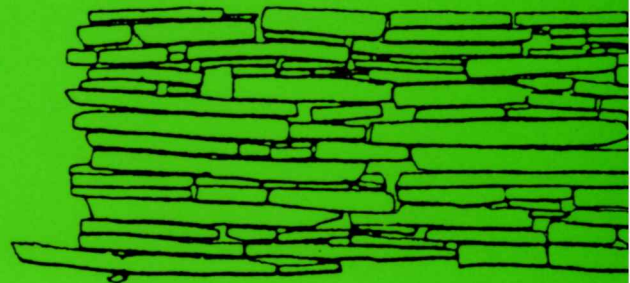
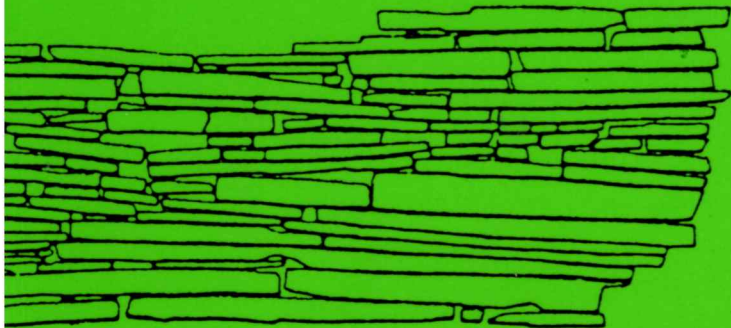


Cambrian Archaeological Monographs No 2

**GWERNVALE
and
PENYWYRLOD:
Two Neolithic Long Cairns
in the Black Mountains
of Brecknock**

by W. J. BRITNELL and H. N. SAVORY



The Cambrian Archaeological Association 1984

Cambrian Archaeological Monographs No 2

GWERNVALE
and
PENYWYRLOD:

Two Neolithic Long Cairns
in the Black Mountains
of Brecknock

by **W. J. BRITNELL**, M.A. and **H. N. SAVORY**, M.A., D.Phil., F.S.A.

WITH CONTRIBUTIONS BY

S. Briggs, D. R. Brothwell, T. C. Darvill, P. Q. Dresser,
H. S. Green, E. Healey, J. Henderson, R. M. Hooley,
F. M. Lynch, J. V. S. Megaw, T. P. O'Connor and W. J. Phillips

The Cambrian Archaeological Association 1984

© Cambrian Archaeological Association 1984

ISBN 0 947846 00

ISSN 0266-593

Series Editor: Robin G. Livens, F.S.A.

Published by the Cambrian Archaeological Association
with the aid of a grant from the Welsh Office

Cambrian Archaeological Monographs may be obtained from:

Robin G. Livens,
Department of History,
University College of North Wales,
Bangor,
Gwynedd LL57 2DG

Editor's Preface

Following the resignation of Mr G. C. Boon from the Editorship of the Cambrian Archaeological Association *Monographs & Collections* Series in January, 1983, the Association invited me to succeed him as Editor. At the same time, the opportunity was taken to establish a new management structure for the Series. A Management Committee and an Editorial Panel have now been established, to oversee the production of further volumes. The series might, in future, include volumes sponsored jointly with other bodies, and cover subjects other than rescue excavation. The series will therefore be known in future as *Cambrian Archaeological Monographs*.

As Editor of this volume, I wish to record my gratitude to a number of people for their assistance: Mrs F. M. Llewellyn read the typescript and her many suggestions have greatly improved the text; Dr M. W. Thompson, of the Conservation and Lands Division of the Welsh Office, was a tower of strength in dealing with the various administrative problems. Miss B. L. R. Jones, as Editorial Assistant, coped with the task of copy-editing the text with supreme competence.

The production of a volume in a series such as this, however, depends principally upon the authors and I must thank them for producing a text which was a model of presentation and which greatly lightened my labours: it has been a pleasure to collaborate with them. Finally, I must record my personal indebtedness to Mr Boon, who inaugurated the series. I owe much to his pioneering work and I hope that this volume falls not too far below the standards which he set.

ROBIN G. LIVENS

Contents

List of Figures	vi		
List of Plates	vii		
Part 1 Neolithic Long Cairns in the Black Mountains <i>by W. J. Britnell</i>			
A REVIEW	3		
Part 2 The Penywyrld Long Cairn, Talgarth, Brecknock <i>by H. N. Savory</i>			
INTRODUCTION	13		
CHAPTER I: DESCRIPTION	15		
The Site and its Setting	15		
The Main Chamber	16		
Lateral Chamber NE I	16		
Lateral Chamber NE II	19		
Lateral Chamber NE III	20		
The Portal	22		
The Forecourt	22		
Revetment Walls and 'Extra-revetment' material	23		
The Cross-wall	24		
CHAPTER II: THE FINDS	26		
Flint	26		
Stone	26		
The Bone ?Flute <i>by J. V. S. Megaw</i>	27		
Pottery	28		
CHAPTER III: DISCUSSION	29		
The Place of Penywyrld in the Severn-Cotswold Group	29		
The Continental Background	30		
The Forms of the Chambers at Penywyrld	32		
The Forecourt and Portal	33		
The Cairn and its Walls	34		
The Question of Multi-period Construction	35		
The Burial Rite	35		
APPENDIX: The Human and Animal Remains <i>by R. M. Luff, D. R. Brothwell and T. P. O'Connor</i>	36		
Part 3 The Gwernvale Long Cairn, Crickhowell, Brecknock <i>by W. J. Britnell</i>			
INTRODUCTION	43		
Location of the Site	43		
The Condition of the Monument before Excavation	44		
		Gwernvale in Antiquarian History <i>by Stephen Briggs</i>	45
		CHAPTER I: THE STRUCTURES REVEALED BY EXCAVATION	49
		Late Upper Palaeolithic and Mesolithic Activity	50
		Pre-Cairn Neolithic Activity	50
		The Chambered Tomb	55
		The Cairn	57
		The Forecourt	63
		Chamber 1	64
		Chamber 2	70
		Chamber 3	79
		Chamber 4	85
		Contemporary Activities near the Cairn	88
		Cairn Blocking	90
		Subsequent History of the Site	93
		CHAPTER II: THE FINDS	95
		Introduction	95
		The Neolithic Pottery <i>with contributions by Frances Lynch and T. C. Darvill</i>	97
		The Lithic Industries <i>by Elizabeth Healey and H. Stephen Green</i>	113
		Utilized Stones	132
		Iron Age Glass Bead <i>by Julian Henderson</i>	135
		CHAPTER III: DISCUSSION	136
		Late Upper Palaeolithic and Mesolithic Activity	136
		Pre-Cairn Neolithic Activity	138
		The Chambered Tomb	142
		The Original Form of the Tomb	143
		The Sequence of Construction	146
		The Function of the Tomb	148
		The Final Closure of the Tomb	150
		APPENDIX I: Details of Features	151
		APPENDIX II: Radiocarbon Dating <i>by Quentin Dresser</i>	152
		APPENDIX III: The Human and Animal Bone Remains <i>by Timothy O'Connor</i>	153
		APPENDIX IV: Petrological Examination of an Axe fragment from Gwernvale <i>by W. J. Phillips</i>	154
		Bibliography	155
		Index	159

List of Figures

Part 1 Review

1. Location, and distribution of chambered long cairns in the Black Mountains .. 5
2. Comparative plans of major excavated long cairns in the Brecknock group 8

Part 2 Penywyrlod

3. Site location 12
4. Overall site plan *facing* 15
5. Plan of Chamber NE I 17
6. Plan of Chamber NE II 18
7. Sections and profiles through cairn *facing* 20
8. Plan of Portal and Forecourt 21
9. Plan of tail of cairn and section through buttress pit 25
10. Flint, stone, bone ?flute and pottery .. 28

Part 3 Gwernvale

11. Site location 42
12. Plan on completion of road-building .. 44
13. Reconstruction of pre-cairn land surface .. 50
14. Timber features beneath eastern end of cairn 53
15. Plan showing distribution of different types of building material 56
16. Elevations of forecourt and northern side of cairn *facing* 59
17. Elevations of southern side of cairn *facing* 59
18. Plan of Chamber 1 66
19. Elevations of Chamber 1 69
20. Plan of Chamber 2 71
21. Elevations of Chamber 2 73
22. Plan of collapsed roofing within Chamber 2 75
23. Plan of Chamber 3 78
24. Elevations of Chamber 3 81
25. Axonometric projection drawing of Chamber 3 82
26. Elevation of passage entrance 83
27. Plan of Chamber 4 86
28. Plan of features contemporary with the cairn 89
29. Section through cairn blocking near Chamber 3 92
30. Overall plan of features *facing* 92
31. Plan of cairn *facing* 92
32. Plan of structural divisions in cairn and cairn blocking *facing* 92

33. Plan of chamber, forecourt and cairn blocking *facing* 92
34. Plan of later features 93
35. Plan showing development of recent highway 94
36. Plan showing fully excavated areas and methods of finds recovery 96
37. Pre-cairn pottery 98
38. Pre-cairn pottery 99
39. Pre-cairn pottery 100
40. Pottery contemporary with tomb 102
41. Pottery associated with chamber blocking 104
42. Pottery associated with chamber blocking 105
43. Summary of pottery phasing 107
44. Flintwork 115
45. Diagram illustrating dimensions of flintwork 117
46. Flintwork 118
47. Flintwork 119
48. Flintwork 120
49. Flintwork 121
50. Flintwork 122
51. Flintwork 123
52. Flintwork 124
53. Flintwork 124
54. Flintwork 125
55. Flintwork 126
56. Flintwork 127
57. Flintwork 128
58. Distribution and phasing of flintwork .. 131
59. Utilized stones 133
60. Utilized stones 134
61. Glass bead 135
62. Distribution of Late Glacial and Post-glacial lithic industries in Wales 137
63. Early Neolithic timber structures in Britain and Ireland 139
64. Early Neolithic timber structures associated with tombs in Britain 140
65. Comparative plans of some tombs in the Black Mountains group 145
66. Reconstruction of Chamber 3 with entrance opened 148
67. Reconstruction of Chamber 3 with entrance closed 149

List of Plates

Penywylod (between pp. 40-41)

- 1 *General views*
 - a View of NE side at time of discovery
 - b Tail of cairn before excavation
 - c High level view from SE following excavation
- 2 *Portal*
 - a Portal before excavation
 - b Base of outer revetment wall of forecourt joining portal
 - c Fallen orthostat and its original socket
- 3 *Forecourt*
 - a Forecourt blocking
 - b SE horn: section through inner and outer revetment walls
 - c Displaced lintel of portal and forecourt blocking
- 4 *SE Horn*
 - a Remains of SE horn
 - b Cist containing child's skull inserted in revetment of SE horn
- 5 *Main chamber*
 - a Main chamber before excavation
 - b Main chamber and associated thrust blocks
 - c Main chamber in relationship to portal
 - d Detail of partially exposed end of chamber
- 6 *Chamber NE I*
 - a Chamber entrance
 - b View in relationship to Chamber NE II
 - c Shattered remains of orthostats
 - d Inner and outer revetment walls near Chamber NE I
- 7 *Chamber NE II*
 - a View from NE
 - b Skeletal remains
 - c View from E
- 8 *Chamber NE II and Cross-wall*
 - a Blocking slab
 - b Dummy entrance passage
 - c Cross-wall from SW
 - d Cross-wall from SE
- 9 *Chamber NE III*
 - a View from N
 - b View from NE
 - c Chamber in relationship to tail of cairn
- 10 *Tail of cairn*
 - a Tail and NE side of cairn
 - b Detail showing inner and outer revetment walls
 - c Section through buttress pit

11 *Bone flute from Chamber NE II*

- a General view
- b Detail

Gwernvale (at end)

- 12 *General views*
 - a General view after opening of the new road, looking NW
 - b General view looking SE
- 13 *Pre-cairn buried soil*
 - a Section through base of cairn and buried soil
 - b Natural monolith and axial line of stones at base of cairn
 - c Surface of buried soil after removal of part of revetment walls
- 14 *Inner and outer revetment walls*
 - a Cross-section through revetment walls at NW end of cairn
 - b Inner revetment wall SE of Chamber 1
 - c Outer revetment wall to E of Chamber 3
- 15 *Forecourt*
 - a Forecourt and earlier timber features
 - b Surviving forecourt blocking
- 16 *Six-poster within forecourt*
 - a Posthole F207
 - b Posthole F211
 - c Posthole F211 from above
- 17 *Chamber 1*
 - a Chamber before excavation
 - b View looking NE with passage blocking in position
 - c Walling within chamber
- 18 *Chamber 1 entrance passage*
 - a Surviving stonework outside entrance to chamber
 - b View of outer end of passage with blocking wall in position
 - c Outer end of passage with blocking wall removed
- 19 *Chamber 2*
 - a View with inserted blocking wall still in position
 - b View with blocking wall removed
 - c Detail of collapsed roofing
- 20 *Chamber 2 passage blocking*
 - a Upper passage blocking
 - b Rubble beneath upper blocking wall
 - c Base of passage blocking

- 21 *Chamber 3*
a View after removal of overlying road material
b View during course of excavation
c View during course of excavation
- 22 *Chamber 3*
a View during course of excavation
b View during course of excavation
c View on completion of excavation
- 23 *Chamber 3*
a Fallen orthostat 24
b Passage entrance after removal of inserted blocking wall
c Detail of primary external blocking structure
- 24 *Chamber 3 passage blocking*
a Entrance to passage with blocking still in position
b Outer passage with latest blocking removed
c Detail of earlier blocking wall
- 25 *Chambers 3 and 4*
a View of SE side of the entrance passage to Chamber 3
b View of concave wall at W end of site
c General view of remnants of Chamber 4
- 26 *Portable axe-polishing or sharpening stones from Neolithic sites in Wales*
a Stone from Gwernvale
b Stone from Llandegai, Gwynedd
c Stone from Bryn yr Hen Bobl, Anglesey

PART 1

**Neolithic Long Cairns in the
Black Mountains**

by W. J. Britnell

A Review of Earlier Excavation¹

The two sites whose excavations form the basis of this volume—Penywyrld,² Talgarth, and Gwernvale, Crickhowell—though both characteristic in many ways of the now relatively well-studied group of chambered tombs in the Black Mountains of Brecknock, are at least exceptional in the circumstances surrounding their recent investigation. Gwernvale, known since the late eighteenth century and examined by a party led by Colt Hoare on 26 May 1804, survived only as a single free-standing chamber within feet of one of the main arterial routes leading into Wales, which before excavation held little prospect of making a substantial contribution to megalithic studies. By extreme contrast, Penywyrld only made its debut in the archaeological world on 27 June 1972 as the result of a telephone call to the Keeper of Archaeology in the National Museum of Wales, reporting the discovery of human remains in an unknown mound being actively quarried for stone. In retrospect it can be seen that sole knowledge of the site at Gwernvale is due to the chance survival of a single chamber belonging to a very much more complex monument, whose other elements had been almost wholly levelled during the course of road improvements from at least the middle of the eighteenth century. Carried a little further, this would have led to the complete disappearance of the site, as appears to have happened with the burial chamber known at Croesllechau (Crawford 1925, 53-54). In the case of the more remote site at Penywyrld, it is ironic that its extreme size and excellent state of preservation should have effectively hidden it from archaeological attention until recent years. The recent history of these three sites would give rise to some doubts as to whether the full distribution of megalithic tombs in the Black Mountains area is yet known or even knowable, but between them they embrace the extremes of preservation of the other extant sites within the group, and thus afford some measure of the potential which awaits future excavation.

The first modern inventory of prehistoric sites in Brecknock is currently in preparation by the Royal Commission on Ancient and Historical Monuments

in Wales. It is anticipated that this survey will be published in the near future, so we may limit detailed discussion to a review of the evidence obtained from the excavation of long cairns in this region, in the light of the very significant contributions made by the recent work carried out at Penywyrld and Gwernvale.

Even taking into account tombs in Radnorshire (Corcoran 1969, 290)³ and Herefordshire (Corcoran 1969, 288), the Black Mountains group (fig. 1) still presents a relatively isolated and compact distribution. This is comparable to other groups of megalithic tombs in Wales, but it notably forms the only large one in inland Wales (*cf* Grimes 1936*b*, 113). It has been suggested that the presence of freely-drained base rich soils was a determining factor (Webley 1959). The topographical distribution of tombs is very diverse, however, and although it avoids the extremes of the marked altitudinal range that is present locally, it implies that a broad range of ecological zones was being exploited by contemporary society to support a mixed farming economy, possibly dependent upon transhumance (p. 138). The complementary, rather than exclusive, nature of the distribution of Mesolithic material and megalithic tombs in Wales might imply either severe competition between late hunter-gatherer groups and alien agriculturalists, or alternatively an indigenous development from one economic system to another. The general absence of tombs further inland in Wales would in turn suggest that monumental construction was irrelevant to the social structure of communities in those areas, or that the present distribution of sites reflects a tide-mark in the development and exploitation of inland Wales at a date about the middle of the third millennium bc, when these kinds of tomb ceased to be built.

Morphology

The first coherent account which saw the Black Mountains tombs within a wider geographic setting was conceived by Crawford in the 1920s (Crawford 1925), developed by Grimes (1936*a* and *b*) and baptized 'Severn-Cotswold' by Daniel (Daniel 1937)

¹ I am grateful to both Hubert Savory and Frances Lynch for their comments upon this review.

² To distinguish the two sites with this name, the more recently excavated one is referred to throughout this volume as Penywyrld, Talgarth, and the other as Pen-y-wyrld, Llanigon.

³ C.B.A. *Archaeology in Wales*, 13 (1973), p. 63.

in the following decade.⁴ Intensive fieldwork carried out throughout this period and later (Daniel 1950a), drew attention to significant morphological characteristics which linked the Brecknock tombs with others in the modern Welsh counties of Glamorgan and Gwent (with outliers in North Wales), and in the English counties of Hereford, Gloucester, Oxford, Wiltshire, Somerset and Berkshire. By the time that the most recent synthesis of the entire group was attempted (Corcoran 1969), substantial excavations had been carried out at two Brecknock sites—Ty-isaf (Grimes 1939) and Pipton (Savory 1956), smaller-scale work having been undertaken at Pen-y-wyrlod, Llanigon (Morgan and Marshall 1921; Vulliamy 1922a), Ffostill North and South (Vulliamy 1921, 1922b, 1923),⁵ and Little Lodge (Vulliamy 1929)—apart from the ‘experiment’ by Colt Hoare at Gwernvale in 1804 (fig 1). Since that time the only other excavation had been a minor one at Mynydd Troed (Crampton and Webley 1966).

Undoubtedly, the clearest and most detailed evidence of the group now comes from just four of the sites, namely Ty-isaf, Pipton, Penywyrlod (Talgarth) and Gwernvale, and the following discussion will be largely confined to these. It is probably no more than coincidence that these four extensively investigated sites are all fairly typical of laterally-chambered Severn-Cotswold tombs, and it should be borne in mind that other different kinds of megalithic structure are probably represented in the region, possibly including tombs with simple terminal chambers and ones with enclosed cists (*cf* Corcoran 1969, 22; Grinsell 1981, 131). Any attempt at a rigid classification of partially excavated sites and those known only from fieldwork, is highly subjective, however, and it would be wise to avoid it. It should be noted that doubt has been cast on the true nature of some sites known only from surface indications, such as Cwm Fforest and Carn Goch (Daniel 1950a, 214-15), and the full evaluation of these and other sites in Brecknock which have been claimed more recently (*eg* in Webley 1956a, 1956b; Crampton and Webley 1966, 71-72) must await the presentation of evidence in the forthcoming Royal Commission inventory.

Following the scheme initiated by Thurnam in 1896, and developing the ideas of later writers, Corcoran proposed a broad three-fold classification of Severn-Cotswold tombs: (i) cairns with simple terminal chambers, (ii) cairns with transepted terminal chambers, (iii) cairns with lateral chambers (Corcoran 1969, 14). These, Daniel proposes to name respectively as the Randwick-Tinkinswood type, the Notgrove-Parc le Breos Cwm type, and the Belas Knap-Rodmarton type (Daniel 1970,

263). Significantly, perhaps, Daniel avoids employing any of the Brecknock cairns as type-sites, and Corcoran included both of the best-known ones—Ty-isaf and Pipton—in a fourth ‘hybrid’ category (Corcoran 1969, 63), since both bear elements which are uncharacteristic of the other groups with particular reference to the form and siting of the chambers. Both these sites, however, among which we may now include Penywyrlod, Talgarth, and Gwernvale, are most closely allied to the Belas Knap-Rodmarton type of laterally-chambered tombs, which are more characteristic of Brecknock and Gloucestershire (Savory 1963, 30-31, fig. 7).

Recent research is beginning to show more clearly the possible ancestry of various elements which are found in the Severn-Cotswold group within the broad spectrum of Neolithic funerary architecture in western Europe, particularly in areas of northern and western France, and which are discussed in some detail by Savory below (pp. 30-32). Nearer to home, Britnell argues (p. 144) from the plan and orientation of chambers found at Gwernvale that we may be starting to see the kind of variation in tomb morphology that we might expect to be present in regional groups within the Severn-Cotswold province (*cf* Lynch 1972, 68).

Although there is clearly some considerable variation in the Black Mountains tombs, particularly in terms of size (p. 15), there are some notable points of similarity in the more fully investigated sites (fig. 2). In each case the cairn is trapezoidal. All contain more than one chamber (probably originally roofed with capstones), normally provided with an entrance passage leading from the side of the cairn. All have relatively deep forecourts and ‘dummy’ portals represented by orthostats. All have inner and outer cairn walls, as well as other traces of structural subdivisions within the cairn. In some instances there is a pairing of chambers entered from opposite sides of the cairn and set to either side of an axial line (*eg* Ty-isaf, Chambers I-II, Gwernvale, Chambers 2-3, and further excavation may also show this to be the case at Penywyrlod, Talgarth). Lateral, transepted, or T-shaped chambers are present at Pipton (Chamber I), Ty-isaf (Chamber III), and Gwernvale (Chambers 2-3). Simple rectangular chambers are found at Penywyrlod (Chambers NE I-III) and Ty-isaf (Chambers I and II). Of the excavated sites, only at Gwernvale is a polygonal form represented (Chamber 1), which interestingly, as in the case of the similarly shaped chamber at Arthur’s Stone, Dorstone (Hemp 1935b) and the transepted chambers at Ty-isaf (Chamber III) and Pipton (Chamber I), is sited at an oblique angle and orientated towards the forecourt. Some chambers, notably at Penywyrlod (Chamber NE II, and possibly the inner compart-

⁴ Though originally termed ‘Cotswold-Severn’, its reversal has been preferred throughout this volume, but without prejudice to the origin of the monumental form.

⁵ The modern placename is Ffostyll (*cf* Corcoran 1969), but the former spelling is retained here.

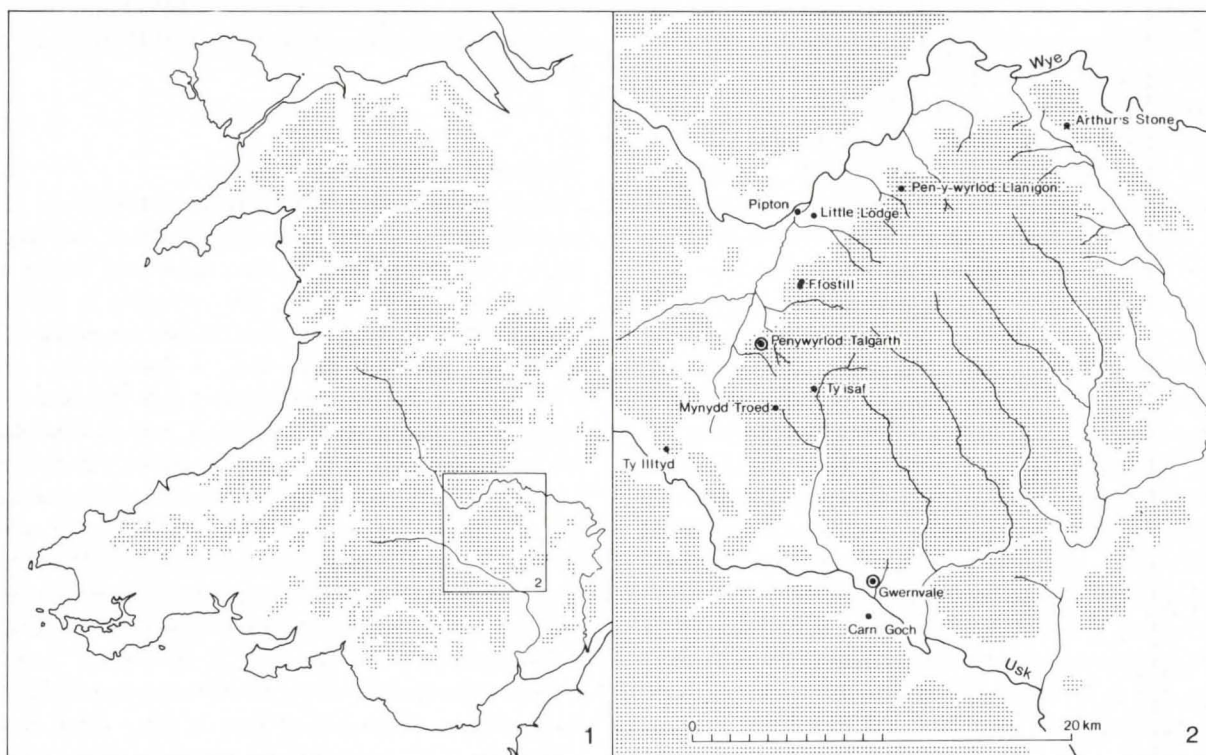


Fig. 1. Location and distribution of chambered long cairns within the area of the Black Mountains mentioned in the text. Land above 200 m shaded.

ment of NE I), Pipton (Chamber II), and possibly at Gwernvale (Chamber 4), appear to have been enclosed cists: but even these (with the probable exception of Pipton Chamber II), were possibly all provided with entrance passages. Some variation in the size and height of chambers within a single cairn is apparent. At each of the four main sites, with the exception of Ty-isaf, it seems probable that the chambers nearer to the forecourt were the most massive (Pipton, Chamber I; Pen-y-wyrlod, 'Main Chamber'; Gwernvale, Chamber 1), suggesting that in many cases the cairns decreased in height away from the forecourt. There is little consistency in the orientation of the cairns, however (p. 15).

Skeletal remains

Few chambers and their contents have remained intact until modern times, and whereas it is possible that some sites still remain to be discovered, and that individual chambers in some monuments are still untouched (as for example at Pen-y-wyrlod), it now seems improbable that full scientific study of the entire contents of all the chambers from a single tomb within this areas will ever be available for study. However, what evidence we have suggests that skeletal remains were deposited in an incomplete state or that parts were later selectively removed, and theories which attempt to explain the nature of these remains must inevitably work from partial evidence.

