerly a less degraded Cefn Bryn could have offered real potential for cultivation, particularly during more climatically favourable periods such as the early and mid-second millennium b.c. (Taylor 1975, p. 12). That this was realised is suggested by the improvement, through stone clearance, of areas offering greatest agricultural potential, arguing for a thoughtful and systematic episode of cultivation. A mix of emmer and spelt probably grew in the pre-Roman Iron Age on similar soils elsewhere in this region, on Pembrey Mountain, south-east Dyfed (Hillman 1981, pp. 25-8). Scattered clearance heaps, such as those in cluster A (Fig. 1), suggest that advantage was sought from the locally greater soil depth of small natural terraces, and a preponderance of cairns north of the crest indicates concern for shelter from Atlantic winds. A tendency to a linear arrangement of some clearance cairns and the extended shape of others may indicate 'incipient boundaries' around fields or plots consistent with tillage (Fowler 1984, pp. 18-19). This is visible, for example, in the right-angled setting of cairns between 36 and 41 in cluster C (Fig. 5), in the parallel lines of cairns in cluster D (Fig. 7), and in the area 'enclosed' by cairns including 81, 83 and 91 in cluster E (Fig. 6). Perishable timber fencing is also an obvious possibility to define or protect cultivated areas (Briggs 1985, p. 293). Physical barriers around plots, however, although facilitating stock control in a mixed farming regime, are not considered essential for cultivation by some (Fowler 1984, p. 18; Smith 1985, p. 276). The seemingly random, often cluttered positioning of some cairns could indicate spade cultivation (Mercer 1984, pp. xi-xii), though the manoeuvrability of a light ard is such that ploughing is not precluded (Rees 1984, p. 78).

THE RELATIONSHIP OF AGRICULTURE TO RITUAL AND SETTLEMENT

Previous studies concluded that cairns on Gower were erected on soils which were least desirable for agriculture, with settlement away from the areas used for burial (Crampton & Webley 1963, p. 336). The present survey shows that ritual and agricultural activity at least may share the same landscape, though their contemporaneity is not directly proven. Elsewhere on Gower, on Rhossili Down, it has been suggested that another major concentration of ritual cairns shares a similar landscape with early agriculture (Ward 1987a). The possible coupling of ritual and economic practices in the same landscape supports the contention that ritual, although ostensibly directed towards funerary activity, could have embraced economic concerns too (Ward 1988). The consistent proximity on Cefn Bryn of likely ritual cairns on the periphery of small cairn

clusters, usually to south or west, echoing an observation elsewhere (Barnatt 1987), may reflect this potential connection.

House structures remain unknown on the ridge. As a result of its linear configuration, no section is inconveniently distant from lower ground from where it could have been farmed. On a compact peninsula, having clearly defined natural boundaries to movement and a potential arable component in the economy with marine resources never distant, settlement may have been sedentary, lacking the population mobility implied by economic models involving pastoralism and transhumance argued for the region in the second millennium b.c. and later (Webley 1976). The reasons for an agricultural use of the ridge, which may always have been less favoured compared to the extensive more freely-drained soils elsewhere on the peninsula (Crampton & Webley 1963, p. 335), could embrace both population density and technological and cultural limitations on the level of exploitation of the latter. From an early date Cefn Bryn could have been integral to a mixed agricultural system making maximum use of available land, both freely-drained lower land and less well-drained higher ground, as it apparently has been through the recent past (Ward 1985) down to the present (Henderson 1971, p. 208).

The stony remains on Cefn Bryn divide into two groups, to east and west, each with a similar suite of monuments including chambered tombs, second-millennium b.c. sepulchral and ceremonial monuments, as well as clearance piles and 'burnt mounds' (Fig. 1). Each suite can be related to the developing economic, funerary and ceremonial needs of putative settlement around the ridge. Lithic scatters indicate possible settlements on fertile soils to the south (GGAT 1982), though none is recorded to the north. This may be attributed to the present-day cultivation to the south affording more opportunity for discovery than the practice of dairying to the north. However, standing stones, dated in south-west Wales mostly to the later second millennium b.c. (Williams 1988, p. 51), lie to the north and south-west of the ridge (RCAHM 1976a, nos 543-550) coinciding with well-drained soils (Crampton & Webley 1963, p. 333) suggesting

activity on the lower ground of both flanks broadly contemporary with at least a ritual phase on the ridge.

The date and function of eleven heaps of burnt stone, in three instances closely paired and mostly located towards the foot of the slope on the north and south of the ridge (although two sites are closer to the crest near the heads of streams) (Fig. 1), requires cautious assessment. Radio-carbon dates for examples in west Wales fall mostly within the second millennium b.c. but third-millennium b.c. and eighth-century a.d. dates are also known (Williams 1985; James 1986, pp. 259-60). Diverse industrial, ritual and social explanations have been suggested (James 1986, p. 248) although the traditional interpretation of 'cooking mound' continues to be favoured (Ó Drisceoil 1988). Unlikely, on account of poor drainage in the vicinity, to be the immediate sites of settlement on Cefn Bryn, their position could reflect a significant role at the interface between the respective activities and resources of the ridge and its environs.

EARLY 'FIELDS' IN SOUTH WALES

Reassessment of the cairns and cairn fields on Cefn Bryn, with consequences for the classification of similar features elsewhere in the region (RCAHM 1976a, pp. 105-20), contributes to the anticipated growth of evidence for early agriculture in South Wales (Fowler 1983, p. 47). A notable diversity of structural remains, including clearance piles and bands, cultivation terraces and land allotment, has recently been described (*e.g.* Drewett 1987; Leighton & Percival 1986; Leighton *et al.* 1987; Vyner 1987; Ward 1987a, 1989; Williams 1981). Although occasionally relict field systems may be of later historic date (*e.g.* Briggs 1985; Murphy 1988), many are likely to belong to the last two millennia b.c. or early historic period. Their occurrence on what has been conventionally viewed as more 'marginal' land indicates a landscape which for substantial periods was more fully utilised, possibly in support of higher levels of population than previously envisaged (Burgess 1980, p. 245; 1985).

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APPENDIX

Concordance of site numbers cited in the text and on figures with the listing in the Royal Commission on Ancient and Historical Monuments (Wales), *Inventory* (RCAHM 1976a)

<i>Survey no.</i>	<i>RCAHM 1976a no.</i>
7	199
9	201
12	500i
14	500iii
17	500ii
23	202
32	500x
39	500xii
49	206
58	207
69	485xiii
81	485
83	485ix
91	485vi
94	485xxx
123	209
144	210
147	485xxviii
170	212
186	215
211	221
212	220
230	223