Looking again at the more fully investigated sites, it is possible to see that there may have been some variation in the function of different chambers within a single tomb. At Ty-isaf (Grimes 1939) the fragmentary and disarticulated remains of seventeen

individuals were found in Chamber I, placed in small groups against the sides and in angles and crevices between the orthostats. Chamber II, by contrast, contained the fragmentary remains of possibly only one individual, and with the articulated fragments of two individuals in the passage just outside the chamber entrance (the latter possibly the remains of the latest burials). Chamber III at this same site contained various small groups of bones representing five individuals, with the articulated fragments of four individuals coming from the passage (again suggesting that they may have been the last burials to be inserted). Chamber IV at Ty-isaf is not certainly contemporary with the rest of the construction: it was heavily disturbed and contained some cremated bone, probably of a later date. At Pipton (Savory 1956) four small groups of bone, representing disarticulated fragments of ?four individuals were found at various parts of Chamber I and its passage (but excluding the north transept), and within the enclosed cist (Chamber II) were the remains of seven individuals, again represented by disarticulated fragments arranged in groups. In some instances it was thought that groups of bone in each chamber at this site represented foundation deposits. Savory suggested that Chamber I at Pipton may even have been an unused 'dummy' chamber, or a place from which bones were transferred to Chamber II; those in Chamber II seemed to have been brought from elsewhere possibly on a single occasion—although the roof of the chamber may have been re-opened for successive burials.

Turning to the more recent excavations, of the four known chambers at Pen-y-wyrlod, the 'Main

Chamber' remains unexcavated and only partial excavation of Chamber NE III was possible under the circumstances. From the inner compartment of the largely destroyed Chamber NE I came only a few small scraps of bone (there possibly originally having been little more). From Chamber NE II came the fragmentary, disarticulated remains of a minimum of six individuals; fragments of two further individuals were found in the disturbed blocking of the 'dummy' entrance, although these bones may have got there more recently. From the partially excavated Chamber NE III came fragments of seven individuals, and the partial remains of two individuals came from various levels of the entrance blocking. At this site it appears that Chamber NE II (and possibly also the inner compartment of NE I) were completely sealed at the time when the tomb was first constructed, and it is argued that the remains here and possibly also those from the cist inserted in the revetment wall of the NE horn may have been foundation deposits of bone brought from elsewhere. The only other human remains from the site were several small skull fragments, some burnt, from near the portal within the forecourt, and it is suggested that a temporary timber mortuary structure from which bones were transferred to some of the chambers might possibly be represented by a posthole behind the Portal.

Remains from Gwernvale were very scanty; at least two individuals are represented by fragments from Chamber 1, and one by fragments from Chamber 2 (no remains being recovered from Chambers 3 and 4), but it remains uncertain whether or not skeletal material was ever more abundant. The only other human skeletal material from the site was fragments of human skull from one of the timber bedding-trenches overlain by the northern horn of the cairn. As a separate structure, the six-post arrangement within the forecourt here has parallels at sites in the earthen long barrow tradition—notably at Wayland's Smithy, which, it has been suggested, could have been an exposure platform for corpses whose bones were subsequently interred in a wooden chamber (Atkinson 1965, 130). But there is no certainty that the structure in the forecourt at Gwernvale can in fact be divorced from other elements of the timber structure beneath the northern horn of the cairn, which may be of a domestic nature.

Thus, at none of the sites are complete articulated burials known, and it has been suggested that small individual groups of bones may represent either foundation deposits in chambers which may or may not have been subsequently used, the disturbed remnants of successive burials which may originally have been deposited intact, or the successive or simultaneous burial of partial skeletal remains which had already become de-fleshed. Both sexes and a wide range of age-groups are represented. At some of the better-preserved sites (Ty-isaf, Chamber III; Pipton, Chamber I; Penwyrlod 'Main Chamber'), it appears that chambers were deliberately filled with

soil in the manner of the secondary filling of the transepted chambers at West Kennet (Piggott 1962, 68-71).

Finds from excavated sites

There is also some considerable variation in the number of finds from different chambers. At Pipton only a single unworked flint flake was found in Chamber I (Savory 1956, 22), whereas in Ty-isaf Chamber I were found two leaf-shaped arrowheads, a complete polished flint axe, a bone pin, and fragments of one pot. In Chamber II at the same site were large fragments of six vessels, and in Chamber II were fragments of four vessels. In the excavations at Penwyrlod, part of a leaf-shaped arrowhead was found within Chamber NE II and a flint knife came from the entrance passage of Chamber NE III. Of the large number of Neolithic finds from Gwernvale only a small proportion is considered to belong to a period contemporary with the use of the tomb, and it appears that finds from the chambers can probably be restricted to fragments of four or five vessels from Chamber 2. The pottery contemporary with the use of the tomb at Gwernvale, the large number of vessels of this phase from Ty-isaf, and the rim found outside the entrance to Chamber NE III at Penwyrlod, all most readily fall into the category of Abingdon Ware, which is generally dated to the earlier Neolithic period (Smith 1964, 108). Apart from the Beaker pottery and a fragment of a Bronze Age urn from Ty-isaf, all of which is probably intrusive (Grimes 1939, 135), the only other pottery of later style which is evident from the Black Mountains tombs consists of sherds belonging to the Peterborough/Ebbsfleet series from Gwernvale which it is argued were associated with the final blocking of the chambers. In terms of the relative chronology of different forms of tomb within the Severn-Cotswold group, it may be significant that later pottery of this kind has only been found in primary contexts within terminally-chambered transepted tombs in the Cotswolds (p. 110; Darvill 1982, 22-25).

Chronology

The recent excavations have for the first time provided some radiocarbon dating for the Brecknock tombs. Bones from Penwyrlod Chamber NE II have been dated to *c.* 3020 bc (p. 29), and the series of dates from Gwernvale would suggest that the tomb was built after a date of *c.* 3100 bc, and formally closed at about 2500 bc after some period of use (p. 142). The date from Penwyrlod is amongst the earliest so far obtained from stone-chambered long cairns in southern Britain and it is argued below (pp. 30, 144) that on present evidence there are now no substantial grounds for accepting the hypothesis that laterally-chambered tombs within the Severn-Cotswold group developed from terminally-chambered tombs (*pace* Grimes 1960, 90, for

example). Corcoran was amongst the first to seriously challenge this sequence (Corcoran 1969, 100), although that part of his thesis which attempts to support this by a reinterpretation of such sites as Ty-isaf and Pipton in the Brecknock group as multi-period constructions (Corcoran 1969, 86-87) is still regarded as contentious by the present writers, and finds no confirmation in the recent excavations. The possibility of multi-period construction was indeed entertained both by Grimes at Ty-isaf (Grimes 1939, 136-38; Grimes 1960, 81) and by Savory at Pipton (Savory 1956, 38), but on present evidence it is probably better to accept the excavators' considered views that the features suggesting more than one period of construction were simply a consequence of the method and order in which the monuments were built. Clearly, even greater caution is necessary in the attempted re-evaluation of sites such as Pen-y-wyrlod, Llanigon (Corcoran 1969, 43) where the excavation record is very much less complete, and where surface indications are poor. Indeed, the entire case for multi-period construction of tombs in the Severn-Cotswold tradition within the main area of their distribution remains unproven (Corcoran 1972, 61; Whittle 1977, 208-09). As we have seen above, the multiplicity of chambers within a single cairn (even ones of different form) should not be considered as a reliable guide to the existence of several periods, especially since there may have been functional differences between chambers in more or less contemporary use. This is reinforced at Pen-y-wyrlod, Talgarth, where Chamber NE II is regarded as containing a foundation deposit sealed at the time when the tomb was first built. Dr Savory stresses (p. 35) that is a complete misconception on Corcoran's part (1969, 92) to maintain that in this group of tombs the outer revetment wall was a later addition to the cairns. This is not to deny the evidence that alterations were made to the structure of the tombs during their use, but where this is well established this is not of the character envisaged by Corcoran.

Original form of the tombs

The discussion following the excavation of the Burn Ground long cairn (Grimes 1960, 75-101) remains one of the few concerted attempts to comprehend the nature and purpose of various elements in the design of Severn-Cotswold tombs. Its proposition of a unilinear developmental sequence, though cogently argued in functional rather than in purely typological terms, is now, however, brought into question by the available radiocarbon chronology, as we have seen above. The entire debate has also been broadened since that time to include a kaleidoscope of potential spheres of influence affecting the Severn-Cotswold group from both megalithic and non-megalithic traditions of Neolithic funerary architecture, both at home and abroad.

Re-opening a chapter which Grimes hoped once to

have closed (Grimes 1960, 96), it must be stressed that there is still far from universal agreement about such basic questions as the outward appearance of the tombs and arrangements made for access to chambers and forecourt. Important new evidence of these matters is presented in the following excavation reports of Pen-y-wyrlod and Gwernvale, although it must be admitted that there is no whole-hearted consensus of opinion even here. At each of the four major sites in the Black Mountains (fig. 2) the orthostatic elements of chamber and ante-chamber (or inner passage) are normally contained within the inner cairn and the inner cairn wall, and are joined by a walled outer passage leading to the outer cairn wall, which sometimes crosses without interruption across the passage. On the better-preserved sites, the outer passage (but not the inner part of the chamber proper) has normally been found to be blocked with stone. Often, the area outside the outer cairn wall is occupied by other masses of deliberately placed stone or 'extra-revetment'. This general pattern is repeated in other laterally-chambered and terminally-chambered tombs elsewhere in the Severn-Cotswold group, but there are only a handful of sites where past excavation or recording has provided adequate detail for debate.

Skeletal material is normally restricted to chamber and ante-chamber in the laterally-chambered tombs, and there is more or less general agreement that roofing was normally confined to this inner part of the structure—the outer walled passage having been unroofed. Disagreement has centred on the question of the function of the outer passage; the reasons why the outer cairn wall is on occasion found to continue across the outer end of this passage; and the nature, purpose, and dating of 'extra-revetment' material.

At Ty-isaf, Grimes has proposed that the outer cairn wall was unbroken across the entrance to each of the lateral chambers, to which access was gained *vertically* by means of an entrance shaft from the surface of the cairn effected by the periodic removal of some of the stone blocking the outer passage (Grimes 1960, 94). This interpretation envisages that all the cairn walls and 'extra-revetment' were contemporary; the inner cairn wall is assumed to be purely structural (revetment the core of the cairn), and arguments have been put forward to suggest that the outer cairn wall (built in a shallow trench, built leaning outwards and constructed at the same time as the 'extra-revetment' material) was part of the primary concealment and definition of the outer edge of a cairn which had sloping sides (Grimes 1960, 87-90). This theory would also maintain that the walling within the forecourt of laterally-chambered tombs was also non-functional, to the extent that it may have been hidden by forecourt blocking (more or less continuous with the 'extra-revetment' material around the sides of the cairn) ever since the original construction of the cairn (Grimes 1960, 92). Grimes noted exceptions to this pattern at Burn Ground—where he has suggested that access to the un-

usual lateral entrances was effected by the removal of 'entrance blocking' set against the line of the outer cairn wall and contained within 'extra-revetment' material (Grimes 1960, fig. 23)—and for example at West Tump, which has an 'open' or *horizontal* access represented by a break in the outer cairn wall opposite the chamber entrance (Grimes 1936, 96). Good supporting evidence for the general concept of vertical entry is provided by the remarkable steps leading down into the passages of the lateral chambers at Rodmarton (Clifford and Daniel 1940, fig 2). This same general interpretation was followed by Savory at Pipton (Savory 1956, 40-41), although it was noted that the overhanging nature of the outer cairn wall appeared to be due to the effects of lateral pressure from the cairn, and that there was a gap in

the outer cairn wall at the entrance to Chamber I (Savory 1956, 29, pl. VI, 2). In the case of Chamber II at Pipton we have already seen that there was a suggestion that subsequent entry to the cist may have been made vertically from the surface of the cairn by the removal of the original capstone (Savory 1956, 42).

In the present reports both excavators are in agreement that the outer cairn wall was not bedded in a slot sloping outwards, and that the tilting of the outer wall in some places was probably due to outward pressure (pp. 23, 62). At Penywyrlod the use of orthostats in the outer passages of Chambers NE I and NE II is somewhat unusual, but in each case the outer cairn wall appears to have passed without interruption across the passages. Penywyrlod

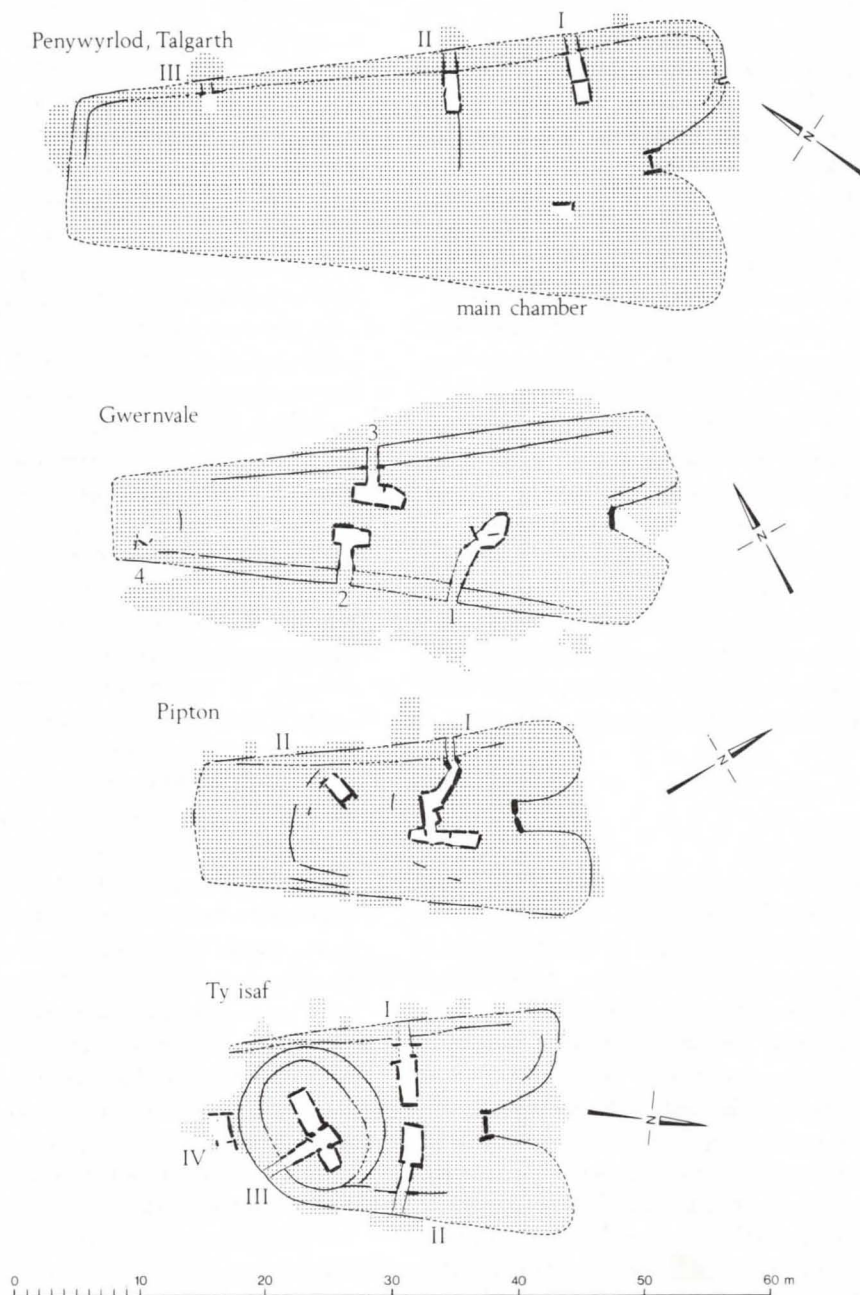


Fig. 2. Four major excavated chambered long cairns in the Brecknock group, showing approximate extent of recorded 'extra-revetment' material.

is again unusual because there are suggestions that the inner part of the outer passage may have been corbelled, and because of the fact that animal bone was found in the blocking material here, and animal and human bone in the blocking material in the outer passage of Chamber NE III. At this site it is argued that periodic access to all the lateral chambers (or at least to the ante-chamber in the case of the closed Chamber NE II) could have been made by removing external blocking normally left in position against the outer wall and by lifting away the upper courses of the blocking on the line of the outer cairn wall opposite the entrance passage. Because of recent disturbance around much of the northern side of the cairn no very firm conclusion is drawn here as to whether the entire circumference of the cairn was originally concealed by blocking material or 'extra-revetment', or whether parts of the outer walls of the cairn were originally left exposed. The remarkable 'buttress pit', however, found at the tail of the cairn seems to have been added at some time after the initial construction of the cairn in order to support part of the outer cairn wall that was in imminent danger of collapse (p. 34) and there is a possibility that the forecourt was not finally blocked until part of the revetment wall of the SE horn had fallen outwards (p. 34).

At Gwernvale Britnell argues that the outer cairn wall would have been visible throughout the functional life of the cairn and that those parts of the wall opposite the ends of the outer passages to the

chambers, and the blocking material behind it as far as the inner cairn wall, were periodically removed in order to gain horizontal entry to the chambers. At this site it is also argued that the 'extra-revetment' or cairn blocking—though again a deliberate construction—was only put in place when the entire tomb was formally closed. Perhaps immediately before this took place, various small pits were dug at several points around the cairn, possibly to provide soil used in chamber or passage blockings. It is suggested that these final acts, as well as sealing the entire cairn, may have been a deliberate attempt to produce a decayed-looking structure (p. 150; *cf* Darvill 1982, 62). If this was indeed the case, it is possible that other tombs in the Severn-Cotswold group were initially constructed in this way (in a manner similar to that envisaged by Grimes) and just as some trapezoidal earthen long barrows had vertical sides and others evidently had sloping sides (p. 150).

Looking to the future, it is clear that there are still many fundamental questions which require further study, regarding the distribution, dating, morphology, and function of the tombs in the Black Mountains. Furthermore, the local contemporary society which constructed these monuments—its origins, development, organization, and economic basis—have still barely been considered in any detail. Current research is only just beginning to embrace some of these problems, and there is clearly still tremendous scope for future studies by various different disciplines.

PART 2

**The Penywyrldod Long Cairn,
Talgarth, Brecknock**

by H. N. Savory

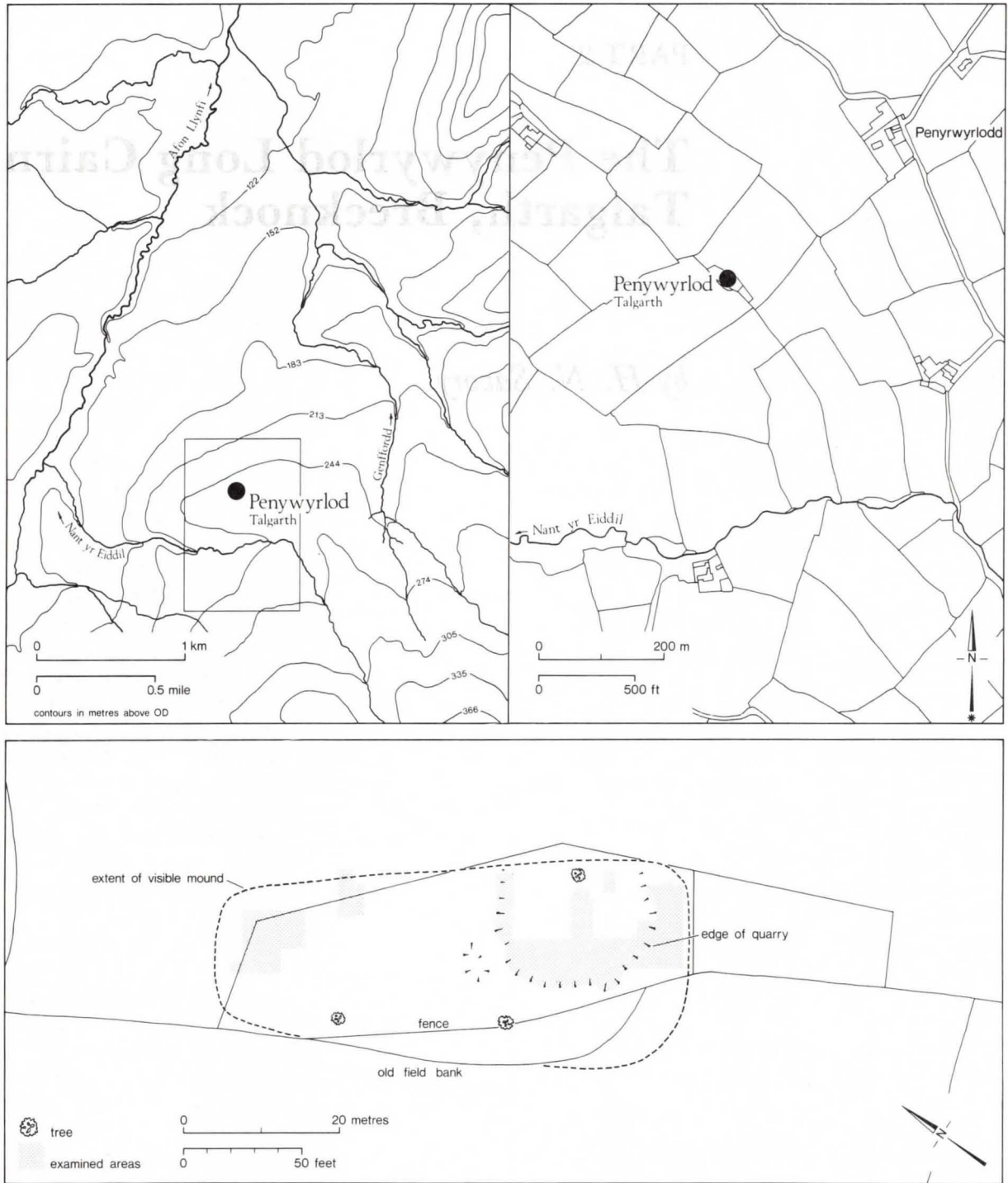


Fig. 3. Site location.

Introduction

The largest Neolithic chambered long cairn to survive in the area of the Black Mountains (or, indeed, probably, Wales) remained unknown to archaeologists until 27 June 1972, when the writer received a telephone call at the National Museum of Wales from Mr Percy P. Griffiths, farmer at *Penywyrlodd*,¹ Talgarth, notifying him of a discovery of human remains in a stony mound from which material was being removed for hard-standing in the farm-yard. A visit the following day revealed that extensive damage had already been done to an exceptionally large ovoid cairn which had apparently never been recorded either by the Ordnance Survey or by any of the field archaeologists who have studied the prehistoric sites of the neighbourhood. Thus was set in train the process whereby the writer came to undertake a partial excavation on behalf of the Department of the Environment the following September, with a view to making a record of the features that had been exposed and removing deposits which had been disturbed. Immediately afterwards the site was scheduled as an Ancient Monument and a strong fence was constructed by the Department to protect it from further damage. In 1982 the Department was at last successful in negotiating a Guardianship Agreement which will secure for the public reasonable access to this important site. It had already been decided by the Ancient Monuments Board (Wales) that the unique nature of the cairn, with its structural features (apart from the farmer's quarry) exceptionally well preserved and the probability of more than one chamber with intact deposits, justified its preservation without further excavation, well beyond the present century; there seems, in any case, to be little likelihood of any threat to this site other than agricultural activity.

Since the publication of the writer's preliminary account (Savory 1973)² it has regrettably been necessary to delay publication of a full account, not only while awaiting specialists' reports but owing to the familiar difficulty of finding a suitable niche for a report of this nature, now resolved by the generous

support given by the Department of the Environment and the Welsh Office to the new Cambrians' Monograph series. At the outset, the writer must acknowledge the help he has received from many quarters. First of all, the co-operation and forbearance of the farmer, Mr P. P. Griffiths, and his family, must be recognized: without it a site of fundamental importance for megalithic studies in Wales might in due course have been entirely destroyed without proper record, as others in the district undoubtedly have been in the past; it may be remembered, too, that nothing either in local tradition or on official maps would have led a farmer to suppose that the mound from which he wished to draw stone was anything but a natural feature—a glacial deposit perhaps—covered with trees and bushes (pls. 1*a* and *b*). The writer, therefore, wishes to take this opportunity to thank Mr Griffiths and his family for the facilities extended to him during visits which necessarily led to an inexpensive source of stone being placed finally out of bounds. Next, he must thank Dr Michael Apted, F.S.A., then Chief Inspector of Ancient Monuments in Wales, and his staff, for arranging for the site to be scheduled on an emergency basis and for inviting him to conduct a small-scale emergency excavation there, and acknowledge the help of Dr A. H. A. Hogg, F.S.A., then Secretary of the Royal Commission on Ancient Monuments (Wales), and his staff, for help in various matters.

The rescue excavation was carried out between 4 September and 23 September by a small team consisting of the writer, Mr Blaise Vyner (now County Archaeologist, Cleveland) as site supervisor, Miss Rosemary Luff, Miss A. Peirson-Jones, and Messrs Kenneth Brassil, George Evans, D. Thomas and M. Waterhouse. Occasional help was received from friends and colleagues: Mr Cefni Barnett, Curator of Newport (Gwent) Museum, G. C. Boon, now Keeper of Archaeology in the National Museum of Wales, Mr Allan Probert of Abergavenny, Dr and Mrs Stan Stanford of Luston, Hereford, and Dr D. P. Webley. Some boys and girls of Brecon High

¹ This form is used locally, apparently in order to distinguish the farm from others of the same name in the district (one of which has already given its name to a megalithic tomb); but as it results

from the decay of Welsh-speaking in this part of the Marches it has not otherwise been used in this report.

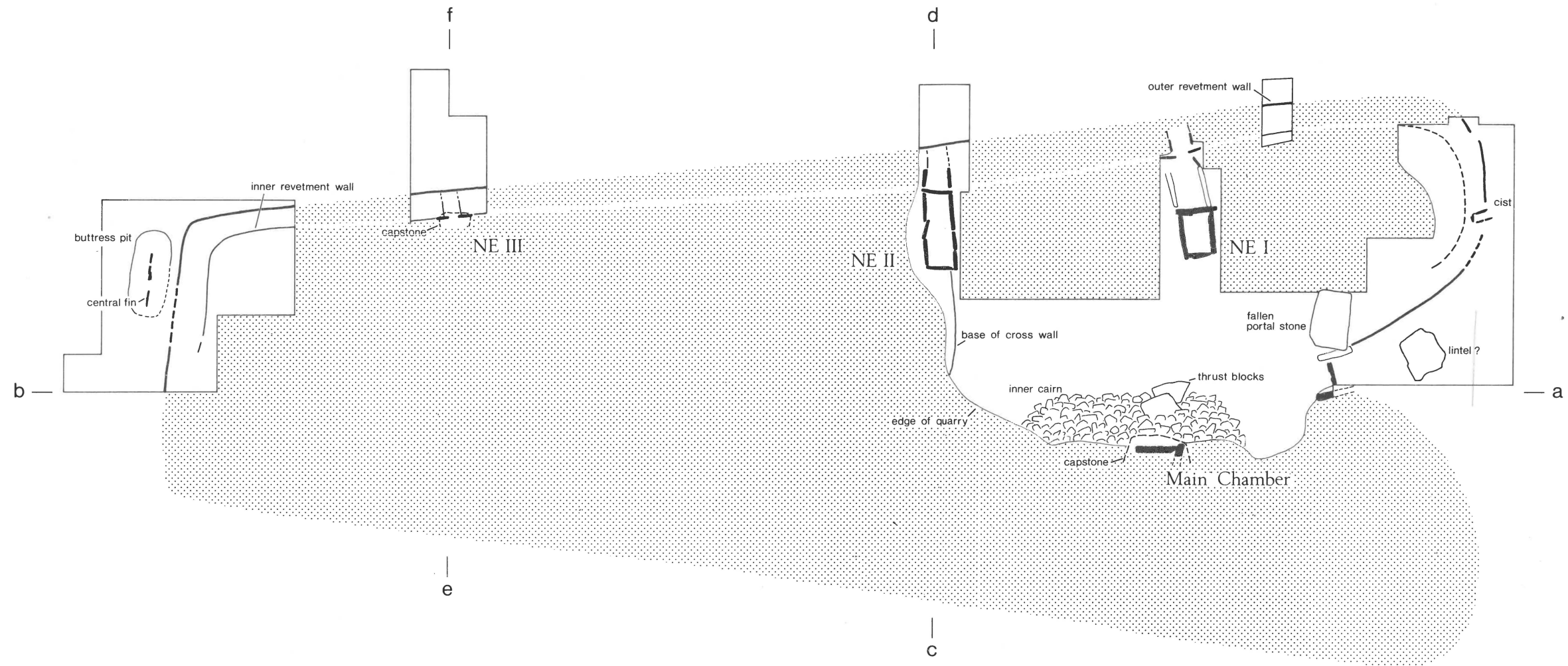
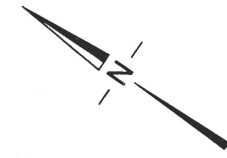
² See also *Current Archaeology*, V (1975), 121-22.

School also helped. It will be seen, moreover, that I am indebted to Dr D. R. Brothwell, Miss R. M. Luff and Mr T. P. O'Connor for reports on human and animal remains appended to this report (pp. 36-39)

and to Professor J. V. S. Megaw for a note on the 'flute' made from a sheep's tibia, from Chamber NE III (pp. 27-28).

PENYWYRLOD LONG CAIRN

TALGARTH · POWYS



— orthostat socket
... conjectural outline of cairn

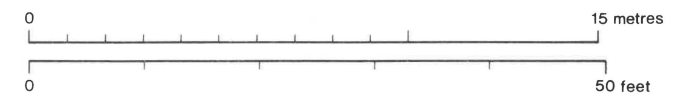


Fig. 4

CHAPTER I

Description

The Site and its Setting

The long cairn which is the subject of this report is not the only one to bear the name *Pen-y-wyrlod*: the small chambered cairn at Pen-y-wyrlod, Llanigon, Brecknock, has long been known (Morgan and Marshall 1921). In fact the frequency of farms bearing this name in Wales simply reflects the frequency with which Welsh upland farms occupy the position which the name denotes—'the top of the hay-field', *ie* on the boundary of the better and poorer quality pastures. Mr Griffiths' farm (already marked 'Penyrwyrlodd' on the Ordnance Survey 2nd Edition 6 in map of 1905) lies at a height of 240 m, about 1200 m ESE of Trefecca in Talgarth parish. The long cairn lies at SO 151316, 400 m SW of the farm, north of the crest of a ridge separating the Genffordd and the Nant yr Eiddil—two small streams which feed the Llynfi (fig. 3). Lying at 260 m above sea-level it has a typical position for Black Mountains long cairns, fairly high up in the foot-hills, in comparable positions, close to what is now good agricultural land, as is the case with Ty-isaf (Talgarth), Ffostill North and South, Arthur's Stone (Dorstone), Pen-y-wyrlod (Llanigon), Ty Illtyd (Llanhamlach), and Pipton. Contrasting locations, like those of the Mynydd Troed cairn (Sorgwm)—at a much greater height, on the col between Mynydd Troed and Mynydd Llangorse, or near a main valley floor, as at Gwernvale, Crickhowell—are rarer, although in the latter case Dr Roese has indicated that sites may have suffered a much more severe destruction (Roese 1979, 133).

What distinguishes Penywyrlod (Talgarth) from other Black Mountains long cairns more than anything else is, as already indicated, its great size. That it should, none the less, have escaped notice of field archaeologists for so long must be due to its secluded position well away from any road, against a field boundary, and its camouflage of trees and bushes, which has no doubt protected it from detection by archaeologists (including the writer) who have scanned the air-photographs of this area which have been taken since the war—notably the vertical and relatively small-scale photographs taken by the R.A.F. soon after World War II. That the Ordnance Survey maps should have marked the site as a small copse no doubt contributed to the neglect which was undoubtedly helped by the size of the mound and the fact that until very recently none of its megalithic

features was clearly visible. The length of the mound, before its revetment walls were exposed, was 60 m, its greatest width 25 m, and its greatest height 3 m. This contrasts with a general run of dimensions among Black Mountains long cairns (where those dimensions can be reasonably well fixed) of between a third and two-thirds the length: thus, Pipton was 37 by 21 m before, and 32 by 19 m after excavation and 2 m high (Savory 1956); Ty-isaf was 35 by 16 m before, and 32 by 18 m after excavation (Grimes 1939); Pen-y-wyrlod (Llanigon) was 15 by 9 m (Morgan and Marshall 1921); Ffostill North was 40 by 21 m, and Ffostill South 36 by 22 m (Vulliamy 1921 and 1923); Ty Illtyd was 22 by 13 m (Crawford 1925, 63-65); Mynydd Troed (Sorgwm) was 28 by 16 m (Crampton and Webley 1966). The orientation with the broad end to the SE (see plan on fig. 2), though found at Gwernvale, is not typical of the Black Mountains Group, for where this has been clear hitherto, it has lain to NNW (Ty-isaf), to N (Ty Illtyd), to NE (Ffostill South and Pipton), to ENE (Pen-y-wyrlod, Llanigon) or to E (Ffostill North).

At the time of my first visit, in June 1972, Penywyrlod (Talgarth) had had part of its internal structures exposed, and part, as later became known, destroyed, by the farmer's removal of the material for farm purposes. Most of the material had come from an excavation which had been driven in from a point near the SE end of the NE side of the cairn in such a way as to isolate a small area on its SE slope on which a tree stood (pl. 1c) and to pass the longitudinal axis of the cairn. Round the irregular sides of this excavation could be seen, to the NW, the NW orthostats of a partially wrecked lateral chamber (NE II), above which the body of the cairn still rose to nearly 2 m (pl. 3c and fig. 4); to the SW, barely 1 m below the top of the cairn near its highest part, the eastern weathered edge of a massive capstone (pl. 5a) which evidently represented a much larger and higher chamber (afterwards referred to as the 'Main Chamber', p. 16), the side of which was covered by a sloping heap of piled stones, larger than those which formed the main mass of the cairn, so that it was at first feared that part of this chamber had already been destroyed; to the SE, two massive stone slabs could be seen, one to the SW which was still erect and partially embedded in the cairn, and the other, to the NE, lying on its side and partially covered by collapsed

cairn material (pl. 2a). In view of their position, near the broad end of the cairn, it was realized at once that these might represent a dummy portal of the type common in the Severn-Cotswold group; finally, to the E, what appeared to be a small damaged cist, with two side slabs still upright, backed against dry-stone walling, protruded from under the roots of the tree already mentioned (fig. 4, pl. 6a).

When first examined, the floor of the farmer's excavation appeared to be close to the original surface on which the cairn had been built; inspection of its sloping sides showed that it had been built entirely of slabs, mostly small, of local sandstone, with larger pieces predominating lower down and smaller ones above, but with a topmost casing *c.* 0.4 m thick in which alone there was a substantial component of earth (fig. 7). The rest of the cairn outside the farmer's excavation had apparently escaped disturbance until then, apart from a small pit *c.* 0.6 m deep, on the main axis of the cairn NW of the farmer's excavation which appeared to be less recent and some similar disturbance near the NW tail of the mound (fig. 3). In between June and September 1972, further scraping by the farmer along the NE side of the cairn unfortunately disturbed the entrance, which had previously been hidden, of another lateral chamber, NE III.

The excavation of September 1972 had only limited objectives, as agreed with the Department of the Environment: the examination and record of areas already disturbed by the farmer and the preparation of a general plan of the site, pending its effective preservation. This involved the complete clearance of the badly disturbed Chamber NE II and the stripping of the major part of the floor of the farmer's excavation so as to verify the state of preservation of the Main Chamber, the nature of the Portal and that of the small cist, which in fact proved to be the entrance passage of a largely destroyed lateral chamber, NE I (fig. 5, pl. 6b). It was necessary, too, to record as far as possible the entrance of NE III and remove as much of its contents as were exposed. It was also thought desirable to trace the outer revetment wall round the SE horn enough to establish the location of the forecourt, and round the NE corner far enough to establish the structure of the tail of the cairn, and this led to interesting discoveries bearing on the forecourt ritual and the nature of the 'extra-revetment' material.

THE MAIN CHAMBER

(fig. 4, pl. 5a-d)

Clearance of the looser part of the heap left by the farmer on the SW side of his excavation (pl. 5a) fortunately showed that this was not the wreck of a chamber but an inner cairn built to secure in position the uprights of a large chamber, the tops of two of

which, set almost at right-angles to each other, emerged from the top of the cairn (fig. 4, pl. 5d). Some of the weathered sandstone blocks and slabs near the base of the cairn were much larger than usual and in some cases had clearly been placed with an inwards tilt so as to serve as thrust-blocks preventing an outwards spread of the mass of materials in the inner cairn; their size and tight bedding under the inner cairn had enabled them to resist the farmer's quarrying and so protect the chamber itself. At this point it should be explained that all the larger stone slabs used for the construction of the chambers at Penywyrlod are of local sandstone, like the smaller material used to construct the cairn itself; my former colleague, Mr Emlyn Evans, of the Department of Geology in the National Museum of Wales, assured me during a visit to the site that all the stones used there, including occasional blocks of 'cornstone' and conglomerate, belong to the local Old Red Sandstone Measures and could have been collected from the surface or quarried from outcrops nearby: in fact an old stone-pit can be seen in a copse about 200 m to the south.

When the top of the inner cairn had been cleared it was possible to peer, with the help of a torch, some way into the interior of the chamber through the small triangular aperture at its SE corner which is visible on plate 5d, and it could be seen that the interior was evenly filled with earth covered with a thin layer of sandstone chips to within a few inches of the under surface of the capstone throughout, in a manner which suggested deliberate filling at some time, rather than the gradual working of the upper cairn material through apertures in the sides of the chamber near the tops of the orthostats. No orthostat was visible near the northern edge of the capstone and it is uncertain whether this was due to the existence at this point of a NW orthostat set at an angle, with an even upper surface, or the tilting inwards of an orthostat in line with the NE one visible in photographs. As it was not desired to extend the farmer's excavation further SW at this point, already beyond the longitudinal axis of the cairn, it was not possible to pursue any further the question as to whether the Main Chamber has the same simple plan as the lateral chambers NE I-III, or is a variant of the transepted type, like the main chambers at Pipton or Ty-isaf.

LATERAL CHAMBER NE I

(fig. 5, pl. 6a-c)

In June 1972 only the entrance passage of this almost totally destroyed chamber was visible (pl. 6a), represented by the upper parts of two thin upright slabs, parallel and 0.9 m apart, overshadowed by the roots of a tree which had been undermined by the farmer's excavation. The filling between the slabs

PENYWYRLOD

LATERAL CHAMBER NE I

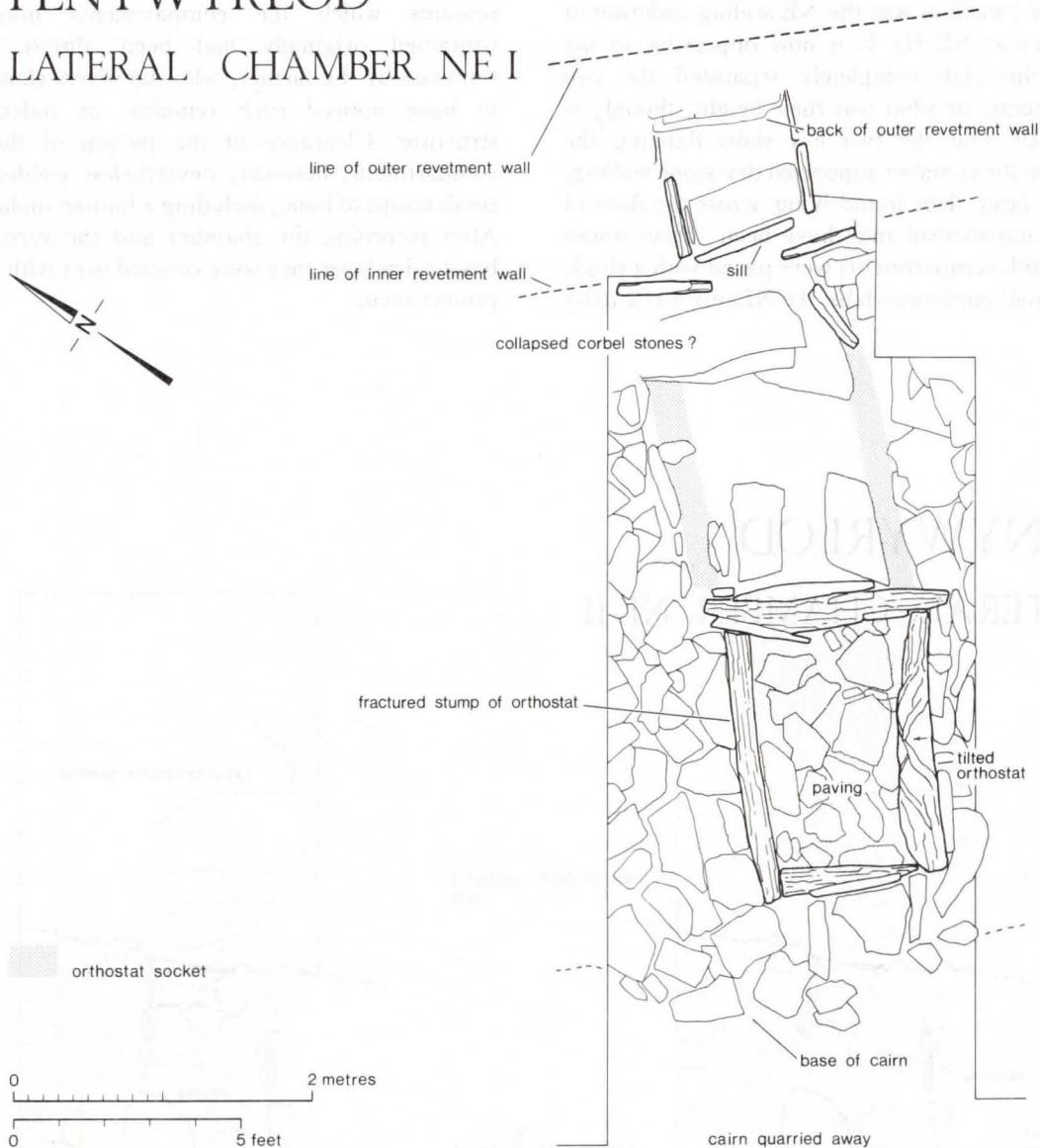


Fig. 5

was a dark earth which contained nothing of archaeological interest and was probably of recent origin but beneath it was a floor-slab which filled the space between the upright slabs, which proved to form the inner part of the entrance passage (pl. 6*b*) and were 0.8 m (NW) and 0.9 m (SE) long respectively. At the NE end of the passage the orthostats were replaced by short stretches of dry-stone walling which abutted on the back of the outer revetment wall, here apparently unbroken. It was not, however, possible to examine the outer face of this revetment wall at this point, because it would have been necessary to remove the large tree already mentioned—a task beyond the manpower and time available for this small-scale excavation. At the SW end of the passage, 0.9 m from the back of the revetment wall, the large floor-slab already described abutted on a low sill-stone of almost the same length, beyond which, to the SW, were two thin, upright

transverse slabs, much lower than the entrance passage orthostats, which formed an entrance gap 0.6 m wide, leading into the wrecked chamber: the NW one was extensively encrusted on the SW face with calcite, presumably representing the seepage of water from the surface of the cairn, through gaps in the roofing of the chamber, down to the time of the destruction of the chamber by the farmer. The former existence of this chamber was revealed by clearance of a thin layer of earth and stone on the floor of the area cleared by the farmer down to the level of the surviving cairn-slabs, resting directly on the red clay at the top of the local subsoil.

The chamber NE I consisted of two compartments, each flanked by large orthostat slabs, represented by shallow sockets in the case of the NE compartment and shattered stumps in that of the SW one; the slab which had separated the two compartments was also represented by a shattered stump held in position by

a single block on the NE side and three small blocks on the SW (much as was the NE sealing orthostat of the ossuary at NE II). It is now impossible to say whether this slab completely separated the two compartments, or what was their height, though it seems likely that the two low slabs flanking the entrance to the chamber supported dry-stone walling, and some large slabs found lying across the floor of the NE compartment may have been corbel stones (pl. 6c). Both compartments were paved with a single layer of small sandstone slabs; the NE one was 2 m by

1.2 m, the SW one 1 m by 1.1 m. Any human remains which the compartments may have contained originally had been almost entirely removed by the farmer, who, however, claimed not to have noticed such remains, or indeed, any structure. Clearance of the paving of the inner compartment, however, nevertheless yielded a few small scraps of bone, including a human molar tooth. After recording the chamber and the surrounding basal cairn layer they were covered over with earth to protect them.

PENYWYRLOD

LATERAL CHAMBER NE II

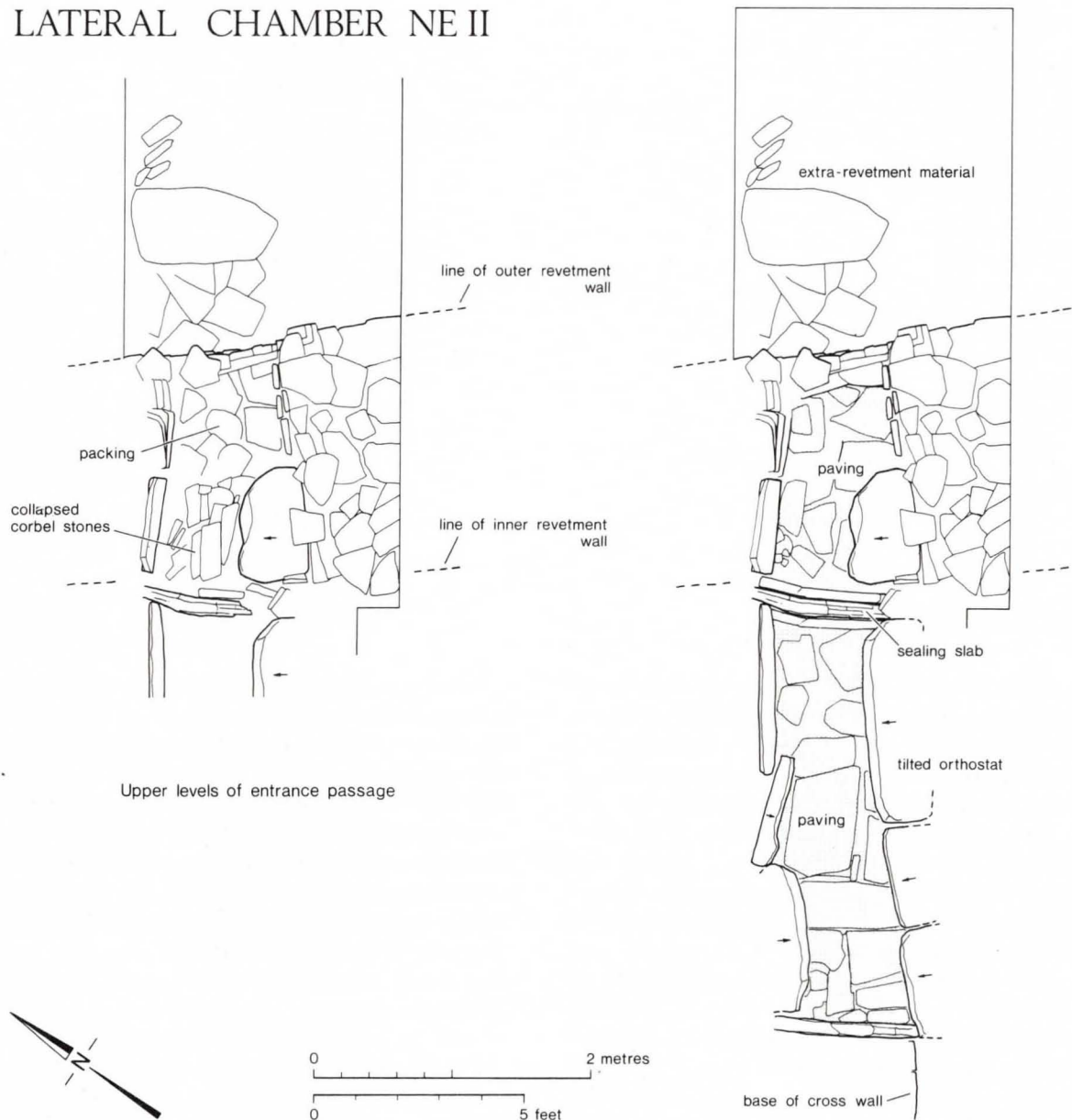


Fig. 6

LATERAL CHAMBER NE II

(figs. 6, 7, pls. 7-8)

When first seen in June 1972 the chamber itself had been totally exposed as far as the line of the inner revetment wall and badly damaged by the farmer's excavation (pl. 7a). The cover-slabs had been removed—a large slab lying in a small stone-pit in the corner of the same field as the cairn, which the farmer pointed out was probably one of them—and the shallowly-bedded orthostats of the SE side of the chamber had been pushed inwards (pl. 7c). These had evidently carried the dry-stone corbelling like that partially preserved on the NW side (pl. 7c), although on this side too the orthostats nearest the SW end of the chamber had also been thrust inwards by the weight of the cairn material which pressed down on them. The tops of the orthostats on the NW side were about 1 m high above their sockets—lower than the end slabs of the chamber—but had carried a great deal of dry-stone corbelling which was still relatively well preserved near the N corner of the chamber (pl. 8a). The SW end slab of the chamber, rising to 1.1 m above its socket, was well preserved, but the NE end slab, made of a friable sandstone which had split into several vertical layers as a result of water that had seeped down through the cairn freezing in winter, had had a large portion broken off near the top at the SE end by the farmer's quarrying activities. Its NW end, however, still rose to its full height of 1.3 m above its socket and carried a corbel slab (pl. 8a), which suggests that the roof cannot have been much higher, even though it may still have been about 0.2 m higher at the NE end than at the SW end of the chamber. This would mean that the chamber was virtually a closed cist—as its contents indeed would suggest, for there was no evidence of successive burial in the chamber.

The length of the chamber internally would have been 3 m and the breadth about 1 m. The contents had naturally been badly disturbed, but it was clear that it had been an ossuary containing a considerable quantity of disarticulated bones. The main part of a complete human skull (an adult male) was found at a high level near the NE end of the chamber, while the mandible was lying at about the same level near the middle and a fragment of the back of the skull lay near the SW end. According to the farmer, the complete skull had originally been lying at the NE end and another skull was lying lower down near the N corner. Other more fragmentary crania were later found near the SW end. What could be seen *in situ* in June 1972 was clearly a charnel deposit with long bones piled chiefly against the foot of the side walls, especially along the NW side and towards the SW end, usually lengthwise, as can be seen in the photograph, taken when the deposits had already been partially cleared, leaving only those which were certainly in their original position (pl. 7b). This photograph also reveals the irregular paving of the floor, with overlapping slabs. At this stage no grave

goods had been found, but when the deposits had been cleared and the upper floor-slabs lifted (they were two or three deep) more fragmentary bones and the tip of a flint arrowhead (fig. 10, no. 1) were found. The latter had probably been associated with the bones before they were re-deposited in the chamber and had perhaps been broken at this time; no evidence came to light while studying the bones that the arrow had actually been lying in a wound. The bones found in the chamber, studied by R. M. Luff (Appendix, p. 36), were all human except for the phalanx of a wild pony found on the floor at the N corner—a position which it is not likely to have reached in modern times. Small flecks of charcoal were found in clay between two superimposed floor slabs at the W corner of the chamber and some burnt fragments of human skull were found on the floor at the N corner of the chamber.

In September 1972 the relationship of this apparently closed chamber to the revetment walls of the cairn, which it evidently adjoined, was examined by means of a section carried inwards from outside the foot of the cairn (pl. 7a). It then became clear that the walls of the chamber had been continued NE on the same line beyond the NE sealing slab of the chamber, which had been gripped on either side of its base by two low slabs (pl. 7c.) in the same way as the orthostat separating the two compartments of Chamber NE I (p. 17). The walls formed a 'dummy' entrance-passage between the inner and outer revetment wall, which was carried past it without interruption (pl. 7c), as in the case of the entrance passage of NE I. This entrance passage was paved in much the same way as the chamber, and at the same level, but was somewhat perfunctorily constructed, in that while the SW end of the NW wall was formed of an orthostat 0.9 m high, shallowly bedded in the same way as those of the chamber, and carrying several courses of dry-stone walling on which part of the corbel slab above the NE sealing slab of the chamber rested (pl. 8a), its NE end was lined with rather poor quality dry-stone walling. The SE wall had evidently not been completed until several layers of medium-sized slabs had been placed on the NE part of the paving; the NE end of the SE side of the passage was formed of three small, thin slabs which stood on top of the blocking just referred to, and not on the floor-slabs (pl. 8b). The inner orthostat on the SE side of the passage, on the other hand, was properly bedded but had been pushed inwards by the weight of the cairn, causing the fall of several long, rectangular-section blocks which lay longitudinally in the passage and were probably corbel stones (fig. 6). Below these stones, scattered at various levels in the compact filling of the blocking slabs already mentioned, various fragmentary bones were found, all of them animal (two small fragments of human bone found on the surface of this blocking in September had probably got there during the farmer's excavations). The animal bones included (p. 38) those of a calf and sheep and part of the

jawbone of a young fox. A calf's rib occurred at a high level, a calf's foot bone (phalanx) lower down near the S corner of the passage, and the fox bone lay only 60-70 mm above the floor. In view of the compact nature of the stony filling it is hardly likely that this last can represent an animal which crept in in recent times. These animal bones must relate to a deliberate filling of the entrance passage which for some ritual reason was part of the process of its construction. This appears to be confirmed by the fact that two more fragments of bone were found on top of the bottom four courses of well-built dry-stone walling forming part of the outer revetment wall opposite the entrance passage at the level of the top of the horizontal blocking slabs already mentioned and lying under several courses of poorly built dry-stone walling which seem to represent a late stage of development of the 'dummy' entrance passage, after it had already been partially blocked, though the outer side-slabs on the SE side of the passage may have been placed in position at the same time. The paving slabs of the entrance passage were at the same level as the bottom course of the outer revetment wall and could have been laid at the same time. Possible interpretations of these curious phenomena are discussed below (p. 35).

LATERAL CHAMBER NE III

(figs. 4, 7, pl. 9a-c)

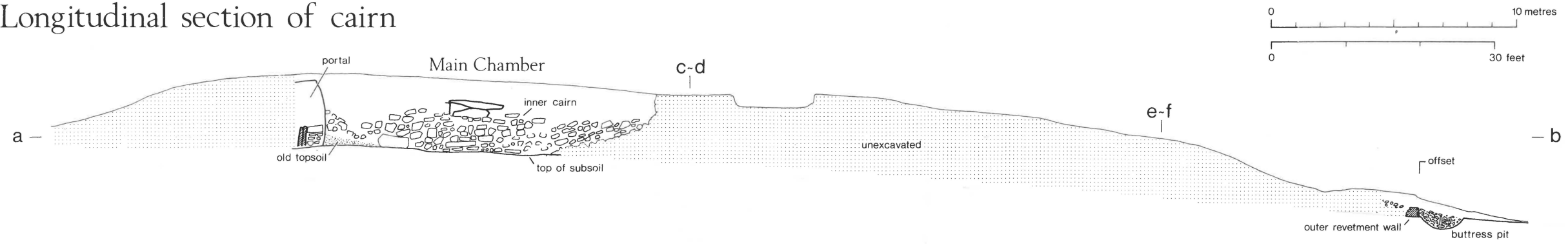
When excavations began in September 1972 the entrance of this chamber was already clearly visible, 10 m SE from the N corner of the outer revetment wall of the cairn. At this time the outermost cover-slab could be seen, resting on two transverse orthostats, the tops of which, separated by an entrance gap barely 0.3 m wide, emerged from a heap of small stones which had probably fallen down from the upper part of the cairn as a result of a recent assault by the farmer, who had turned elsewhere from his main quarry since our visit in June. The fallen stones formed a broad apron extending far out from the entrance gap. When this had been cleared away the remains of a short entrance passage, 0.7 m wide, formed entirely of dry-stone walling was revealed (pl. 9a). This passage, like those of NE I and II, filled the space, 1 m wide, between the inner and outer revetment wall, but the latter had been constructed to a height of at least 0.3 m and seven or eight courses, without interruption across the mouth of the passage, as in NE II and, like NE II, with the upper two or three courses projecting somewhat irregularly, as though they were of a separate build. The chamber itself, however, had a narrow functional entrance like NE I. It was, unfortunately, impossible to judge from what remained how high the entrance passage had originally been—it survived to within 0.16 m of the surface of the cover-slab at the inner end of the SE side of the passage—or how any sealing of the mouth

of the entrance passage may have been constructed. If, as may be suspected (see p. 23), the outer revetment wall had not been very much higher when constructed, it is possible that the entrance passage had been covered by a single capstone, at a somewhat lower level than the outermost capstone of the chamber, that this could have been raised to gain access to the chamber, and that the whole was masked by 'extra-revetment' material. The farmer, however, had apparently not noticed any large stone while scraping the lower slopes of the cairn and the blocking may have been effected entirely by 'extra-revetment' material.

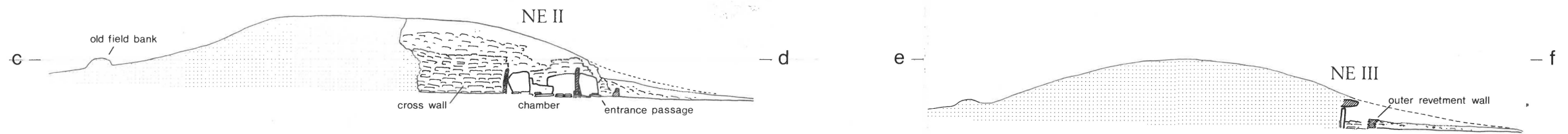
When the loose material above the entrance passage had been cleared, bones began to appear close to the top of the relatively well-preserved dry-stone walling of the SE side of the entrance passage, intermingled with small blocking slabs as in the dummy entrance passage of Chamber NE II, and more were found mixed with blocking material lower down; at the bottom of the passage, paving like that in NE II was reached, at a somewhat higher level than the base of the revetment wall where it passed the entrance passage. It did not prove possible to penetrate very far into the chamber itself because of the narrowness of the entrance gap, which was enhanced by a second transverse slab projecting from behind the first on the SE side of the entrance (pl. 9b) and by the fact that the first side-slab of the chamber itself, on the SE side, had been tilted inwards by the pressure of the cairn above it, as the photograph shows. The same view shows a layer of stone slabs, without earth, at least 0.3 m thick, which passes over the capstone at the entrance of the chamber and is itself covered by the outer cairn casing of earth and small stones. It would have been necessary to remove a very large area of this cairn material in order to establish a plan of the chamber and to explore its contents, and this was clearly outside the scope of our excavation. The most that could be done after clearing the entrance passage, was to remove the bones that could be seen just inside the entrance to the chamber, some of them high up close to the top of the tilted orthostat already mentioned, others lower down in a loose stony filling. It was noticed that the bones, all of them disarticulated, were in a good condition when they came from the higher levels, while those from the bottom, on the paved floor of the chamber, were in a poor condition owing to damp. The great majority of the bones collected from the entrance passage and the accessible part of the chamber were human and represented at least seven individuals (p. 37), but animal bones were also present, mainly in the entrance passage, as in the case of NE II. They included bones of red deer from the entrance passage, and a pig's molar tooth from inside the chamber (p. 38). Part of a sheep's long bone which had artificial perforations and may be the remains of a primitive wind instrument was also found here (p. 27). The only other artefact to be encountered was a flint knife (fig. 10, no. 3) which

PENYWYRLOD

Longitudinal section of cairn



Lateral sections



Elevation of cross wall and Chamber NE II

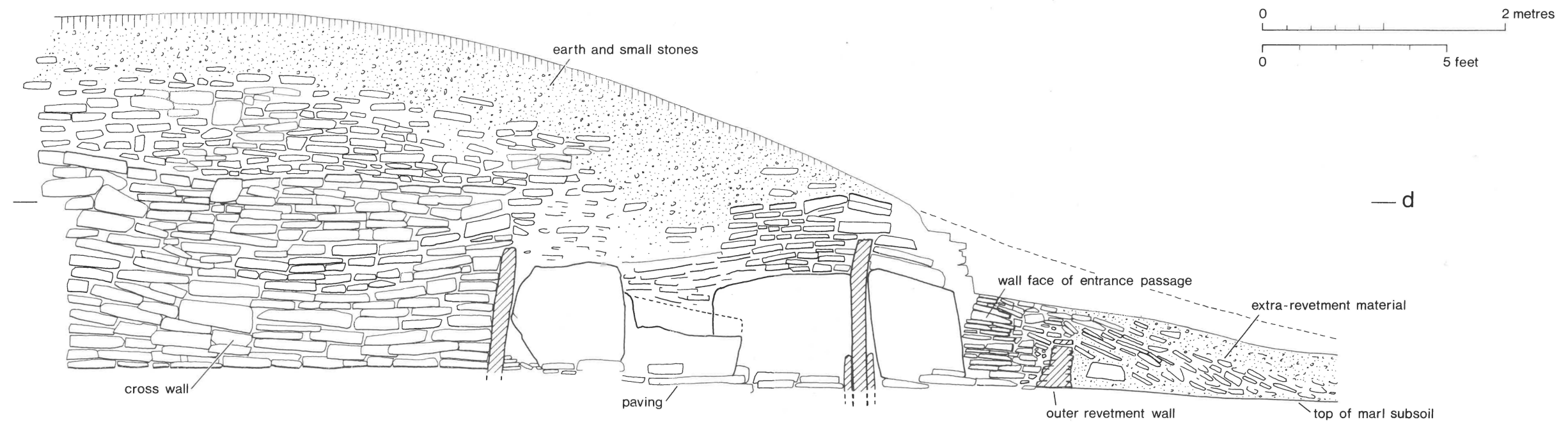
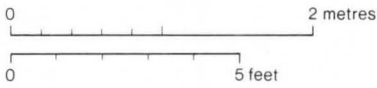
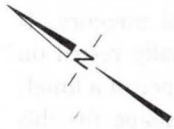


Fig. 7

PENYWYRLOD

PORTAL AND SOUTH-EAST HORN



- orthostat socket
- hollow with dark earth and charcoal flecks

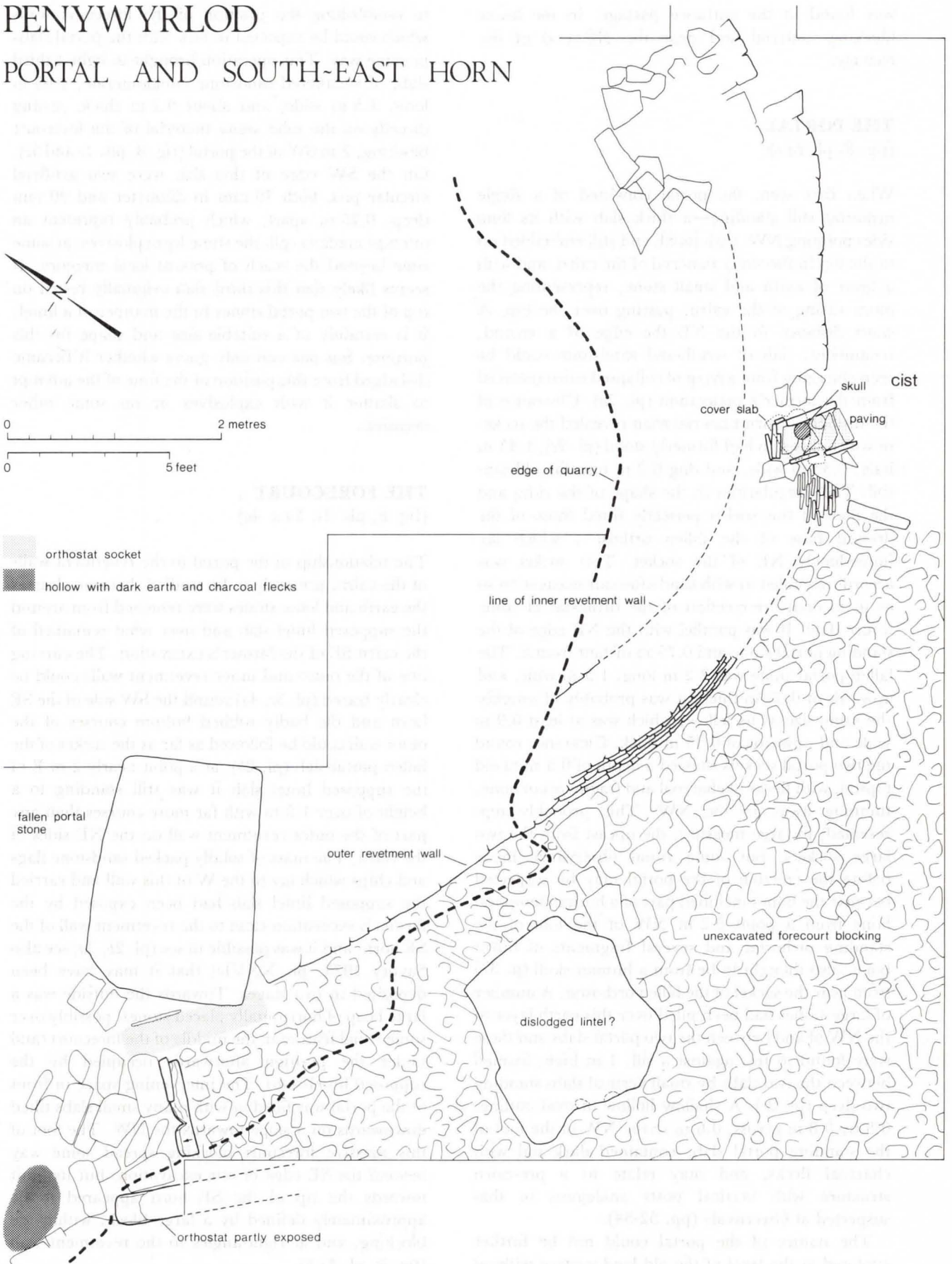


Fig. 8

was found in the entrance passage, in the lower blocking material and near the NE end of the passage.

THE PORTAL

(fig. 8, pl. 2*a-c*)

When first seen, the portal consisted of a single orthostat still standing—a thick slab with its long sides pointing NW, with its SE end still embedded up to the top in the stony material of the cairn, and with a layer of earth and small stone, representing the outer casing of the cairn, passing over the top. A short distance to the NE the edge of a second, recumbent, slab of weathered sandstone could be seen emerging from a heap of collapsed cairn material from the farmer's excavation (pl. 2*a*). Clearance of the dislodged cairn material soon revealed the socket in which this slab had formerly stood (pl. 2*c*), 1.45 m long, 0.35 m wide, and dug 0.2 m into the old topsoil. The irregularities in the shape of the sides and the floor of this socket perfectly fitted those of the dressed base of the fallen orthostat, which lay immediately NE of the socket. This socket was accordingly filled in with sand after our excavation so as to facilitate re-erection of the orthostat at some future date. It was parallel with the NE edge of the standing portal stone and 0.75 m distant from it. The fallen portal stone was 2.2 m long, 1.5 m wide, and upwards of 0.35 m thick: it was probably of roughly the same size as its fellow, which was at least 0.9 m wide and upwards of 0.35 m thick. Clearance round the two portal sockets showed a depth of 0.3 m of old topsoil, with flecks of charcoal and fragments of bone, thinning away to the NW. This probably represented, in large measure, the upcast from the two large sockets, but some ritual observance made before the erection of the portal may be suspected because the bones included part of a human temporal bone from a point 0.2 m NW of the foot of the standing orthostat and several fragments of burnt bone, also thought to be from a human skull (p. 37) from near the socket of the fallen orthostat. A number of large stones had been piled over this earth layer to the NW of and between the two portal slabs and these were found to rest against a sill, 1 m high, formed between the two slabs by small vertical slabs standing two deep (pl. 2*c*). A shallow hollow of oval outline, 0.5 by 0.8 m across, 0.6 m to the NW of the foot of the standing portal slab, contained dark soil with charcoal flecks, and may relate to a pre-cairn structure with vertical posts analogous to that suspected at Gwernvale (pp. 52-54).

The nature of the portal could not be further explored at the level of the old land surface without removing a great depth of forecourt blocking, which was outside the scope of our enquiry. This blocking in fact rose to the full height of the cairn immediately behind it, and it was decided that all that could be done was to strip down to its stony surface with a view

to establishing the position of the forecourt walls which could be expected to link with the portal slabs in some way. This operation brought to light a third slab, of weathered sandstone conglomerate, 1.65 m long, 1.5 m wide, and about 0.2 m thick, resting directly on the solid stony material of the forecourt blocking, 2 m SW of the portal (fig. 8; pls. 1*c* and 3*c*). On the SW edge of this slab were two artificial circular pits, both 70 mm in diameter and 90 mm deep, 0.25 m apart, which probably represent an attempt made to split the stone by explosives, at some time beyond the reach of present local memory. It seems likely that this third slab originally rested on top of the two portal stones in the manner of a lintel; it is certainly of a suitable size and shape for this purpose, but one can only guess whether it became dislodged from this position at the time of the attempt to shatter it with explosives or on some other occasion.

THE FORECOURT

(fig. 8; pls. 1*c*, 3*a-c*, 4*a*)

The relationship of the portal to the revetment walls of the cairn, presently to be studied, became clear as the earth and loose stones were removed from around the supposed lintel slab and over what remained of the cairn SE of the farmer's excavation. The curving line of the outer and inner revetment walls could be clearly traced (pl. 3*c*, 4*a*) round the SW side of the SE horn and the badly robbed bottom courses of the outer wall could be followed as far as the socket of the fallen portal-slab (pl. 2*b*); at a point nearly 2 m E of the supposed lintel slab it was still standing to a height of over 1.5 m with far more courses than any part of the outer revetment wall on the NE sides of the cairn. The mass of solidly packed sandstone flags and chips which lay to the W of this wall and carried the supposed lintel slab had been exposed by the farmer's excavation close to the revetment wall of the SE horn, and it was possible to see (pl. 2*b*, 3*a*; see also Savory 1973, pl. XXVI*c*) that it may have been deposited in two stages. Towards the outside was a large heap of horizontally placed stones, possibly over some ritual feature in the middle of the forecourt (and under the position afterwards occupied by the supposed lintel-slab). The intervening space in front of the portal was filled in with many small slabs tilted downwards on a slope towards the NW. The foot of this massive forecourt blocking spread some way beyond the SE edge of our excavation, but its limit towards the tip of the SE horn appeared to be approximately defined by a large block, within the blocking, and at right-angles to the revetment wall (fig. 8; pl. 4*a-b*).

About 0.6 m to the NE of this block a small cist had been inserted into the lower part of the outer revetment wall of the SE horn, with its outer end resting on 'extra-revetment' material (pl. 4*b*). It was formed of two thin vertical slabs on the SW side, one

relatively large and one very small upright slab on the NE side, and single vertical slabs, three-deep, on the NW side; it was paved with very small slabs and covered by three small slabs. Its outer end slab had already been removed and its contents disturbed, but as preserved the internal length was 0.65 m, breadth 0.36 m, and depth 0.2 m. At the inner end were traces of a filling of fine earth, which covered the damaged skull of a child of three to four years old, and a few other bones, some of which proved to belong to adults. Though the skull may have been chosen for a ritual reason on completing the filling of the forecourt (see *Discussion*, pp. 33-34) the presence of other bones, which may represent only a portion of those present before disturbance of the cist, shows that we are dealing here with a deposit probably similar in origin to those found in lateral Chambers NE II-III, and not with a simple skull burial or a secondary burial of a much later date.

REVETMENT WALLS AND 'EXTRA-REVETMENT' MATERIAL

(figs. 4, 7, 9, pls. 3-4, 7-9)

Various sections cut in September 1972 along the NE side of the cairn showed that its constructors had followed the now well-studied and familiar Severn-Cotswold tradition of building an inner and outer revetment wall, with 'extra-revetment' material piled against the outer wall in amounts varying from place to place. As reported elsewhere, the inner revetment wall was much more massively constructed, with rectangular blocks, often weathered, upwards of 0.25 m each way and 0.15 m thick; they were clearly exposed in a section SE of the lateral Chamber NE I (fig. 5, pl. 6*d*), in line with the two transverse slabs which separated that chamber from its entrance passage. The destruction around NE I prevented study of the inner revetment wall in its immediate neighbourhood—especially on the NW side—and it was not thought desirable to disturb the area around the NE sealing slab of NE II in order to uncover the inner revetment wall there. What appeared, however, to be the top of a wall formed of solid blocks like those in the section nearest to the SE horn was uncovered immediately SE of the SE transverse slab at the entrance of the Chamber NE III (pl. 9*a-b*). This would imply a wall at least 0.5 m high at this point; but immediately NW of this entrance an inner revetment wall of much rougher construction, albeit of much greater height than that seen on the other side of the entrance, was revealed (pl. 9*b*). In any case, this inner wall would have been much more effective as a revetment for the cairn than the outer one.

Near the tail of the cairn (fig. 9, pl. 9*c*), search for a possible terminal chamber led to the stripping of a considerable area where some earlier disturbance had

occurred. Although no trace of a chamber or its entrance passage came to light it was possible here too to determine the line of an inner revetment wall, formed as before of larger, often weathered slabs, running parallel with the outer wall (pl. 10*b*). In this area, too, scraping by the farmer had probably removed some courses of the inner wall, so that its present height of probably not much more than 0.35 m is likely to be considerably less than the original one, especially near the main axis of the cairn at its NW end, where 'extra-revetment' material had been piled up strongly (p. 24). The course of this inner wall was roughly parallel with the outer one throughout, though the distance apart varied from 1.5 m at Chamber NE II, to 1.2 m at Chamber NE I, and 1 m at NE III. Its course could be picked up locally in the SE horn likewise, curving in conformity with the outer wall (pl. 4*a*), and can be seen in section in photographs looking SE from the fallen portal-slab, rising to a height comparable to that of the outer wall in the forecourt (pl. 3*b*).

Naturally, much more of the outer revetment wall was exposed, and for much of its length it now shows a striking uniformity: six to seven courses of thin, cleft, sandstone plaques with a total height of 0.3 m. It shows a tendency to decline in quality of construction in the topmost courses and to topple outwards—particularly near the SE horn (pl. 6*d*) and at the tail of the cairn (pl. 10*a*). It does so also near the entrance of Chamber NE III, where the SE side of the section shows this feature particularly well (pl. 9*a-b*). Here, an original height of at least 0.4 m is suggested, with ten or more courses. The relatively uniform height of what was exposed at various points along the NE side of the cairn in fact suggests that the original height is not likely to have been much more than 0.4-0.5 m anywhere along the side of the cairn, contrasting with the much greater height achieved by the same wall when it flanked the forecourt leading up to the portal.

It should be pointed out that the tendency for the upper courses of the outer revetment wall to tilt outwards was evidently the result of pressure from the body of the cairn and not because the lower courses of the wall had been bedded into a slot with a floor sloping down towards the outside, as has been observed at some Cotswold sites (*eg* Burn Ground, Grimes 1960, 52-59). The lower courses at Penywyrlod were in fact quite horizontal and had been placed on a horizontal surface. But another device, already noted at Pipton (Savory 1956, 38*f*) and Ty-isaf (Grimes 1939, 124, pl. XIII, 3), was very well represented at Penywyrlod, in the form of a marker block near the entrance to NE III, which had evidently served to control the direction taken by the builders of the outer revetment wall.

The lowness of the outer revetment wall at Penywyrlod is really the result of its non-functional character: the function of consolidating the structure of the cairn was taken over here, as in other Severn-Cotswold cairns, on the inside by the inner revetment

wall, and on the outside, at least in places, by 'extra-revetment' material. As at Pipton (Savory 1956, 31f) the bulk of this material varied greatly from one point to another: it was comparatively slight round the SE horn—about 0.6 m wide—but it became much more substantial opposite the dummy entrance of Chamber NE II. Here an inner heap of earth and small stones, containing flecks of charcoal, had resting against it piled sandstone plaques and slabs, one of them very large (pl. 7c). These extended outwards at least 2 m from the outer revetment wall and may originally have had a surface sloping upwards over the top of the outer revetment wall and merging with the upper stones of the cairn, in a build-up comparable with that of the forecourt blocking. By contrast the build-up of material remaining (after the farmer's disturbance) opposite the apparently functional entrance of NE III was slight, as it was all along the NE side of the cairn between Chamber NE III and the N corner. The underlying old top-soil, however, contained flecks of charcoal and some western Neolithic potsherds (p. 28). The tail of the cairn, on the other hand, had received very special treatment, for the 'extra-revetment' material here extended at least 2 m outwards from the outer wall and had evidently passed, before disturbance, over the top of the outer wall (pl. 10b), linking with the upper slope of the cairn. In fact stripping of the old surface in this area revealed that the piled, inward-tilted slabs of the 'extra-revetment' were bedded in an oblong trench, 3.3 m long, 1.5 m wide, and 0.6 m deep, along the bottom of which ran a central fin of vertical slabs resting on longitudinal, horizontal blocks and held in position by slabs tilted against their outer surfaces in the trench, so as to take the pressure of a sort of buttress of piled slabs resting against their inner surfaces (pl. 10c). This buttress partly supported the outward-tilted upper courses of the lower outer revetment wall and partly passed over its top (fig. 9).

The scattered small fragments and smears of charcoal which accompanied potsherds on the old surface opposite the entrance to Chamber NE III had their counterpart, with more small sherds, close to the foot of the outer revetment wall near the N corner of the cairn, and a sandstone disc found still further to the NW beyond the E end of the revetment trench may be connected with these sherds, since it belongs to a type associated with megalithic tombs elsewhere (p. 26). Some more flecks of charcoal were also found on the old surface under the cairn, within the line of the outer revetment wall, near the portal (already mentioned on p. 22). In view of the accompanying artefacts these finds may relate to something more than the mere burning of vegetation before the construction of the cairn and represent ceremonial activities which possibly also leave a trace in the fragments of burnt human bone found near the portal (p. 37).

THE CROSS-WALL

(figs. 4, 7, pl. 8c-d)

Owing to the limited objectives of the excavation in September 1972 no attempt was then made to enlarge the farmer's main excavation in search of further structural features; the tumbled debris on the sides of the excavation were only cleared at points where the structural features were already exposed. When visiting the site again, however, in August 1974 on the occasion of the visit by the Cambrian Archaeological Association to the site it was noticed that further falls of material on the north-west side of the excavation SW of Chamber NE II had revealed what appeared to be the upper part of a gently curving length of dry-stone walling at right-angles to the main axis of the cairn. In view of the apparent resemblance to the 'rotunda' walls observed at Ty-isaf and Pipton, I returned to the site on 13 September 1974 and, with the help of Mr G. Evans of the National Museum of Wales cleared the face of this wall down to its base, as far to the SW as could be done without affecting the stability of the cairn mass at its highest point. It became clear (pl. 8d) that the 'rotunda' effect applied only to the upper courses of the wall. Its lower courses, largely formed of large often weathered slabs, 0.5-0.8 m long and up to 0.3 m thick and rising to a height of 1.3 m above the original surface, were nearly straight. It was also clear that at their NE end these lower courses had been carefully laid to form a straight edge vertically against the end slab of Chamber NE II, suggesting that the latter was already in position when they were laid (pl. 8c). This massive foundation course did not rest directly on the clay of the original surface under the cairn, but on a thin layer of small plaques of sandstone, and had large slabs, shallowly bedded in the clay, tilted against them in the manner of 'extra-revetment' material. As the photograph shows (p. 8d), the massive, 1 m high lower wall was continued further upwards by a more lightly constructed and sharply battered curving wall which gave the appearance of a 'rotunda'. It seems likely that this was a cross-wall like others reported from various other Severn-Cotswold long cairns—notably Ascott-under-Wychwood,³ where such a wall runs from the back of lateral cists on one side of the cairn to the back of similar cists on the other side. It may, in that case, have been one of several such cross-walls, built at intervals across the main axis of the cairn as it was being built. If there were another, as yet unlocated, pair of lateral chambers half way between Chambers NE II and NE III, as their spacing might suggest, one can imagine that the battering of the upper courses of the cross-wall just described might represent the later stages of filling in of a central space in the cairn between Chamber NE II and the hypothetical pair of chambers. Such

³ *Current Archaeology*, III (1971), 7-10.

speculations await verification at some future date, but at any rate their possibility serves to emphasise the exceptional state of preservation of the

Penywyrlod (Talgarth) long cairn and the importance of its preservation.

PENYWYRLOD TAIL OF CAIRN



Section through buttress pit

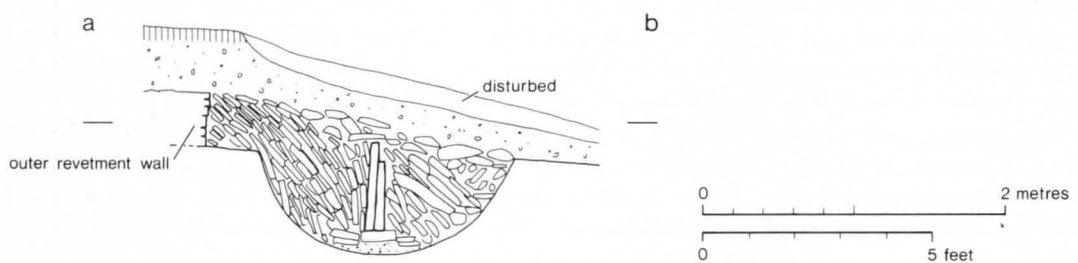


Fig. 9

CHAPTER II

The Finds

FLINT

The three complete or fragmentary flint implements found at Penywyrlod were all of the same deeply patinated white-surfaced grey flint. Two were associated with the burial deposits, while the third was found under the cairn material, NW of the portal, and may relate to a phase of activity earlier than the construction of the cairn itself, and possibly even connected with a ritual structure on the site of the forecourt, as at Gwernvale (p. 52). The broken-off tip of a leaf-shaped arrowhead from the floor of the lateral Chamber NE II (fig. 10, no. 1), 12 mm long overall, came from a well-shaped, bifacial implement of slightly ogival outline near the point, the tip of which had broken off. The damage appears to be ancient, and may have occurred when the remains of corpses which had originally been deposited, with grave-goods, elsewhere, were redeposited in the cist. The knife from the entrance-passage of Chamber NE III

(fig. 10, no. 3) is made from an oval flake 39 mm long overall, with bulb of percussion retained at one end (with bulbar scar) and ancient damage at the distal end; there is secondary working on the dorsal surface, confined to the edges of the long sides. The third piece is a fragment, broken off at each end from what appears to be a small battered-back blade of scalene section and possibly of scalene outline when complete (fig. 10, no. 2). If this can be classed as a microlith there would be nothing strange in its appearance in Brecknock, or indeed in a layer underlying a long cairn, in view of finds in the pre-cairn layer at Gwernvale (p. 50), but without more extensive exploration of undisturbed pre-cairn layers at Penywyrlod it would be impossible to say whether this single find is part of the equipment of the cairn-builders or a chance loss belonging to a much earlier date.

STONE

Two stone objects found near the NE corner of the cairn, just outside the 'extra-revetment' material, seem to relate to the same Neolithic activity on the site as the pottery found in a similar position further to the SE (p. 24). The small sandstone disc with roughly shaped edges, 32-35 mm in diameter and 10 mm thick (fig. 10, no. 4) clearly belongs to a class of object associated with chambered cairns in Brecknock and elsewhere, however problematic its origins and function may be. Ty-isaf (Talgarth) long cairn yielded a series of graduated sizes of disc of this type (Grimes 1939, 132f), although none of these was quite as small as the present example. Another disc was apparently found in a Bronze Age cairn at the head of the Cadlan valley, Penderyn (Brecknock, Webley 1954). To the British parallels from Pant-y-saer (Anglesey) and Clettraval (North Uist) mentioned by Grimes may now be added a relatively

large, unstratified example from the chambered court-cairn at Brackley (Argyll, Scott 1955-56, fig. 10, no. 14) and one from the façade of the end-chambered long cairn at West Kennet, Wilts. (Piggott 1962, 19 and 48f, fig. 16, no. 2). To old finds in the Carnac Museum, from Crech-Collé, St-Pierre Quiberon (Morbihan), and Parc-ar-Castel, Tréguennec (Finistère, Jacq 1943, 116, 118), could now be added new finds from the galley grave with lateral entrance at Champ-Grosset, Quessoy (Côtes-du-Nord, L'Helgouach and Le Roux 1965, 5-31, fig. 2, no. 7 and fig. 6, nos. 4-7), and the short gallery at Mein-Goarec, Plaudren (Morbihan, L'Helgouach and Lecornec 1968, 27-51). Those Breton finds which can be assigned to a particular type of monument, seem in fact to relate to late types of tomb.

THE BONE ?FLUTE

by J. V. S. Megaw⁴

In the post-excavation washing of the disarticulated human bones which were discovered in the entrance of the lateral Chamber NE III, a small worked section of an ovicaprid metapodial came to light (p. 20). The bone, the left femur (of a fairly large sheep by either prehistoric or Roman standards) whose present length measures 74 mm, is clearly incomplete (pl. 11a-b, fig. 10, no. 6); at the proximal end the largest of three holes artificially cut or rather punched into the anterior surface has a diameter of 7 mm, while two others below it have diameters of c. 4 mm each. Those smaller holes which are roughly cut in comparison with their larger neighbour are spaced at c. 15 mm centres one from the other. There are some six other smaller surface punch marks. The upper, proximal end of the bone has been split through at a slight angle by a spiral fracture.

At first glance this bone looks like many other examples of the commonest class of archaeological evidence for music making in ancient Europe, a class which may be loosely categorized as flutes or pipes (Megaw 1960; 1961; 1968, esp. pp. 335-39; Brade 1975). There are, however, at least two points of difficulty in making a certain identification of the Penywyrlod bone; first is the absence of any obvious voicing lip and secondly the extremely close spacing of the (putative) finger holes, not to mention the small diameter of the only two complete surviving holes.

In general terms there are two classes of simple pipes or end-blown flutes; one class—that most clearly distinguished in the archaeological record—is a duct or fipple-flute, the ancestor of the recorder or penny-whistle family of wood-wind instruments in which a block or 'fipple' inserted into one end of a tube constricts the player's breath against a voicing lip. The second class, well evidenced in modern ethnographic contexts, is the vertical or sometimes 'notched' flute more difficult to sound than the fipple-flute since the player has to adjust his mouth against the upper opening of the tube, as with blowing across the lip of a glass bottle (Jenkins 1970, 24-25).

With the Penywyrlod bone, one may be tempted to interpret the large hole as the surviving portion of a voicing lip or blow-hole, but the relatively close positioning of all three holes seems to militate against this.⁵ That in fact the pipe may have been played—or have been intended to be played since we cannot rule out the possibility that we are dealing

with an unfinished object—from the opposite end, seems just as likely. Either way, no certain verdict can be arrived at.

What other evidence is there for Neolithic bone flutes in Europe? One must admit that what evidence there is has been almost totally rejected recently on the basis of either authenticity of dating or interpretation of function. In her dissertation on medieval fipple-flutes Christine Brade, who has compiled the most thorough survey of the archaeological and musicological evidence for bone flutes so far published, maintains that for the neolithic, let alone earlier prehistoric, periods there is *no* certain evidence for bone pipes (Brade 1975, 22, 57). The present note is no place for a detailed critique of her opinion that the commonly held view of a continuity of simple pipe-making from the Palaeolithic to the present day must be set aside once and for all. One must agree, however, that the most famous claimant for Neolithic date, a veritable star of film no less than literature, the sheep bone pipe with five finger holes from Hammeren on the Island of Bornholm, is most likely medieval in date (Vestergaard Nielsen 1951; Brade 1975, cat. no. DK 3). Equally, a verdict of non-proven must be returned on the no longer extant bone from the Gourdan rock shelter in the Haute-Garonne and that with three finger holes from a SOM gallery grave at Poitiers—this last exceptionally of antler. There are other possible candidates for a Neolithic date in the literature already cited (Megaw 1961, 56; 1968, 337) and it remains unclear on precisely what grounds Dr Brade, over-concerned as I believe she is with only fipple as opposed to notched-flutes, dismisses the bone with four surviving finger holes from a Late Neolithic grave with *spondylus* shell beads found at Mährisch-Kromau. Like the Bornholm example, this last, I feel, must be a fragmentary notched flute.

Certainly a more valid argument against a musical purpose for such pieces as the bone from Penywyrlod is that no fipple or notched flutes of the historic periods appear incomplete or with rough-cut 'finger holes' as in our Welsh 'pipe' (Brade 1975, 57).⁶ It remains to be asked however if such bones are not musical instruments in the making, what purpose *did* they serve? The theory advanced some years ago by Rudolf Maier that some Neolithic pierced bones—particularly pierced phalanges—represent highly schematised idols hardly applies to our present example (Maier 1962). Even so half-hearted an

⁴ I am indebted to Mr G. C. Morgan, Dept. of Archaeology, University of Leicester, for first bringing the pipe to my attention, and to Dr H. N. Savory for affording me every facility to study it. The pipe has been examined by Mrs Jean Jenkins, Musicologist at Horniman Museum, London. The faunal identification is by my former colleague Clare Thawley.

⁵ The spacing of c. 15 mm mentioned above does however accord quite well with the calculated mean for the admittedly

much later Dutch *terpen* series (Megaw 1968, 338) and similar spacing.

⁶ Another as yet unpublished Neolithic 'pseudo-pipe' is an ovicaprid femur from Skara Brae. With radiocarbon date centering on 2000 bc, this has one well-cut 'finger-hole' and one (or possibly two) partially complete holes. I owe this information to Dr David Clarke, National Museum of Antiquities of Scotland.

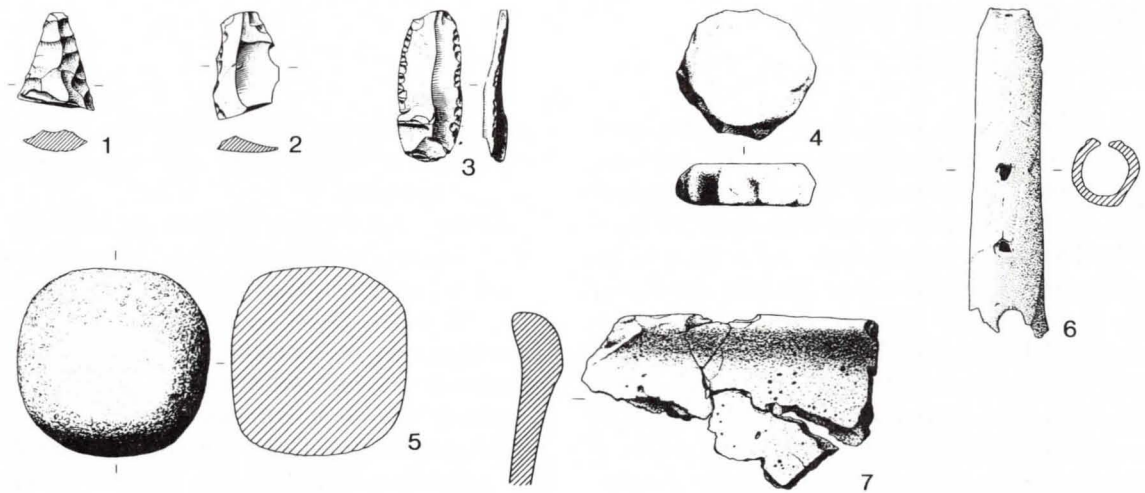


Fig. 10. Penywyrlod: flintwork, nos. 1-3 ($\frac{1}{2}$); utilized stones, nos. 4-5 ($\frac{1}{2}$); bone ?flute, no. 6 ($\frac{1}{2}$); pottery no. 7 ($\frac{1}{2}$).

identification as has been made here is worth making since, although there is clearly more than a little doubt concerning evidence for Neolithic bone pipes from Western Europe, with a radiocarbon date of

3020 \pm 80 bc (see p. 29) the Penywyrlod bone is the earliest claimant as a musical instrument from the British Isles.*

POTTERY

All the sizeable fragments of pottery found at Penywyrlod, including the rim fragment (fig. 10, no. 7), came from the earth which underlay the stony 'extra-revetment' material opposite the entrance to Chamber NE III, and is of uniform character—plain grey-brown ware with fine grits and smooth, vesicular surface as is normal with early Neolithic pottery. The rim fragment apparently belonged to a hemispherical bowl with thickened and slightly everted rim, recalling some pieces from Ty-isaf (Grimes 1939, fig. 6, no. 4). Smaller pieces came

from outside the NW end of the outer revetment wall on the NE side of the cairn and from the trench in which the 'extra-revetment' material at the cairn tail was bedded. In some cases a coarser ware seems to be represented, but these fragments are so minute that little can be based upon them. The general character of the ware, as at Ty-isaf and Gwernvale, recalls the Abingdon Ware of Wessex, and the radiocarbon dates at Abingdon itself do not present any particular difficulty here (see Smith 1974, 100-36).

*Since this note was written, a further Late Neolithic example of a fipple flute, from a cist grave at Falköping, Sweden has been published (C. Lund, 'Nordens äldsta spaltflöjt', *Fornvännen* 74 (1979), 1-9). Attention should also be drawn to the following articles: C. Brade with J. V. S. Megaw, 'The prehistoric flute: did

it exist?', *Galpin Soc. J.*, 35 (1982), 138-50; J. V. S. Megaw *in press*, 'A note on a fragmentary bone end-blown pipe from a medieval house site at Stonar, near Sandwich', *Archaeol. Cantiana*, 100 (1984).

CHAPTER III

Discussion

THE PLACE OF PENYWYRLOD IN THE SEVERN-COTSWOLD GROUP

Discussion of Penwyrlod is naturally limited by the fact that its plan is only partially known. It is, at any rate, obvious that however large a site it may be it is a member of the laterally-chambered, 'dummy portal' group of Severn-Cotswold long cairns, already well represented in the Black Mountains area.

It is also evident that what I have called the 'Main Chamber' of the cairn (p. 16) was of more massive construction, and much higher, than the two lateral chambers which it was possible to examine—a feature which has an analogy at the Gwernvale long cairn, described elsewhere in this monograph (p. 144). Beyond this we can only surmise that the total of lateral chambers in our cairn might have been six and possibly even as many as eight—the fact that the gap between Chambers NE II and NE III is almost exactly twice that between NE I and NE II may be significant and the farmer's disturbance was certainly less at the critical point—but eight would be an exceptional number for a Severn-Cotswold cairn. Examples of long cairns which may once have had more than four chambers are Lughbury, Wilts. (Crawford 1925, 230-34), and Luckington, Wilts. (Crawford 1925, 169; Corcoran 1969, 58-63, 292f). Only large-scale excavation would tell us whether other chambers are hiding, quite undisturbed, in the cairn and whether they were laid out symmetrically in pairs: it would, indeed, be perfectly possible, considering the state of preservation of the cairn, but there are several examples in the Severn-Cotswold group of cairns where lateral chambers on one side of the cairn are not matched on the other (Corcoran 1969, 54-63). Although the Main Chamber must have been entered from the SW side of the cairn we are unable to judge whether its plan was the same as the other lateral chambers, or was of the polygonal form seen at Gwernvale Chamber 1, or transepted, as at Ty-isaf and Pipton.

While our cairn clearly embodies a tradition of construction which is equally well represented in other long cairns in the Black Mountains area which have been excavated—Ty-isaf, Pipton, and now Gwernvale—and the many points of detail will be compared in due course—it far exceeds in size the

other long cairns of this area and is only matched in this respect by certain sites in the Cotswolds (*eg* Leighterton, Lamborough Banks, and Colnpen, Glos. are all upwards of 80 m long, Corcoran 1969, 279-85), and on the Wiltshire chalk (Corcoran 1969, 28), some of which are of the end-chambered variety.

Until recently most prehistorians would have assumed that end-chambered long cairns were 'primary' and that lateral-chambered long cairns were on the whole later, representing, as they supposed, a local line of evolution from the end-chambered type, the continental origins of which had long been accepted. Moreover the laterally-chambered 'derivatives' are particularly well represented in the northern Cotswolds and the Black Mountains area, relatively remote from the assumed points of entry of the long cairn tradition (Daniel 1939). But during the last twenty years radiocarbon dates have enormously lengthened Neolithic chronology in western Europe and though, until recently, the dates available for the long cairns and barrows of Britain related almost exclusively to the 'unchambered' (wooden chambered) variety, it is now clear that radiocarbon dating does not support the chronological priority of end-chambered long cairns. At the time of writing the date obtained by Harwell Radiocarbon Laboratory from a sample selection of minor and broken human bones recovered from Chamber NE II at Penwyrlod— 4970 ± 80 BP— 3020 ± 80 bc—?c. 3800-3600 BC (HAR-674)—is one of the earliest so far published for a stone-chambered long cairn in southern Britain, although the long series of dates for the 'unchambered' long barrows of the same area begins somewhat earlier (Ashbee 1970). None of the dates obtained from Gwernvale belongs directly to the period of construction, although they are taken to imply that the cairn was built at some time after c. 3100 bc and finally closed at about 2500 bc (p. 50). A somewhat later date is implied for the published dates for the laterally-chambered cairn at Ascott-under-Wychwood, Oxon.: 2785 ± 70 bc from charcoal from the surface of a buried soil beneath the cairn (BM-492); 2992 ± 74 bc from charcoal from burnt structural elements in the cairn (BM-832); and 3070 ± 92 bc from charcoal from burnt structural elements in the cairn (BM-833).⁷ Here one must

⁷ *Radiocarbon*, 18 (i), 19.

balance the possibility that wooden structural elements at Ascott may have been derived from earlier structures on or near the site of the cairn against the probability that the bones used for dating Penwyrlod had also been derived from an earlier mortuary chamber (p. 35). On the other hand the one date for an end-chambered Severn-Cotswold tomb available to the writer from Wayland's Smithy, Berks. (2820 ± 130 bc), from charcoal deposited before the erection of the megalithic tomb (Atkinson 1965), points to roughly the same horizon.

On present radiocarbon evidence, then, it would be prudent to assume that end-chambered and laterally-chambered tombs represent roughly parallel developments within the Severn-Cotswold group, and that their point of divergence must lie further back in time and further away geographically than southern Britain. One must look across the English Channel for the answer, to a region in western France where the backgrounds both of end-chambered and laterally-chambered cairns lie. It would, perhaps, be an advantage to do this before considering in detail the structural features revealed by careful modern excavations in the Severn-Cotswold group itself.

THE CONTINENTAL BACKGROUND

It has been evident for some time that in Brittany, especially along its north coast, trapezoidal long cairns with laterally-entered chambers belong to an early horizon, well back in the fourth millennium bc, and even earlier (L'Helgouach 1965 and 1973). The earliest dates for these tombs— 3800 ± 150 bc for the earliest phase at Barnenez (Gif-1309), 3600 ± 140 bc (Gif-1556) and 3500 ± 150 bc (Gif-1310) for chambers in the secondary cairn there; 3850 ± 300 bc for l'Île Gaignog (Finistère, GIF-165); 3440 ± 150 bc for l'Île Carn (Finistère, Gif-1362); and 3540 ± 120 bc for Colpo cairn (Finistère, Gif-2826)—are as early as the earliest dates so far obtained from any of the classic chambered round cairns on the north and south coasts of Brittany, *eg* 3890 ± 300 bc from Kercado (Morbihan, Sa-95); 3215 ± 130 bc from l'Île Bono (Côtes-du-Nord, GsY-64a). The long cairns which are now coming to light in Lower Normandy alongside round ones appear to belong to much the same horizon. Thus the short sub-rectangular cairn with multiple chambers at La Hoguette, Fontenay-le-Marmion (Calvados) has yielded the date 3610 ± 150 bc in one of the chambers (Ly-131, Caillaud and Lagnel 1972), while the fragmentary but apparently much narrower trapezoidal long cairn, with lateral chamber, at La Commune-Sèche, Colombiers-sur-Seulles (Calvados) has yielded a date of 3200 ± 130 bc (Gif-1917).⁸

There is, of course, a difference between the early Breton and Norman chambered long cairns which we have just been considering and the long cairns of our

Severn-Cotswold group: their chambers, like those of the contemporary round cairns of the same area, normally follow the Passage Grave tradition rooted in south-west Europe and are round or polygonal in plan, with long passages and often with an extensive use of dry-stone construction, particularly in the chambers themselves. But if we look further south, into the interior of western and southern France—an area which until recently lagged behind Armorica in modern excavation—we find ourselves in a different province, in which rectangular or sub-rectangular megalithic burial chambers predominate, usually with quite short entrance passages, where these survive. In these areas the shape of the covering mound is all too often only to be recovered by excavation, but there is at the same time a considerable number of long mounds, as well as round ones, the contents of which in many cases have not yet been fully ascertained.

Among these sites there are, in the Angoumois, Gironde, and on the *Causses* of Languedoc, rectangular or small trapezoidal terminal chambers (Daniel 1950*b*; 1960, esp. fig. 53-6; Savory 1977). While some of these sites, especially in the southern part of the area, appear to be of relatively late date, others further north may be earlier. Indeed, in the Vendée, round the Loire mouth, and in Morbihan, one finds a type of compartmented rectangular chamber, with short entrance passage which is sometimes set terminally in a trapezoidal mound, as at Pierre-Levé, Nieul-sur-l'Autize (Vendée, Joussaume 1976), and there are even rectangular transepted chambers in the same area which have long been seen as possible ancestors of the multiple-transepted monuments of the Severn-Cotswold group (Daniel 1939). These monuments, however, carry on a tradition already found at Colpo (Finistère), tomb II (L'Helgouach and Lecornec 1976), and the simple rectangular chambers which are sometimes found in early Passage Graves like Kercado (Morbihan) and La Boixe (Charente, Savory 1977, fig. 2), though associated with round cairns, probably evolved into the large rectangular compartmented chambers just mentioned.

There is, however, a third element in the Neolithic burial tradition of the Biscayan area of France which has to be taken into account when studying the sources of the British long cairn and long barrow tradition. This is represented by the *Tumulus Géants* which are now recognized to have existed in quite large numbers in northern Saintonge, the Angoumois, and Poitou (Burnez and Gabet 1967). These range from 50 m to 150 m in length and from 2 m to 4 m high—indeed, one, the Gros Dognon at Tusson (Charente), is said to be 150 m long and 10 m high (Arnal and Burnez 1961, 35), and there is a superficial relationship to the group of large mounds in Morbihan (Giot 1960, 109-14; Arnal and Burnez 1961, 29-33), one of which, Mont St-Michel,

⁸ *Gallia Préhistoire*, 14, (1971), 325-7, and 16 (1973), 361-5.

Carnac, covered a closed cist for which there is a radiocarbon date of 3770 ± 300 bc (Sa-96). The *Tumulus Géants* of Poitou-Charente seem also not to have covered primary collective burials in passage graves any more than did certain small trapezoidal cairns like Castelic, Lannvras (Morbihan) which yielded a date of 3075 ± 300 bc (GsY-198b). In fact at the Grosse Motte, Bouhet (Charente-Maritime) there seems at first to have been some kind of mortuary enclosure, lined with wooden posts, on the main axis of the mound, which was afterwards heightened to cover at least one group of lateral cists with single burials or only a limited number of bodies within (Burnez and Gabet 1967). Another great mound at Thou (Charente-Maritime) had a cist, probably secondary, on its main axis (Arnal and Burnez 1961, 33). The *Tumulus du Cruceau* (Charente-Maritime) was 100 m long, 30 m wide, and is said to have covered a single crouched inhumation. The Motte de la Garde, Fontenille (Charente) apparently had a passage grave inserted laterally (Arnal 1956, 529, fig. 4, 1), and the great mound *A* at Bougon (Deux-Sèvres), one of a group of long and round mounds, had a large rectangular compartmented chamber inserted in one side (Arnal, Beguin, and Riquet 1955, fig. 2; Mohen 1977). Recent excavations by Mohen in this barrow group have revealed more than one phase of construction in some of these monuments, but it appears that the earliest phase involved rectangular cairns with small round chambers built early in the fourth millennium bc, while the large rectangular chambers in *Tumulus A* and *F* were added late in this millennium (Joussaume 1978, 594; Mohen 1977).⁹ In respect of size, at least, the *Tumulus Géants* seem to form a precedent for large British long cairns like Penywyrlod and the larger earthen long barrows, and some, though not all, seem to have been trapezoidal in plan, like the Grosse Motte, Bouhet, mentioned above. Their relationship to primary burials of limited numbers of individuals, moreover, seems to recall the burials in some of the earlier English long barrows, and indeed the trapezoidal *Kujavish* long barrows of NW Poland and the north European plain generally, to which an influential role has sometimes been attributed (Daniel 1970).

Study of 'un-chambered' long mounds, whether in western France, Britain or the north European plain, inevitably brings one to the problem of timber 'mortuary houses' which have been brought to light by modern excavations in some of the areas, and may in due course appear on other sites in west-central France as well as Bouhet. I have argued elsewhere (Savory 1977, 163-67) that house symbolism, derived from the great oblong and trapezoidal houses of the Danubian Neolithic groups now known to have spread over much of eastern France during the fifth and fourth millennia bc may be at the root of the oblong or trapezoidal plans of long barrows and

cairns, as well as the 'mortuary' structures they sometimes cover. Such a relationship has recently become fairly obvious in the marginally megalithic area of Franche-Comté (Petrequin and Piningre 1976), and the timber-framed cross-walls which are characteristic of the Danubian houses in the Paris Basin (Mordant 1970; Bailloud 1974)¹⁰ and of English long barrows (Ashbee 1970, 49-57) seem to emphasise the relationship. It is true that the long mound tradition seems to have developed outside the area where on present knowledge pure Danubian groups were established, but it now seems that some Danubian derivative groups like Cerny had reached parts of northern and western France before the end of the fifth millennium. Thus Cerny pottery has been found at St-Martin-la-Rivière in Poitou (Bailloud 1974, 110), and on a site with long mounds at Soumont-St-Quentin (Edeine 1972), at La Hoguette, Fontenay-le-Marmion (Calvados), where it occurred underneath the cairn already mentioned (Caillaud and Lagnel 1972, 152-54), and finally, at Le Colpo (Finistère, L'Helgouach, and Lecornec 1976, 378, fig. 7, and 395). It seems possible, therefore, that the area comprising Poitou, Anjou, and Lower Normandy was a zone of contact in which the prestige of the large houses built for the living by the Danubians could have inspired 'houses of the dead' in the form of oblong or trapezoidal mounds which at first covered single burials or timber 'mortuary' chambers. One might suspect, too, that the chalk areas of northern France, where cultivation in more recent times has long ago destroyed surface traces of prehistoric mounds, may have seen the prototypes of the English 'un-chambered' long barrows.

One can now, perhaps, begin to see the outlines of a reasonable hypothesis accounting for the three parallel traditions of Neolithic communal burial in long mounds in Britain, which avoids the fallacy of exaggerating the role of Daniel's 'Northmen' (Savory 1977, 163-65). The long burial mound existed at first in its own right, without passage graves, round the margin of true Danubian culture, across the north European plain from Poitou to Poland, but with its primary focus probably near the western end of this zone. It could have spread, with its original burial rite, from the chalk country of northern France to the corresponding zone of southern England, before the end of the fifth millennium bc. On the other hand, at an even earlier date, the tradition of mass communal burial, quite foreign to the Danubian cultures, had spread through the Mediterranean to SW Europe and the Atlantic seaboard of France (Savory 1977, 161-63) and was practised in cave, rock-cut tombs and passage graves covered by circular cairns. Although the latter ultimately spread to the Irish Channel area and beyond, their advance eastwards in southern Britain was barred by the prior arrival of the Severn-Cotswold tradition of chambered long cairns. These had spread by an intermediate route, between

⁹ See also *Gallia Préhistoire*, 19 (1976), ii, 442f.

¹⁰ *Gallia Préhistoire*, 19 (1976), ii, 402-8f.

Brittany and the chalk country of northern France, from primary centres in Poitou or Anjou. There they had developed more than one form of chambered long cairn—end-chambered or laterally-chambered—as a result of the spread of communal burial among the builders of long mounds. This diffusion of chambered long cairn-building to Britain, probably mainly through Lower Normandy, evidently took place early in the fourth millennium, well before the development in the parental regions of the great portico dolmens of the Angevin group or the gallery-graves which are so widespread in northern France. The type of megalithic chamber which appears to have been contributed to the Severn-Cotswold tradition by the parental groups in the interior of western France is the axially elongated rectangular chamber with short and low entrance passage, representative examples of which are found at Chacé (Maine-et-Loire, Gruet 1973), St-Suzanne near Laval (Mayenne, Daniel 1960, fig. 19, 3), and La Frébouchère (Vendée, Daniel 1960, fig. 43, 4). The site at Champ Pourri, Angoulême (Daniel 1960, fig. 46, 3), is an example of such a chamber placed terminally in a long mound. No doubt the origins of this type are to be sought in passage graves with rectangular chambers set in round mounds, such as occur in some Iberian megalithic tombs, and also occur alongside round-chambered passage graves in the well-known cemetery of La Boixe, Charente (Daniel 1960, fig. 47). The transepted and T-shaped chambers that occasionally appear in the Severn-Cotswold group would no doubt be the contribution of the coastal communities around the Loire mouth (L'Helgouach 1965, 179-88; Daniel 1939). A remaining difficulty, which must await further modern excavation, is the rarity of sites in the well-cultivated interior of western France which still have well-preserved covering mounds.

THE FORMS OF THE CHAMBERS AT PENYWYRLD

Partial though our knowledge of the chambers explored to some degree or other at Penywyrlod may be, it can at least be said that the three lateral chambers on the NE side of our cairn resemble in their broad outlines the axially elongated rectangular chambers of the interior of western France to which we have just assigned an important role in the origins of the Severn-Cotswold group. Indeed, one might say the same of a number of the lateral chambers in various other members of this group, which share the characteristic of a short entrance passage, usually placed between inner and outer revetment walls, as at Ty-isaf in the Brecknock group and at various Gloucestershire and Wiltshire sites (Corcoran 1969, 19-22). A particular characteristic of these chambers is the use of a pair of transverse slabs to separate the chamber from its entrance passage, leaving only a narrow gap for entry into the chamber itself. Such a

method of construction is found also in the supposedly parental groups of western and southern France and Iberia, where the local geology provides suitably thin slabs. But closer examination of the structural detail at Penywyrlod places difficulties in the way of a simple interpretation of the three NE chambers as 'Passage Graves' as has been done in the case of continental sites.

It has been seen that Chambers NE I and III at Penywyrlod certainly had narrow entrance passages by which access could have been obtained, albeit with difficulty, to their interior, but that the mouths of these passages had been at least partially obstructed by an outer revetment wall apparently built across them without interruption. It seemed, however, that this wall could not have been very high and in the case of Chamber III there was a suspicion, as at Chamber II, that some of the upper courses of this dry-stone wall might have been lifted and later relaid (p. 20). Owing to the presence of a large tree at NE I the entrance to the passage there could not be examined from the outside; at Chamber NE III the farmer's disturbance had removed the lower slopes of the cairn and caused a collapse of cairn material, so that a clear distinction could not be made between cairn material and any blocking there may have been. Nonetheless it is possible to envisage that periodical access could have been gained to these chambers followed by restoration of the upper courses of the revetment wall and restoration of the blocking material in such a way as to conceal the entrance to the chamber. Such an interpretation assumes that the low entrance passage was not roofed and served only to facilitate access to the chamber by those who knew its whereabouts; it is not very different to that proposed by Britnell in the case of the three chambers at Gwernvale, even though he has reasons to suppose that the outer revetment wall in this case was somewhat higher than the one at Penywyrlod (p. 143-44).

Lateral Chamber II is far less easy to interpret as a passage grave. Here the chamber itself appears to be clearly separated from the entrance passage by a vertical slab which extends across the full width of the chamber and originally rose to a greater height even than the SW terminal slab of the chamber. Though the cover-slabs of this chamber had already been removed before our first visit, a corbel-slab still in position above the NW end of the blocking slab may have supported one of the cover-slabs and so left a narrow gap which may or may not have been filled with smaller stones, but at best this gap would have served simply to pass through into the chamber the dead or their bones, rather than the living. In fact, as we have seen, the chamber contained no articulated bones and seems never to have contained more than a charnel deposit, with many of the longer bones laid side by side against the bases of the walls (p. 19). This deposit could, in fact, have been made on a single occasion, after the construction of the chamber and before its final sealing. In this case one can

understand the poor construction of the entrance passage, some of the side slabs of which had not been placed in position until part of the blocking material of the passage had already been laid on its floor. One can also understand the distinct nature of the ritual deposit found amidst the tight packing of the blocking material of the passage, consisting as it did purely of animal bones. But one must suppose that any disturbance of the upper courses of the outer revetment wall, as suggested here, related to later activities which did not involve the opening up of the chamber or the disturbance of the lower blocking material. It has already been pointed out (p. 24), while describing the 'cross-wall', that the relationship of the latter to the end slab of Chamber NE II suggests that this chamber must have been part of the primary structure of the cairn itself and not a later insertion.

Although, as we have seen, a distinction can be made between the degrees of access at Chambers I and III on the one hand and Chamber II on the other, there is in fact nothing to show that there was any difference between the deposits which they actually contained. Chamber III, the contents of which could only be partially explored, seems not to have contained any articulated bones near the entrance, where later arrivals might have been expected, had the chamber been used for successive burials of fresh corpses. At Chamber I, though we have no more than the bare foundations to go upon, it is perhaps worth noting that the only bones found came from the inner compartment. Since we do not know whether or not the slab which separated the two compartments rose to the full height of the chamber, we cannot be sure whether these two compartments had a different ritual use, or represent two separate cists reserved for two different collections of bones, belonging, perhaps, to different family groups, as has been suggested in the case of the paired cists at Ascott-under-Wychwood.¹¹

Only Chamber NE II was well enough preserved for its linear elevation to be restorable, apart from the roofing (fig. 7, section c-d), and study of this reveals that the blocking slab, in line with the inner revetment wall, is higher than the slab at the inner end of the chamber. This may be a highly significant feature if one wishes to suggest that Portal Dolmens in Wales may have evolved from chambers such as this (Savory 1980). The evidence from this chamber points to the deliberate concealment of the entrance features, however, and suggests that the ceremonial role of the Portal had not yet been transferred from a terminal forecourt which was itself blocked. Perhaps the recently defined 'Antechamber Dolmens' of Aude and Hérault provide a hint as to the origins of the unusual arrangement at this chamber at Penywyrlod (Ambert 1975). These, at any rate, show a dummy entrance passage leading to a high blocking slab, and containing offerings placed in the blocking material,

just as in the dummy entrance passage at Penywyrlod, Chamber NE II.

THE FORECOURT AND PORTAL

As already explained, the circumstances of the excavation did not permit full examination of the forecourt and portal at Penywyrlod and this means that the nature of the forecourt blocking and underlying deposits must remain unknown, well preserved as they undoubtedly are. Accordingly one must be content to note that the main structural features of the portal and forecourt themselves relate to the general Severn-Cotswold tradition, with rounded 'horns' flanking a deep, convex-sided high-walled forecourt of the sort associated as much with end-chambered as laterally-chambered sites and with a 'dummy' setting of stones at the base of the forecourt of the sort which occurs, with variations, on many laterally-chambered sites. One particularly close parallel would be the portal at Belas Knap in the Cotswolds (Corcoran 1969, fig. 18), which seems to have had a relatively low transverse slab and a 'lintel' stone resting on two high flanking slabs. The 'H' plan occurs, notably, at Ty-isaf, but is replaced by transverse slabs at Gwernvale and Pipton; at Penywyrlod the transverse slabs are small and low and presumably carried dry-stone walling like that at Belas Knap to seal the gap beneath the lintel stone.

The fact that the forecourt blocking at Pipton covered a horn-core of an ox (Savory 1956, 33, 55) just as the false entrance blocking Chamber NE II at Penywyrlod contained only animal bones, may be a clue to the sort of deposit that may be lying under the great heap of blocking material in the forecourt there, but one cannot know whether the possible posthole to the NW of the standing portal slab relates to a timber structure like that found in the forecourt at Gwernvale (p. 52). The small cist which was inserted into the revetment of the SE horn (p. 22) and contained a child's skull and some adult bones, has a partial parallel at Belas Knap, where several skeletons of children were apparently found under the lintel—a foundation deposit, no doubt, but not evidence of human sacrifice (p. 38).

In view of the radiocarbon evidence, already mentioned (p. 30) for the rough contemporaneity of end-chambered and laterally-chambered cairns in the Severn-Cotswold group, one may not be able to follow Grimes' suggestion (Grimes 1960, 39) that the latter developed locally from the former as a result of a growing desire for concealment, but this motive may have played a part in the development of laterally-chambered tombs in western France, where forecourts of various kinds undoubtedly existed at an early date, carrying on traditions found at the entrance of some Millaran passage graves, where *betyls* were placed (Daniel 1963, figs. 8 and 9). The

¹¹ *Current Archaeology*, III (1971), 7-10.

straight or slightly convex façades of some Breton long cairns show a certain relationship to British sites like Wayland's Smithy II (Atkinson 1965) and a number of earthen long barrows (Ashbee 1970), but a tendency to a slightly concave forecourt already appears early in the fourth millennium at Cairn I, Le Colpo (Morbihan, L'Helgouach and Lecornec 1976, fig. 19), and a deep forecourt appears in an end-chambered long cairn at Chez Vinaigre near Angoulême (Daniel 1960, fig. 46, 2), in the area where one might suspect the background to some elements in the Severn-Cotswold tradition to lie (p. 30). There appear as yet to be no published examples of these 'dummy' portals in laterally-chambered long mounds in this area, but these may come to light when more modern and complete excavations of megalithic sites are carried out in the interior of western France.

THE CAIRN AND ITS WALLS

There is no doubt that the mode of construction of the cairn at Penywyrld embodies a common tradition which links the Severn-Cotswold chambered long cairns as a whole with their supposed continental relatives of the fourth millennium BC. While the fabric of the mound itself, consisting entirely, as it does, of weathered or split sandstone blocks and slabs, with an outer casing of small stones and earth, may differ from some other cairns, like Gwernvale, where earth was apparently mixed with the stone throughout (p. 56), the provision of inner and outer revetment walls all the way round the cairn is a feature which occurs in well-built and well-excavated cairns, both round and long, throughout the Atlantic province, from Iberia to western France and the Cotswolds. Good examples in Brittany are the round cairn, with passage grave, at Le Noterio (Morbihan) and the laterally-chambered long cairn at Barnenez (Finistère, L'Helgouach 1965), while the long cairn at Commune-Sèche, Colombiers-sur-Seulles (Calvados) is one in Normandy,¹² and examples occur in the cairn cemetery at Bougon in Poitou (Mohen 1977).

The contrast between the inner revetment, which is solidly built and high, and the outer revetment wall, which is built of thin split slabs, is a Penywyrld feature which recurs at other Brecknock sites, notably at Gwernvale (p. 57). As at the latter site, the inner wall at Penywyrld, built as it is with larger blocks and slabs, which are often weathered, is truly functional, and took the main pressure of the mass of the cairn material behind it. The outer wall appears not to have been as high as at Gwernvale (p. 143), nor was any clay bonding noticed, like that used for the outer wall at Gwernvale. The extent to which it therefore needed to be masked by 'extra-revetment'

material, distinct from that used to seal entrances, is hard to judge because of the prior damage done by the farmer along the NE side of the cairn. It could be argued, however, that the small number of tilted slabs close to the foot of the outer revetment wall opposite the entrance of Chamber III (pl. 9), which was functional, militates against an interpretation of the much greater amount of the similar material opposite the entrance of NE II, which was a 'dummy', as blocking material rather than 'extra-revetment' or mere cairn-collapse. It does seem that the weight of the steep sides of the cairn, if they rested on top of the outer revetment wall, might have caused the outward tilting of that wall which is visible in section close to NE III (pl. 9), but one would have to suppose that by that time a considerable amount of earth—possibly washed down from the outer casing of the cairn, had accumulated against the foot of this wall, as appears in the section at Chamber NE II (fig. 7, section c-d).

Whether or not the outer revetment wall was originally exposed for most of its length as a decorative, rather than structural, feature, the writer has less doubt as to the function of the remarkable buttress of tilted slabs, bedded in a pit at the tail of the cairn (p. 24, pl. 10c). It is hard to see what this could have been but a local measure, made necessary by the imminent collapse at this point of the outer revetment wall, possibly some time after the construction of the cairn. Elsewhere, notably near the SE horn, it is easy to interpret the collapsed material outside the outer wall as the simple result of decay.

The care with which Penywyrld was constructed initially is shown by the use of marker blocks, as at Pipton (Savory 1956, 38f) and Ty-isaf (Grimes 1939, 124, pl. XIII, 3), but apparently not at Gwernvale (p. 146). As at Gwernvale, however (p. 62), there was no evidence that the outer revetment walls were deliberately bedded down in a slot with floor sloping outwards, as Grimes reports at Burn Ground (Grimes 1960, 52-59). Another link with the elaborate cairn-structure traditions of Severn-Cotswold long cairns and even of earthen long barrows is the cross-wall which runs from the back-slab of NE II to the line of the main axis of the cairn. This may well be one of a series, like that observed at Ascott-under-Wychwood (where a whole series of walls crossed the full width of the cairn).¹³ At Penywyrld one cannot know at present how many other such cross-walls were present, but one can be fairly sure that there was no axial wall like that at Randwick, Glos., for example (Corcoran 1969, fig. 9), since this should have been visible at the NW corner of the farmer's excavation. Once again, however, it should be pointed out that cross-walls and axial walls are another link with traditions of long cairns in Armorica, for good examples of both have come to light recently at the Tumulus de

¹² *Gallia Préhistoire*, 16 (1973), 361-5.

¹³ *Current Archaeology*, III (1971), 7-10.

la Commune Sèche, Colombiers-sur-Seulles (Calvados).¹⁴ Finally, the relatively well-preserved section at Penywyrlod (fig. 7), with its earth casing, does not support Corcoran's theory that Severn-Cotswold long cairns were axially ridged (Corcoran 1969, 57, fig. 18).

THE QUESTION OF MULTI-PERIOD CONSTRUCTION

As at Gwernvale (p. 142), there is no compelling evidence at Penywyrlod that would persuade us that this long cairn was not planned and completed as part of a single operation by a community whose dead found a last resting place there. Corcoran did, indeed, suggest that this was not the case at Ty-isaf and Pipton¹⁵ (on the strength of evidence from his own excavations of Scottish sites), and he might have argued in the same way from the massive inner cairn which appears to enclose the Main Chamber at Penywyrlod (p. 16, pl. 8*c* and *d*). But there is no reason to believe that such inner cairns, whether at Notgrove, Ty-isaf, or Penywyrlod, were more than stages in the construction of large monuments in which there were several chambers, some of them constructed of large orthostats which were habitually not bedded deeply in the ground and may have presented problems of stability. It would certainly be a complete misconception to treat the outer revetment wall as an addition made after a long lapse of time, in connection with the insertion of lateral chambers to supplement the Main Chamber: we have already seen that Chamber NE II is contemporary with the cross-wall behind it, which must relate to an early stage of construction of the cairn (p. 33). Mohen similarly, after his careful excavation of the small, laterally-chambered long cairn, with inner and outer revetment walls, at Bougon *E* (Deux-Sèvres) rejects the idea of multi-period construction (Mohen 1977). The possible posthole near the portal, however (p. 22) might be interpreted, in the light of the evidence from the forecourt at Gwernvale (p. 52), as part of a timber-framed 'mortuary house' or platform which occupied the area of the forecourt before this was completed and blocked. This gains some support from the discovery of some fragments of human bone, including burnt ones, close to the portal (p. 22), which constitute the only traces of pre-cairn

activity observed in the area of the farmer's excavation. The slight traces of activity outside the revetment wall near the entrance to NE III, represented chiefly by pot-sherds, came from a level near the base of that wall and is likely to be connected with the use of the chamber. There is no reason why the small cist inserted in the outer revetment of the SE horn (p. 22) should be regarded as much later in date than the cairn as a whole: indeed, it is surely best explained as a foundation deposit connected with the completion of the forecourt blocking.

THE BURIAL RITE

Clearly there are limits at present to any discussion of the burial rite at Penywyrlod, since at least one and possibly several burial chambers remain unexplored. We can only say that the bones in NE II and the forecourt cist, and probably those in Chamber NE III, represent what Piggott (1969) has called 'reserved' collective burial (as opposed to 'direct'), in that all the bones are disarticulated and seem to have been brought for reburial from some temporary resting place, which in the case of Penywyrlod might have been a timber-framed mortuary platform at the site afterwards occupied by the forecourt. Although, as Miss Luff has pointed out (p. 36) some important bones are missing from the minimum of six individuals represented in NE II, this does not amount to proof of deliberate large-scale robbing of skulls and long bones as suspected as West Kennet (Piggott 1962, 21-26, Appendix I). Deposition in NE II presumably was a single act, followed by sealing and offerings of animal bones in the filling of the 'dummy' entrance passage. Whence these bones came, if not from a forecourt structure as suggested already, is a matter for speculation, but one cannot leave out of the possibilities the Main Chamber, which seems to have been ritually blocked almost to the level of its capstone, like the main chamber at Pipton, which had been filled in with fine earth after removing nearly all the bones which may originally have lain in it (Savory 1956, 21-22)—unless, indeed, it never had more than a few. The poverty of the grave goods is a familiar phenomenon both in chambered and 'unchambered' long mounds which seems to be related to reburial, as Ashbee suggests (Ashbee 1970, 74).

¹⁴ *Gallia Préhistoire*, 16 (1973), 361-5.

¹⁵ *Current Archaeology*, III (1971), 281-7.

Appendix

THE HUMAN AND ANIMAL REMAINS

Contributions by *Rosemary M. Luff*,¹⁶ *Dr D. R. Brothwell*,¹⁷ and *T. P. O'Connor*¹⁸

The bones, both human and animal (including *Mollusca*), have been studied by Rosemary Hooley, who took part in the excavations in 1972, but notes on the most complete skulls found in the lateral Chamber NE II have been contributed by Dr Brothwell (1974) and Mr O'Connor (1979). The human bones from Chamber NE II represent virtually the whole of a sealed charnel deposit, in all probability placed in the chamber at one time and not subsequently disturbed before 1972 (p. 19). Those from lateral Chamber NE III represent probably only part of a deposit which may have been periodically accessible; only the entrance area of this chamber could be explored. Here too, however, none of the bones were articulated (p. 20). The only other bones from the 1972 excavation were a child's skull, poorly preserved, and some minor bones from a small disturbed cist adjoining the forecourt (p. 22), a few scraps from the badly wrecked lateral Chamber NE I, and some human skull fragments, mainly burnt, found in the filling of the socket of the fallen Portal orthostat (p. 22). The animal bones and shells of *Mollusca* nearly all came from Chamber NE II; the former were notably absent from the old surface layers underlying the cairn.

Lateral Chamber NE II

At least six adult individuals are represented, including three male and one female. None of the bones were articulated and in general they were jumbled, although an attempt had been made to establish some kind of order by stacking many long bones against the NW, SE, and end slabs of the chamber. The farmer's activities had caused the main SE slab to tilt towards the interior of the chamber, where the collapsed material on a level with the upper edge of the slab contained the almost intact dolichocephalic skull of a young man which led the farmer to contact the National Museum of Wales in 1972.

Evidence that six adults were present is provided by the intact fibulae, tali, and fragments of

mandibles. Once the bones had been sorted out it could be seen that no skeleton had all its parts intact: various bones were missing and these were not necessarily the smallest (*eg* four left navicular bones, which are small, were present, but three right tibiae are missing). Only one skull was found more or less intact, as already mentioned, towards the NE end, 1.5 m from the SW end, at an upper level. The mandible from this skull was found near the middle of the chamber, 1 m from the SW end, while the basioccipital bone came from the top of the deposit near the SW end of the chamber. It is of course possible that all the bones of this skull had been together before the chamber was first broken into in 1972. (Comments by D.R.B. and T.P.O'C. on this skull are given below). The rest of the scattered skull remains, particularly the mandible fragments, represent five adult individuals. Although most of this material was fragmentary, some robust mandibles were present, with well-defined muscle attachments; also two substantial crania. One of these had the frontal and parietal bones intact, showing the coronal, sagittal, and part of the lambdoidal sutures. The other consisted of the right and left parietals together with the frontal. Both crania exhibited a smooth contour with a fair degree of osteoporitic pitting (cause unknown). The two sets of long bones could be attributed to two individuals (both probably male). The average age of the individuals represented would be in the range of twenty to thirty years, two being probably of an age between seventeen and twenty-five, since the wisdom teeth have recently pierced the bone. Four sacra in good condition were discovered, giving a ratio of three males to one female. Parts of two human individuals were also found in the 'dummy' entrance passage (p. 19). Of the skull from this chamber noted below, the following bones are missing: both zygomatic arches are broken, and a considerable area is missing from the occipital bone and back of right parietal bone. The left parietal bone is fragmented into five pieces.

¹⁶ Now Mrs Hooley, Lucy Cavendish College, Cambridge.

¹⁷ University of London Institute of Archaeology.

¹⁸ York Archaeological Trust.

There is a horizontal crack in the right squamous temporal bone; the body of the occipital bone has broken away and was found separately. A piece is missing from part of the mastoid process and the back of the petromastoid from the left.

R.M.L.

Notes on complete skull from Chamber NE II (from correspondence 1974). The sex of the skull is male and the age possibly twenty-three to twenty-eight years. It is not an atypical Neolithic skull, although the frontal is perhaps fairly broad (but this can be explained by the open metopic suture—usually correlated with broad frontals). There is noticeable but not severe osteoporitic pitting on much of the upper part of the cranial vault (aetiology uncertain). There is also slight orbital osteoporosis. The teeth are in good condition, and deserve no special comment from me except to say that there is a slightly unusual post-mortem calcium deposit over parts of the crowns 876/8. There is also post-mortem damage and erosion at both mandibular rami.

D.R.B.

Report on complete skull from Chamber NE II. The skull has been broken in several places and subsequently reconstructed, and it was felt that in view of this, several of the standard anthropometric measurements should not be taken as they may well be altered by the reconstruction. A number of other measurements were unavailable as a result of parts of the skull and mandible being missing.

Although the attribution of sex to skulls is at best only approximate, this skull presents a generally rather masculine appearance, the overall shape being distinctly angular, with well-developed supra-orbital tori and external occipital protuberances. The mastoid processes, however, are quite small. The fused state of the basisphenoid synchondrosis and the degree of attrition of the molars indicate the age of death to have been in the range of twenty-five to thirty years.

The teeth are in an excellent state of health, with no trace of caries or abscess, and no macroscopic indications of enamel hypoplasia or periodontal disease. Slight interproximal calculus is present throughout both jaws, and there are small calculus deposits around the labial side of the crown/gum margin on all the molars and on the maxillary premolars.

Several interesting discontinuous traits are present. There are Wormian ossicles in considerable numbers in the coronal, sagittal, and lambdoidal sutures. As well as these, there are epipteric bones, parietal notch bones, and asterionic ossicles, all present bilaterally. The mesofrontal suture has retained the unfused condition into adult life, and shows no signs of fusing. Parietal foramina are present bilaterally. Lastly, the nasal septum appears to have been displaced to the right, although there are

no convincing signs of a trauma which would explain this.

The external surface of the posterior part of both parietal bones and an adjoining area of the occipital bone show a rather granular roughening, or very fine pitting, which has the appearance of an inflammatory reaction by the bone to some localized event, possibly an infection. The condition need not have been serious and the condition could be accounted for by an inflammatory scalp disorder or some similar infection. The reaction is limited to the surface of the skull and there is no penetration into the diploic tissue.

The dental formula is given as follows:

$$\begin{array}{c|c} / / / / P / P P & P P / / / / / / \\ \hline / / / / / / / / & / / / / / / / / \end{array}$$

The following measurements were taken (in mm):

Biasterrionic breadth	115.1	Post-orbital constriction	115.0
Frontal arc	130.0	Frontal chord	110.7
Parietal arc	135.0	Parietal chord	119.9
Occipital arc	126.0	Occipital chord	98.0
Nasion-Alveolare	71.7	Max. breadth pyriform aperture	23.1
Palatal length	50.9	Palatal breadth at M2	38.6
Mandible: Bimentalia breadth	44.5		
Height of corpus in sagittal plane	35.9		

T.P.O'C.

Lateral Chamber NE III

The remains of seven people were recovered from the front part of this chamber, to judge by the fragments of mandible. Among these were five adults, including a rather elderly person, one adolescent of thirteen to nineteen years (distal end of left humerus), and a child of five to eight years (mandible and teeth). The mandible of the elderly person was very thin and all the teeth sockets had healed except for three where two incisors and a canine existed. Of the other adults two were probably in the seventeen to twenty-five years range. Fragments of human bones, representing at least two individuals, were also found in the entrance passage.

R.M.L.

Socket of fallen Portal Orthostat

Various fragments of burnt bone from the filling and a fragment of a human temporal bone from the upper filling.

R.M.L.

Cist adjoining Forecourt

The bulk of the fragments from the cist formed the skull of a human infant. Both first and second deciduous molars were in wear at the time of death. The first permanent molars were all unerupted, the roots of these molars still being unformed. The crowns were just breaking through the alveolar bone. An age in the range of three to four years is indicated. The mesofrontal suture was fused at the time of death.

The post-cranial fragments that were present could be attributed to the infant. Two fragments were of a juvenile atlas vertebra. Although fragmentary, the atlas showed no signs of damage consistent with violent trauma. The remaining fragment was of an immature first left rib, again consistent with the cranium. Also present in the assemblage of bones was an adult petro-mastoid bone, probably of a woman, and left and right upper first molars. The degree of attrition on the molars would indicate an age in the region of thirty to thirty-five years. The left molar was blackened and cracked in a manner suggestive of having been in a fire.

Although this can only be conjecture, it seems probable that the infant skull was placed in the cist after it had reached a skeletal state, having been picked up from a more extensive deposit of bones. Had the infant been decapitated at, or soon after, death, the atlas vertebra would certainly have stayed in association with the skull, but this would not account for the presence of the rib fragment or for the fragments of adult skull.

T.P.O'C.

Pathology of Bones

Only a few bones exhibited osteo-arthritis, which is surprising in view of heavy incidence normally found in Neolithic communities. For example, in Chamber NE II slight lipping was observed in some vertebrae and the head of a right humerus showed distinct lipping, a right radius (proximal) was lipped and the joint of a right femur and tibia was well worn. The unusual curvature of a left radius (distal) from the entrance passage of NE III was due to Colles' Fracture which had subsequently healed. The rest of the bones showing chips and breaks were damaged after death.

R.M.L.

Osteological Character of the Bones

Indexes for platymeria and platycnemia can be seen in the table below. The results showed an inclination towards the platymeric condition although only a few intact long bones were available for study. The features of platycnemia, however, were not emphasised at all lateral distal surfaces. Squatting facets were present on three tibiae (a right and a left tibia from NE II and a left tibia from NE III). Sometimes the anterior and posterior facets of the calcaneum were fused, but in most cases they were not. A supra-occipital bone on a skull from NE II displayed a

prominent occipital boss characteristic of Neolithic specimens. The humerus characteristics associated with the use of a sling (Cameron 1934) could be seen in a right humerus from NE II. However, it might be sobering to reflect that there are wide variations of these features within the present day civilized populations.

R.M.L.

Estimation of Stature

Using the formulae of Trotter and Gleser (1952, 1958; see also Cameron 1934, Dupertuis and Hadden 1951), the following estimates have been made from femora of which particulars are given as follows:—

1. <i>Femur</i>	44.6 cm	($\times 2.32 + 65.53$)	height = 5 ft 5 in
2. <i>Femur</i>	39.1 cm	($\times 2.32 + 65.53$)	height = 5 ft 1 in
3. <i>Femur</i>	44.2 cm	($\times 2.32 + 65.53$)	height = 5 ft 5 in
4. <i>Tibia</i>	36.5 cm	($\times 2.42 + 81.93$)	height = 5 ft 5 in
5. <i>Humerus</i>	32.3 cm	($\times 2.89 + 78.10$)	height = 5 ft 6 in
6. <i>Radius</i>	24.5 cm	($\times 3.79 + 79.42$)	height = 5 ft 7 in
7. <i>Ulna</i>	26.5 cm	($\times 3.76 + 75.55$)	height = 5 ft 8 in
8. <i>Ulna</i>	27.0 cm	($\times 3.76 + 75.55$)	height = 5 ft 8 in

Five out of seven femora illustrated the platymeric condition. Using the formula given in Brothwell (1972, 89) the following platymeric indices were found: 80.7; 76.4; 55.5; 71.5; 71.4. The remaining two femora illustrated a eurymeric condition. Of the five tibiae examined none showed platycnemia and using the formula given in Brothwell (1972, 91) the following indices were found: 67.56; 75.75; 74.3; 70.28; 74.06.

R.M.L.

Animal Bones

These were mainly found in the filling of the 'dummy' entrance passage of Chamber NE II. A mandible of a young fox cub found in the lower filling could hardly represent the burrowing activities of this species, and this tightly packed lower filling also yielded calf bones (two rib fragments, a third phalanx, a cannon bone and a long bone fragment) and sheep bones (two cannon bones from forelegs, a right innominate and a tibia). The only animal bone found in Chamber NE II itself was the second phalanx of a wild pony. The entrance passage of Chamber NE III yielded the remains of red deer (tibia and four cannon bones of fore and hind limbs); one molar tooth of a pig was found in the chamber itself, as well as a shaft of a sheep tibia fashioned into a possible musical instrument (see finds report above).

R.M.L.

Mollusca

From the blocking of the 'dummy' entrance of Chamber NE II came five shells of *Cepaea nemoralis* (Brown lipped snail) and one specimen of *Oxychilus cellarius* (Glass snail). From the filling of Chamber NE II came specimens of *Discus rotundatus* (Rounded

snail), *Cepaea hortensis* (White lipped snail), and *Cepaea nemoralis*. From Chamber NE III came one specimen of *Cepaea nemoralis*. The habitat of *Cepaea nemoralis* is commonly woods and hedgerows; *Discus rotundatus* has a wide variety of habitats, but prefers shaded places (see Ellis 1969, and Evans 1972).

R.M.L.

a. Penywyrlod: view of NE side at time of discovery in June 1972.



b. Tail of cairn from NW before disturbance by farmer and before excavation. Scale 6 ft.



c. High level view from SE following excavation in 1973. (*R. C. A. H. M. Wales*)





a. Portal before excavation, viewed from interior of cairn to NW; fallen orthostat to left.



b. Portal from NE with base of outer revetment wall and forecourt blocking to left and fallen orthostat to right. Scale 3 ft. (*Newport Museum and Art Gallery*)



c. Fallen orthostat of portal from NW with its original socket in centre and portal blocking on right. Scale 3 ft. (*Newport Museum and Art Gallery*)



a. Remains of SE horn from W, with edge of displaced portal lintel in foreground, and displaced slab of cist to right. Scale divisions 1 ft.



b. Cist containing child's skull inserted in outer revetment of SE horn viewed from SE. Scale 3 ft. (*Newport Museum and Art Gallery*)



a. Forecourt blocking originally piled against SE horn, viewed from NW (fallen portal orthostat at lower right). Scale 3 ft.



b. Section through inner and outer revetment wall of SE horn, viewed from W, with forecourt blocking on right. Scales 3 ft.



c. View of cairn from SE with displaced ?lintel of portal lying on forecourt blocking in left foreground and outer revetment wall of SE horn in right foreground. Lateral Chamber NE I is visible in right middle ground, and Chamber NE II in section of farmer's quarry in background. Scale 3 ft. (*Newport Museum and Art Gallery*)



a. Capstone of main chamber visible in side of farmer's quarry, viewed from interior of cairn before excavation. Scale 6 ft.



b. Partially exposed end of main chamber, viewed from NE, with thrust blocks in foreground. Scales 3 ft.



c. Capstone of main chamber (right) shown in relationship to portal, viewed from interior of cairn. Scale 3 ft.



d. Detail of partially exposed end of main chamber, viewed from NE. Scale 3 ft.



a. Portal of lateral chamber NE I, viewed from site of chamber to SW. Scales 3 ft.



b. Lateral chamber NE I from S, with chamber NE II to left. Scales 6 ft.



c. Remains of lateral Chamber NE I, viewed from SW. Scale 3 ft. (*Newport Museum and Art Gallery*)



d. Inner and outer revetment walls to SE of chamber NE I, viewed from NE. Scale 3 ft.



a. Lateral chamber NE II and outer revetment wall, viewed from NE. Scale 6 ft.



b. Skeletal remains within interior of lateral chamber NE II, after partial clearance. Scale divisions 1 ft.



c. Lateral chamber NE II and outer revetment wall, viewed from E. Scale divisions 1 ft.



a. Remains of blocking slab of lateral chamber NE II, viewed from SE. Scale divisions 1 ft.



b. Dummy entrance passage of lateral chamber NE II, viewed from SW. Scale divisions 1 ft.



c. Cross-wall viewed from SW with end slabs of lateral chamber NE II to right. Scale divisions 1 ft.



d. Cross-wall viewed from SE with end slab of lateral chamber NE II at lower right. Scale 6 ft.

a. Lateral chamber NE III and outer revetment wall viewed from N. Scale divisions 1 ft.



b. Lateral chamber NE III and outer revetment wall from NE. Scale 6 ft.



c. Tail of cairn viewed from N, showing inner and outer revetment walls and extra-revetment material partially removed. Lateral chamber NE III is visible to the left. Scale 3 ft. (*Newport Museum and Art Gallery*)





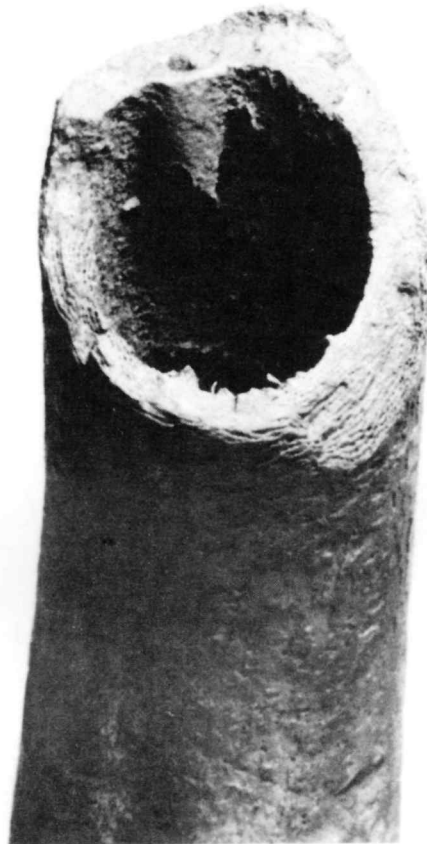
a. Tail and NE side of cairn from NW: the figure stands opposite the entrance to chamber NE III.



b. Detail of tail of cairn viewed from NE, showing inner and outer cairn walls and with extra-revetment material partially removed. Scale 3 ft.



c. Section of butress pit at tail of cairn viewed from NE. Scale 3 ft.



a. Bone ?flute from chamber NE III:
anterior aspect (length 74 mm).

b. Detail of proximal end.

PART 3

**The Gwernvale Long Cairn,
Crickhowell, Brecknock**

by W. J. Britnell

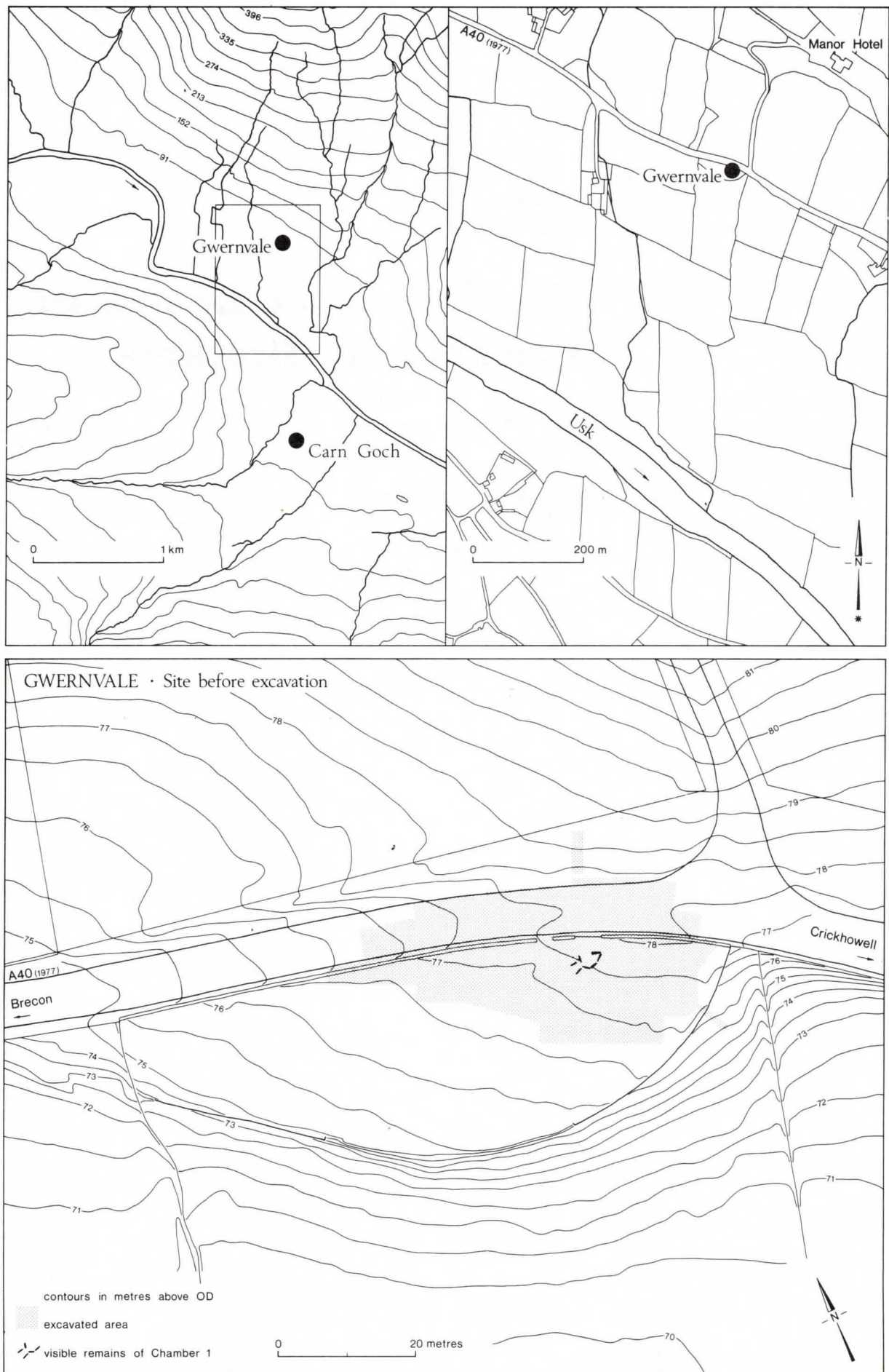


Fig. 11. Site location. In the upper part of the drawing *N* is by reference to the National Grid; in the lower part and on all subsequent plans *True North* is shown.

Introduction

Before excavation the single free-standing megalith known as the Gwernvale burial chamber stood in a small allotment on the southern side of the A40 trunk road. A first season of excavation took place between April and June 1977 in advance of the realignment of the road to a position to the south of the chamber, together with the construction of a new access to the Gwernvale Manor Hotel. Work in that year was essentially limited to the total excavation of the area directly threatened by the new road; it gave for the first time an indication of the general position and orientation of the original cairn, and confirmation that the known chamber formed one element of a long cairn in the Severn-Cotswold tradition. It became apparent that a substantial part of the monument underlay the former modern highway; once this had been closed there came the opportunity to undertake a second season of excavation between March and September 1978, which was designed by means of selective excavation to provide as complete a plan of the site as possible before it became landscaped into the verge on the northern side of the new road. The project was undertaken by the Clwyd-Powys Archaeological Trust for the Ancient Monuments Branch of the Welsh Office, who are now responsible for the care of the monument. (Preliminary accounts of the excavation and dating appeared in Britnell 1979 and Britnell 1980.)

I am most grateful to the following for their resilience and enthusiasm during excavation in one or other of the seasons: B. Bennison, M. Casey, Anne Crone, Ann Gilbert, M. de Lewandowicz, Katherine Mescall, D. Pollock, Virginia Quant, R. Shirley and J. Triscott. Shorter periods of assistance were given by Jenny Britnell, R. Roberts, S. Greuter, K. Parfit, Jane Price, S. Probert and T. Williams. Most of the on-site planning and drafting for publication has been carried out by Mr B. V. Williams. Helpful co-operation was given by the Ancient Monuments Inspectorate and the staff of the Brecon Beacons National Park, and hospitality by Mr and Mrs J. H. Usbourne. Valuable advice during the course of excavation was given by Professor R. J. C. Atkinson, Mr D. Benson, Professor W. F. Grimes, Frances Lynch, Mr C. R. Musson, Professor S. Piggott, and Dr H. N. Savory.

Acknowledgement must be made to the following for contributing reports which are published here: Dr S. Briggs, Mr T. C. Darvill, Dr P. Q. Dresser, Dr

H. S. Green, Mrs Elizabeth Healey, Dr J. Henderson, Frances Lynch, Mr T. O'Connor, and Dr W. J. Phillips. Assistance on various matters during the preparation of this report has been given by Mr D. Benson, Mr K. Brassil, Dr D. Browne, Dr J. G. Evans, Mrs M. Guido, Mr G. Hillman, Mr C. Houlder, Dr D. Jenkins, Dr Helen Keeley, Mr. J. Knight, Mr D. Moore, Dr P. Moore, Dr Jenny Price, Dr M. Price, Mr A. Probert, and Professor A. G. Smith. The text has benefited immeasurably from comments made by Dr I. Kinnes, Frances Lynch, Mr C. R. Musson, and Dr C. Smith at various stages of production. Typing, photographic work, and other invaluable assistance has been given by Jenny Britnell.

The finds are deposited in the National Museum of Wales, Cardiff; excavation records have been retained for the time being at the offices of the Clwyd-Powys Archaeological Trust, 7a Church Street, Welshpool, Powys.

Location of the site

(figs. 11, 12)

The Gwernvale chambered tomb lies to the south of the Black Mountains, on the northern side of the Usk Valley on a sand and gravel terrace at a height of about 76 m above sea level, almost 0.5 km to the west of Crickhowell (SO 211192). To the north the hillside gradually steepens until it reaches the craggy summit of the Old Red Sandstone upland at a height of about 700 m, no more than 3 km from the site. To the south the site overlooks the flood plain of the Usk, with the northern escarpment of the limestone uplands of Glamorgan rising to a height of about 500 m about 5 km in the distance to the south. The cairn is sited on reasonably level ground along the terrace, about 5 m above the flood plain. The close proximity of the eastern end of the cairn to the edge of the terrace has recently been obscured by the construction of an embankment for the new road. For several centuries at least, the cairn has been an obstacle in the path of one of the main arterial routes leading into Wales, which has also taken advantage of the same narrow strip of elevated level ground provided by the terrace.

Gwernvale lies at the southern limit of the distribution of the Black Mountains group of megalithic tombs, which is centred at Ty-isaf about 7 km to the north. It is 1.5 km from the

indeterminate megalithic structure at Carn Goch, Llangattock (Corcoran 1969, 23), and lies about 30 km from the nearest cairn within the coastal group of tombs in south-eastern Wales, and about 70 km from the nearest long cairn on the Cotswolds.

The Condition of the Monument before Excavation

The only remains of the tomb which were visible before excavation were certain of the orthostats of Chamber 1 (fig. 18, Orthostats 4-8, 10-11). Seven more or less complete stones formed a free-standing polygonal chamber about 3.3 m long, 1.8 m wide, and rising to a maximum height of about 1.45 m above a slightly sunken area inside it; an eighth broken stone (Orthostat 9) referred to in earlier publications had become obscured by rough stonework recently piled above it. Orthostat 8 leant into the chamber to be supported by Orthostat 7, and several of the stones forming the southern side of the chamber had cracks which had been cemented up. Rocks had been recently piled up to form a slight step at the entrance to the chamber between Orthostats 5 and 10, and Orthostats 4 and 11 indicated an entrance passage leading to the south-west. The only suggestion that any cairn survived at all was the fact that the surface within the chamber was lower than that outside by about 0.4 m, but even this information was uncertain: an account of the exploration carried out by Colt Hoare in 1804 stated that they had dug down into the natural soil below the base of the orthostats (p. 46).

Before the recent developments at the site the visible chamber stood within a small allotment of less

than half an acre (known locally, if somewhat jocularly, as 'Forty Acres') on the southern side of the A40, which passed within about 2.5 m of the chamber. The road curved round to avoid it, distinctly rising in height at a point opposite the chamber. The allotment was separated from the road by a delapidated dry-stone wall, which was breached to the north-east of the chamber by a gate and to the north by a gap into which iron railings had been inserted to allow the chamber to be viewed from the road. The land had formerly been cultivated, but was now heavily overgrown with brambles and bushes. The allotment was retained on its southern side by a curving dry-stone wall up to about 1 m in height and it was evident that the ground had been levelled out to meet it. Because of its small size and difficulty of access, cultivation had declined in favour of hunting (rabbit catching) and gathering (blackberries, hazel nuts, and horse-radish).

It is fairly certain that by the end of the eighteenth century only the single chamber remained clearly visible above ground level. The site was noted by several writers at about this time, and it became the subject of investigation by Colt Hoare, Fenton, and a group of local enthusiasts in the early years of the following century. These early accounts provide valuable information about the condition of the site at the time, and are the subject of an essay by Dr Briggs in the following section.

On surface indications the site held little apparent potential, even of fulfilling the modest objective of defining the orientation of the original cairn. Clearly much of the true nature of the site had been disguised

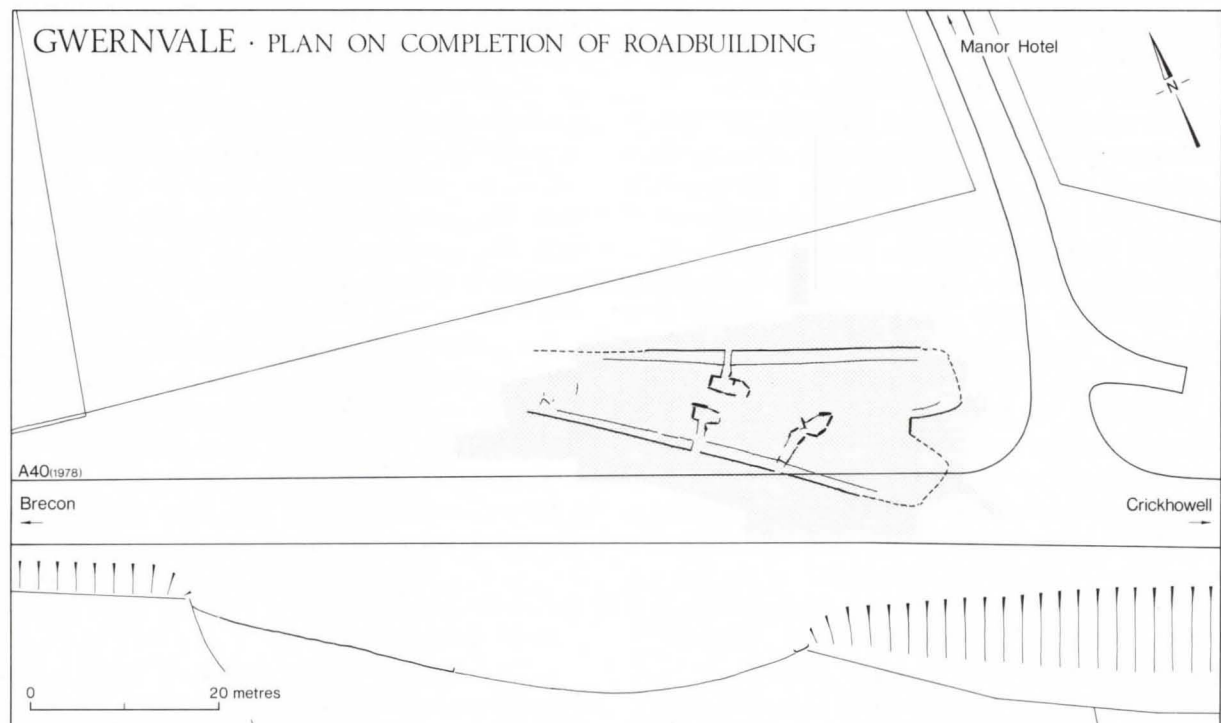


Fig. 12

by the presence of the road constructed across its northern side, but even so, it provides an object lesson in what might survive in the least promising of cases.

Due to an unfortunate combination of circumstances beyond the control or responsibility of the

author, substantial parts of the site intended for preservation were mechanically levelled before conservation and display were carried out for the Welsh Office. Plans giving an indication of the assumed extent of the damage and loss are housed with the excavation records.

Gwernvale in Antiquarian History

by Stephen Briggs¹

Early accounts of Gwernvale

Early references to prehistoric sites in Breconshire and parts of adjoining counties furnish small but useful records of known and lost megalithic monuments and of their former condition. Only Ty Illtud comes from Lhuyd's published collections in Gibson's edition of Camden's *Britannia* of 1695. A further site, Bryn y Groes near Talgarth, was mentioned in the *Parochialia* of 1696² and is still capable of useful interpretation. In general, however, eighteenth century tourist literature, both manuscript and printed, furnishes little information on megaliths. Most travellers tended to carry extracts from Gibson's *Britannia* and to rely upon the maps and commentaries of Speed, Saxton, Ogilby, and Bowen for information about sites.

Straddling a major route in and out of Wales, it is hardly surprising that the Gwernvale site should have been noticed by some travellers, and it seems odd that more did not mention it. Among those who troubled to remark upon it were Thomas Pennant, who in annotating the printed version of Wyndham's *A Gentleman's Tour through Monmouthshire and Wales, 1774* saw 'a stone 10 feet by 7 placed horizontally on five uprights exactly similar to the druidical ones we saw near Newport in Pembrokeshire'.³ Similar remarks were made by the Reverend Evan Evans in 1778, who noted that:

'on the right hand side of the road close to the hedge leading to Crug Hywell and a few hundred yards from the place we entered on it, I discovered a cromlech supported by four or five short pillars. I could not easily discover which, as it was covered at the lower or southern end with earth.'⁴

Turning his attention to the exploration of Britain when prevented by the French Wars from seeing the Continent, Sir Richard Colt Hoare first visited Wales in 1793. With the sharpened eyes of the 'grand tourist' he saw at Gwernvale 'a circular stone supported by others of a similar size beneath it'.⁵ Before it was radically altered in 1804, Manby counted four stones at the site and associated it with druidical rites.⁶ There is little remarkable about this or any of the other early accounts of the Gwernvale megalith; but they do serve to demonstrate that the road passed to the north of an artificial mound capped by a large stone, and that this mound was one of three such 'cromlechs' known to antiquarian scholarship in Breconshire at the time—Ty Illtyd, and Bryn y Groes or Croesllechau making up the total.

Sir Richard Colt Hoare and the 'experiment' in 1804⁷

The story of how Colt Hoare came to Wales has been told by Woodbridge (1970, especially pages 154-64). He made tours, usually to Wales, almost annually from 1793 until 1816, and during the earlier part of this period combined his collection of scholarly information for a forthcoming edition of *Giraldus Cambrensis*⁸ with barrow digging at home in Wessex. The barrow digging had been initiated by Cunnington and was carried out by him with Archdeacon William Coxe, but Hoare was to buy out both the finds and records of the work and publish them for himself in his *Ancient Wiltshire* of 1812 (Cunnington 1975, 44-55). He had thus bought

¹ The information used in this account was collected by me in part while working on the Commission's forthcoming *Inventory* for Brecknockshire, and in part as private research, and appears by courtesy of Mr P. Smith, Secretary RCAM (Wales). I must acknowledge the assistance of my wife, Caroline Kerkham and Miss Penny Ward for useful discussion of tourist accounts and of Richard Fenton, respectively. I am indebted to the Cambrian Archaeological Association for a research grant which enabled me to consult Colt Hoare Manuscripts in 1976.

² National Library of Wales (NLW), MS Peniarth 251, fol. 38

³ NLW MS 25898, fol. 198a.

⁴ NLW MS 20498, fol. 44.

⁵ Cardiff Public Library (CPL) MS 4.302, fol. 5; 3.127 3/6, fol. 11.

⁶ G. W. Manby, *An Historic and Picturesque Guide from Clifton through the Counties of Monmouth, Glamorgan and Brecknock*, Bristol 1802, p. 207.

⁷ The phrase here is borrowed from Jones' *The History of Brecknock*, vol. II, 1809, p. 435.

⁸ Giraldus Cambrensis, *Itinerarium Cambriae: the Itinerary of Archbishop Baldwin through Wales, A.D. 1188* by Giraldus de Barri, translated into English, and illustrated with Views, Annotations and a Life of Giraldus, 2 vols, London, 1806.

himself the complete mantle of a digging antiquary and this he carried to Wales, where he became involved in a lifelong relationship with Richard Fenton, a Pembrokeshire man of like spirit.⁹

In Wales, the period 1803 to 1807 was one of intense activity during which both men travelled widely, observing and collecting as they went. In pursuit of Giraldu, Colt Hoare built up a small local scholarly circle to aid him with the task.¹⁰ Sir Richard first met the ebullient Theophilus Jones the 'Brecknock Historian' through Richard Fenton, and through Jones both were introduced to the Reverend H. T. Payne of Llanbedr, Crickhowell, on 22 May 1804 (Fisher 1917, 23). During subsequent hospitality on 24 or 25 May Colt Hoare got 'from each some useful notes for my Giraldu'.¹¹ At this time Hoare was more closely involved in antiquarian digging than ever before, so that it is not surprising to find the participants at dinner that day 'indulged in the Evening in conversation, anticipating the business of the Cromlech meant to be examined the following day' (Fisher 1917, 25). From which one of the party the initiative came will probably never be known for certain, but the circumstances point strongly to Colt Hoare. Strangely, so far as is known he had never dug a megalith before; his experience with Cunnington and Coxe was almost exclusively on earthen round barrows. The projected excavation was therefore a novelty not only to the Welshmen, but also to their digging teacher, and for this reason the 'experiment'—for such it was—takes on a considerable importance to the history of barrow digging.

On the morning of 26 May, after a hearty breakfast, Jones, Fenton, and Colt Hoare took to their horses, 'and a pleasant ride' brought them 'to the scene of action about a Mile the Brecon side of Crickhowell'. At the site they were watched or aided and abetted by Admiral Gell, Sir William Ouseley, and 'a Mr Everest'.¹² Four accounts of this event have survived, each very similar in outline, but varying in detail. Theophilus Jones described the site as follows:

'a huge tablet of unhewn rock, mounted upon five supporters pitched edgewise in the ground, the superincumbent stone, or cover, inclining to the south, and open in the front to the north; it was placed on a high mound, long overrun with brush wood and brambles, and formerly there seem to have been stones placed edgewise, also round what is now almost a semi-circle; whether before the turnpike road was made they extended so to describe an irregular circle, I

know not, but I am inclined to think that the appearance of the spot was materially affected by the interaction of the highway, and that upon that occasion the workmen, either from curiosity or accident, anticipated our attempt to make discoveries under the Cromlech'. (Jones 1809, 434-35).

Fenton provides specific detail of the excavation methods:

'We found the Incumbent Stone, after being split in two, removed from off the Supporters, and the small Area within was soon cleared, till we got below the bottoms of the Supporters, and found nothing but small bits of Charcoal and several small Bones. There was a piece of dry wall regularly built between two of the upright stones, which appeared to be coeval with the Cromlech, what I never saw before in any'. (Fisher 1917, 25-26).

Colt Hoare relates that the capstone was only removed with some difficulty, though omits to mention the discovery of bone,¹³ while it was left to Payne to furnish the measurements:

'This cromlech . . . consisted when perfect, of a large tablet, and quoit of unhewn stone, mounted on five supporters pitched edgewise in the ground, declining to the south, and open in the front, including an open space beneath, nearly 7 ft 4 ins long, 4 ft 6 ins deep and only 2 ft 6 ins high. The incumbent stone measured 10 ft in length, 7 ft 8 ins in breadth and 1 ft 6 ins in thickness. It seems to have stood with a circle of loose stones, heaped together, a part of which, till lately, was remaining'.¹⁴

Payne claimed that they had dug down to 'a depth of more than 5 ft considerably below the bottom of the supporters, and into the natural stratum of the soil'; he also mentions charcoal though not bones. In an earlier account, Payne had described the capstone as 'placed in a declining posture, from the front, which is open to the back stone, in the form of a desk'.¹⁵

The object of this whole operation had been to assess the function of the chamber; the burning issue was 'Is it sepulchral or altarial?'.¹⁶ Uncertainty on the matter seems to have clouded the conclusions drawn by Colt Hoare,¹⁷ while Fenton felt that 'nothing turned up that could favour the supposition of their being sepulchral' (Fisher 1917, 26), a conclusion shared with Payne.¹⁸ It is of interest that Colt Hoare should at the time have compared this structure with Bronze Age cists, from which type of site it materially differed,¹⁹ since there was no doubt from his Wessex work that these had held burials. His uncertainty in this discussion further goes to underline that he was for the first time dealing with a different tomb-type. Having set out to ascertain the function of the

⁹ For a full consideration of Fenton see P. Ward 'Aspects of the work of the Pembrokeshire Antiquarian Richard Fenton, 1747-1821', MA Thesis presented to University of Wales, 1978.

¹⁰ Through contemporary correspondence the writer has made a study of the relationship between Hoare and his circle and the finished text of the 1806 *Itinerarium Cambriae*.

¹¹ CPL MS 3.127 (dated 1803).

¹² For Gell and Ouseley see *Dictionary of National Biography*; Ouseley was one of the well-known family of Persian scholars and antiquaries. This Mr Everest, the owner of Gwernvale, was the

father of the well-known surveyor after whom the peak was named.

¹³ CPL MS 4.302 1/6, fol. 110/213.

¹⁴ Payne MSS in Brecon Museum.

¹⁵ NLW MS 4378, p. 169 (dated 1787).

¹⁶ *loc cit* footnote 13.

¹⁷ *ibid*.

¹⁸ *loc cit* footnote 14, p. 42.

¹⁹ *loc cit* footnote 13.

monument this 'handful of distinguished men'²⁰ who took it apart appear to have failed in their prime motive, and furthermore left it in a less picturesque state than they had found it.

Recorded excavation upon archaeological sites in eighteenth century Wales are rare. Banks is known to have caused a barrow to be opened near Edwinstford while passing through Carmarthenshire in 1767, and this would appear to have been one of the first barrow excavations in Wales.²¹ A handful of names come to mind when considering contemporary men who also engaged themselves in digging barrows, but Gwernvale is singular in its having been megalithic and that Colt Hoare directed the work there despite a complete lack of experience at this type of site. More important than the immediate inconclusive evidence which they extracted from the site was the effect the exercise was to have upon Payne and Fenton, even, possibly, upon Ouseley. Each was to be so inspired as to continue the quest for answers to problems of the altars and sepulchres by excavating numerous barrows within the Principality. Fenton, whose close relationship with Colt Hoare was to last until Fenton died in 1821, opened mounds in the Counties of Anglesey, Cardigan, Carmarthen, and Pembrokeshire, while Payne left alone few cairns within a ten mile radius of Crickhowell. Gwernvale may thus be seen to have been the focus of a short chapter in the history of Welsh antiquarianism, which was to have a profound influence upon the immediate aspirations of antiquarian excavators. Through Colt Hoare and his circle it may be said that the county histories of Brecknock, Monmouth, and Pembroke were born. In digging Gwernvale, Colt Hoare was to implant the seed from which grew scientific excavation in Wales.

The site after 1804

More significant in the history of the site even than the destructive exploration of 1804, was its position beside an important turnpike,²² and as we have already noted, Theophilus Jones thought 'the spot materially altered by the interaction of the highway'. In many ways it is surprising that the Gwernvale megalith survived as long as it did, since the stones around it would have supplied useful hardcore for the road. Certainly, after its capstone had been overthrown there might have seemed little to inhibit final and total destruction, had the site not formed part of the estate of Mr Tristram Everest, whose fashionable

residence overlooking the megalith at Gwernvale faced Admiral Gell's *Glanwysg*, erected to the design of John Nash in a vale considered to have been one of the most picturesque in Wales at that time. The megalithic site must have formed an important landscape feature within Everest's grounds and saved him going to the trouble of erecting a Druidical Circle to enhance his vista. That in 1844, when listed under the Tithe Award Schedule for Crickhowell (allotment no 322),²³ it was under grass and was known as *Druid's Temple*, clearly underlines the strong probability of this suggestion.

None of the early investigators of the site appears to have left a pictorial record of the site either before or after its excavation and the only known painting, a watercolour in the National Museum of Wales, inscribed simply 'Cromleck, Breconshire' (Moore 1976, fig. 17), is most probably of another site. Whereas the cromlech is shown with a capstone in 1832, its artist, Pryce Carter Edwards, was looking at it twenty-eight years after its excavation and is unlikely to have known if it had ever had a capstone.²⁴

There are few references to the site in the later nineteenth century, by which time it appears to have sunk again into obscurity. In 1862 it was said to stand 'in a garden close by the roadside, and is fortunately protected from public curiosity by bushes',²⁵ and this seems to have been its fate until it was visited in the 1920s by O. G. S. Crawford and brought by him to the attention of modern research; his forlorn prophesy—'the chamber is now used as a receptacle for old pails, bottles and jam jars, and is probably, from its position, in considerable danger of destruction' (Crawford 1925, 59-60)—would with the construction of the new road seem to have been very largely fulfilled. The site has no name of any antiquity, and Crawford, concerned that 'its interest does not appear to be realised locally', seems to have first coined the name *Gwernvale* from its proximity to the former residence of the Everest family. It is highly probable that any of the cairn which had survived until the early nineteenth century had by this time been taken for further road-building, wall-construction, or had been landscaped away, and although Crawford suggests that the difference in level between the inside of the chamber and the area around it showed that some of the cairn may still exist, he was clearly unable to determine the relationship of the chamber to the cairn.

²⁰ A phrase used by Edwin Poole in his *Illustrated History and Biography of Brecknocks*, 1886, p. 2.

²¹ G. E. Evans, 'Journal of a Tour in Carmarthenshire', *Trans. Carm. Antiq. Soc.*, XV, pp. 14-18; 23-24.

²² An effort has been made to consult the various Turnpike Acts which affected this stretch of the road in order to discover if the site is mentioned as an obstacle to the route, but these were not available at the time of writing. The relevant Turnpike Acts are: 39-40 Geo. III, xv; 49 Geo. III, xiv; 51 Geo. III, lxii; 54 Geo. III, lviii.

²³ Tithe Award, Crickhowell Parish, NLW Department of Maps and Prints.

²⁴ National Museum of Wales, Art Collection, W1043, painting by Pryce Carter Edwards. The picture is more likely to be of a Caernarvonshire megalith than one in Breconshire. I am indebted to Dr H. N. Savory for useful discussion of this point in 1974.

²⁵ Anon 'Brecknockshire Antiquities', *Archaeologia Cambrensis* 1862, 232-34.

The first published plan of the site appeared in Grimes's survey of the Breconshire tombs published in 1936, where he again compared the chamber with those found within tombs on the Cotswolds, and suggested that it had been 'a 'secondary' (*ie* laterally placed) chamber (Grimes 1936*a*, 271, fig. 11). This identification has been largely accepted in later works

by Daniel (1950*a*, no. BRE 7) and by Savory (1956, 37), although Corcoran in returning to the somewhat ambiguous description by Theophilus Jones,²⁶ and wanting to find more sites which might be contained within round mounds, suggested that the site may have been surrounded by a circular peristalith (Corcoran 1969, 93, 274).

²⁶ Theophilus Jones probably copied verbatim from the 1806 *Parochial Visitation* of Payne (cited in note 14 above), and may not have fully understood what he was writing: Payne was merely describing the scatter of a mound.

CHAPTER I

The Structures Revealed by Excavation

PRE-CAIRN ACTIVITY

Deposits preserved beneath the cairn

(figs. 13, 14, 30; pl. 13a)

The tomb was built upon a terrace on the northern side of the Usk valley, rising abruptly about 5 m from the level of the alluvium within the valley floor. No doubt the terrace scarp is more marked today than it would have been formerly, as a result of recent landscaping (p. 93); denudation and possibly even quarrying at about the time of the tomb's construction may have altered its original contours. Although the area occupied by the cairn was reasonably level, the ground sloped up to a point chosen for the inner end of the forecourt; from here the original surface fell gently down to the edge of the terrace on the west and south-west, more sharply on the south and south-east where the scarp was much nearer, and slightly down to the north, before assuming the slope of the hillside above. There is no evidence that the ground had been specially prepared for the construction of the long cairn. Several large sandstone boulders rose through the soil profile between the area subsequently occupied by Chamber 1 and the forecourt of the cairn. Whether revealed by solifluction or by erosion of the gravel terrace before the construction of the tomb, they were clearly in naturally assumed positions. Other stones may have been removed before the construction of the cairn, but those remaining had been incorporated within the body of the cairn. One of the stones, standing with its long axis almost perpendicular, reached a height of about 0.7 m above the buried surface, and might have formed a focus for some of the pre-cairn activity (see 'natural monolith' on fig. 30).

The buried soils were examined in a number of places by Dr Helen C. M. Keeley, Ancient Monuments Laboratory, whose manuscript report forms the basis of the following description of a representative section beneath the cairn (Ancient Monuments Report no. 2670). The buried soil is a freely drained brown earth, similar to the neighbouring soils at the present day; its parent material is drift derived from the Old Red Sandstone. The buried topsoil has a mean pH of 7.2 (range 6.8-7.4) in distilled water, and earthworm activity was noticeable throughout the profile. Up to 0.10 m below the cairn the buried Ap horizon, containing many charcoal fragments, flints, and Neolithic

pottery sherds, was a relatively stone-free reddish-brown (5YR 4/3) coarse loamy sand; it was friable, with a moderate medium subangular blocky structure. Between 0.10 and 0.40 m was a buried B horizon, reddish-yellow (5YR 6/6) in colour, but otherwise similar to the Ap horizon. From 0.40 to 0.55 m was a Bt horizon which showed an increase in clay relative to the upper horizons and contained sand grains coated in clay. It was a moderately friable dark reddish-brown (5YR 3/3) coarse sand loam with a moderate subangular blocky structure; stones were common (about 10%) and were mainly large weathering sandstone fragments. Below 0.55 m the matrix still showed the results of downward clay movement, but weathering sandstone dominated the texture of the layer, which tended towards a coarse sand.

Excavation was limited to the removal of the buried topsoil (except where deeper trial pits and features were cut down to a lower level), which had an average depth of 0.13 m (range 0.10-0.20 m). Stones of the overlying cairn had sunk down into the buried soil, considerably lessening the depth of subsoil beneath in some instances, and it was also apparent that earthworm activity had contributed to this process towards the margins of the cairn (p. 62). Some features were defined within the topsoil and others only at the surface of subsoil and possibly disguised at a higher level by subsequent disturbance. There were no disturbances which had necessarily been caused by ancient agricultural activity, although the excavated areas of buried soil were probably too small to identify traces of this kind of activity. However, it would seem unlikely that ards would have been employed where so many boulders were present, and hand-digging might by its nature be less susceptible to identification.

Flotation and wet-sieving was carried out on part of the buried soil beneath the cairn (fig. 36) for the recovery of environmental evidence and artefacts. Unfortunately, there has been insufficient time to complete the study of carbonized plant remains, but preliminary analysis would suggest that these are quite rich (p. 141). Land snails were present in the buried soil, but their frequency is too low to provide meaningful discussion (Dr J. G. Evans, *pers. comm.*). No ancient pollens were preserved (Professor A. G. Smith, *pers. comm.*).

LATE UPPER PALAEOLITHIC AND MESOLITHIC ACTIVITY

The earliest periods of activity at the site are represented by little other than flint implements characteristic of Late Upper Palaeolithic and Mesolithic industries (discussed on pages 129-130). The distribution of finds at these periods is concentrated towards the eastern end of the site and near the edge of the gravel terrace (see distribution on fig. 58). The implements came largely from buried soils beneath the cairn, and from soils on its southern side, and they cannot be separated stratigraphically from each other, or from the pre-cairn Neolithic flintwork. In some instances Mesolithic types were found within undoubted Neolithic features, but the high probability of earlier finds occurring in later features weakens the relevance of this association. Some features contain only characteristic Mesolithic types, but again in most instances where this occurs, there is a suggestion that the features themselves may be of Neolithic date (eg F221 and F223, Table 7, p. 152). One burin probably of Mesolithic date (no. 104) was found in a crevice at the top of the natural monolith beneath the cairn (p. 122).

The only feature where there is good reason to suppose a Mesolithic date was an oval pit or hearth (F308), which was partly overlain by the outer revetment wall on the northern side of the Neolithic cairn, and partly sealed by the A horizon of the pre-cairn soil (fig. 30; section on fig. 16). Charcoal from the lower filling of the pit has been dated to *c.* 4945 bc (Appendix II); although no artefacts were contained

within the excavated northern side of the pit, the date is compatible with late Mesolithic flintwork found elsewhere at the site. The pit was 0.7 m long by at least 0.34 m across, and was 140 mm deep below the surface of the B horizon of the buried soil. The lower fill was composed of black ashy soil which contained fragments of charcoal, and this was sealed by a layer of thin slabs of weathered sandstone.

The absence of any other features which can be securely attributed to these early pre-cairn phases require that discussion of the nature of this activity is limited to a consideration of the flintwork.

PRE-CAIRN NEOLITHIC ACTIVITY

(figs. 13, 14; pls. 15a, 16)

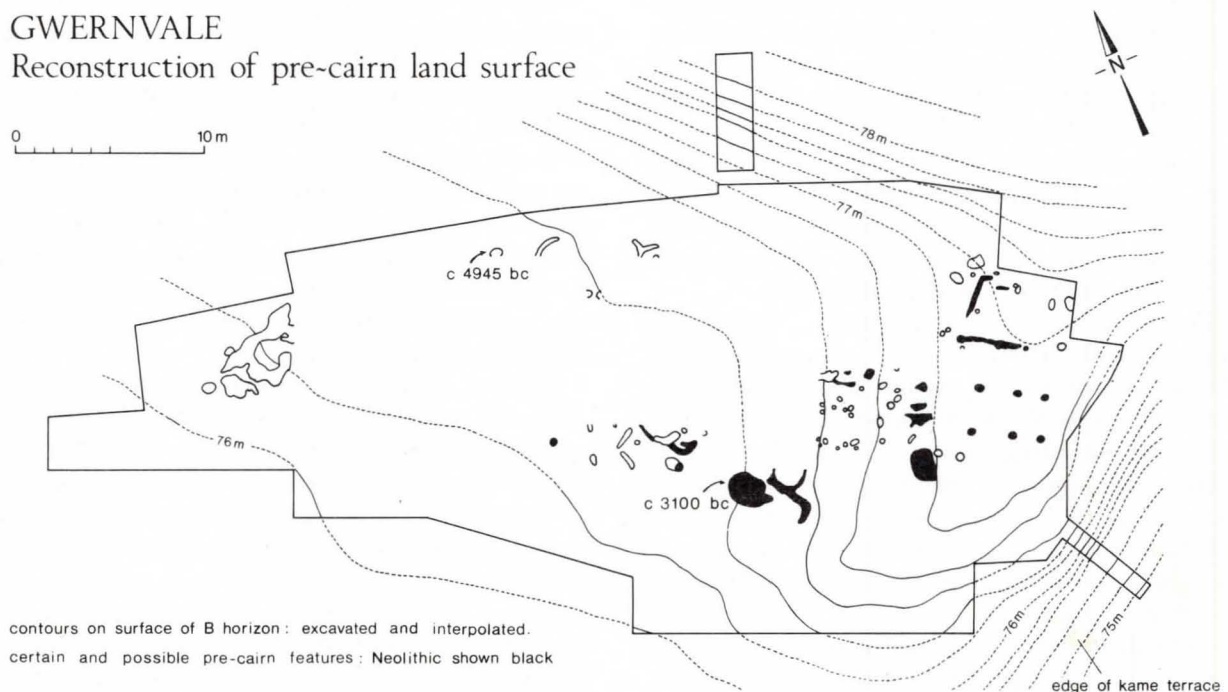
Nature and distribution of the evidence

Evidence for the presence of Neolithic activity before the construction of the cairn takes the form of flintwork, pottery, charred organic remains, and other finds scattered through the buried soil and from various features. It is dated by a single radiocarbon determination of *c.* 3100 bc (Appendix II). This suggests that the activity lies within the later fourth millennium, but there is no certain evidence whether it represents one continuous period of several sporadic episodes. There is a certain amount of evidence in the form of postholes and bedding-trenches that there had been settled occupation at the site, although there is no certainty that the pre-cairn activities were essentially or exclusively of a domestic nature. Debris in the form of lithic waste, broken

GWERNVALE

Reconstruction of pre-cairn land surface

0 10m



contours on surface of B horizon: excavated and interpolated.
certain and possible pre-cairn features: Neolithic shown black

Fig. 13

pottery, charred cereal grains (p. 141), fragmentary querns, and animal bone would suggest domestic activities, but the trench-built timber structure or building described below was not contemporary with the earliest Neolithic activity, for its structural features themselves contained Neolithic artefacts. Furthermore, there appears to be evidence from plan relationships of a direct continuity between this structure and a second, six-posted, 'building' which might have had ceremonial functions and which was almost certainly still standing when the construction of the cairn began.

The focus of activity at this period occupied more or less the same area of ground as the Mesolithic material, without carrying any necessary assumption about the relationship between the two industries. In terms of the number of finds and the number of datable structures and features, activity was centred on the slightly higher ground between the areas later occupied by Chamber 1 and the forecourt.

A Rectilinear Trench-built Structure

(fig. 14; pl. 15a)

The existence of one pre-cairn rectilinear timber structure is suggested by a configuration of bedding-trenches and postholes within the area later occupied by the northern horn of the cairn. The more certain elements were as follows: a trench on the south (F133) containing a series of deeper postholes, and packing-stones which probably braced other major upright timbers; a second trench (F229) almost at right-angles to this, containing packing-stones apparently for a continuous wall-line; a slight gully (F262) attached to the north-east end of the second trench, suggesting a further wall-line here which ran parallel with F133. A further slight gully (F227), also runs upon a similar orientation to the last side and may have formed part of it. None of these features remained stratified beneath any of the surviving cairn, but there is sufficient evidence to suggest that they represent a Neolithic structure which preceded the construction of the long cairn.

Features 133 and 229 were visible at the surface of the A horizon by virtue of the packing-stones that they contained, their soil fillings being generally visually indistinguishable from the upper part of the surrounding soil profile. They were excavated after this horizon had been cleared away, by which stage some of the packing-stones were standing well proud of the excavated level. The total volume of soil from features 133, 227, 229, and 262, from the surface of the B horizon downwards, was floated for the recovery of charred organic remains and sieved for the recovery of finds.

The southern trench and its associated postholes (F133) form a continuous line *c.* 3.8 m long; they were found beneath the construction trench of the recent wall bounding the southern side of the main road. Three postholes (F133C, E, G) were joined by an irregular stone-packed bedding-trench (F133B, D); to the east was a small isolated post base (F133A).

The size of the original post was indicated by packing-stones in three cases.

The trench itself became much shallower towards the east and eventually faded out altogether where the buried soils had been truncated by the modern wall-trench. The eastern part of the trench (F133B) was between 30 mm and 80 mm deep (the level of the base being *c.* 77.06 m and 77.10 m above OD) and between 0.14 m and 0.28 m wide, narrowing towards the base. Packing-stones on the southern side, mid-way between postholes F133C and F133G, suggested the existence of a shallower post or plank setting up to *c.* 0.14 m thick. Likewise, at the western end of the trench (F133D), which was between 0.1 m and 0.2 m wide and 50-100 mm deep below the surface of the B horizon, upright packing-stones and slight deepening of the base of the trench suggested two post or plank positions which equally divided the distance between postholes F133C and F133E. The western setting was up to 0.17 m deep and could have held a narrow plank between 55 mm and 80 mm thick; the eastern position was 0.13 m deep and could have held a post or plank up to 60 mm thick. There were no definite indications that any part of the trench had held a continuous wall-line, however.

The western trench (F229) was 2.4 m long, between 0.1 and 0.33 m across, and between 40 and 150 mm deep (the level of the base being between 77.02 and 76.88 m above OD). It contained appreciably more packing-stones than the southern trench (F133) and there were no clear positions of larger timbers. A thin streak of charcoally soil about 50 mm wide was noted within the southern end of the trench during excavation, possibly representing a continuous wall-line. The northern end of the trench probably ended at an original terminal, but the southern end, which became shallower, may once have extended further. The northern end was joined by a shallower gully, F262; this was 0.4 m long, 0.21 m wide, and up to 40 mm deep, and itself faded out towards the east. Further east, where the buried soils had been truncated by road-building, was a further short length of gully, F227, filled with heavily compacted dark ashy soil. This feature was 0.7 m long, 0.14 m wide, and up to 50 mm deep (the level of the base being at 77.10 m above OD).

Although there are differences in the constructional techniques implied by these various elements, there is a certain coherence which would suggest they belonged to the same structure, which occupied the highest local point of the gravel terrace (fig. 13). The northern horn of the cairn and part of the buried soil had been removed by recent road-building, which may also have destroyed parts of the eastern side of the structure. However, the bases of postholes which survived on its south-west side were lower than the surface which survived towards the north-east. Had a shallow gully (comparable to F133B and F133D) once existed here it would probably have been removed, but the absence of even the bases of postholes can

only be explained by assuming that (had they existed) their bases had been at a higher absolute level than those on the south-west. The original ground surface had probably risen at this point and features may have been removed when the ground was cut down for the recent road. At the north-eastern limit of the site the foundation of the road rested directly on soils below the surface of the B horizon, the compaction of which imposed some difficulties in both the identification and excavation of features within this area.

Findings from this group of features include flint scrapers from F133B and F133G (nos. 168, 138), leaf arrowheads from F133B and F229 (nos. 218, 207, 216), a microlith from F133B (no. 52), and a truncated blade from F133. Sherds of vessels 2, 3, 9, 11, and 13, were found within various features. There were difficulties, however, in distinguishing which soils constituted part of the packing and which had replaced original timbers; consequently the precise temporal relationship between the finds and the features is uncertain in most cases. This equally applies to fragments of human skull found within posthole F133E and within trench F133D, about 0.6 m from the centre of the posthole (p. 153). More reliability is attached to a rubbing-stone fragment from F133E (no. 4), a polishing-stone (no. 10), and large fragments of vessel 1 from F229, which in each case clearly formed part of the packing. The stones may well have been debris from earlier periods of activity at the site but some of the pottery sherds are sufficiently large to suggest that the vessel had been broken only shortly before the structure was built.

Various other features within the vicinity might, upon the basis of plan alone, have been associated with this structure. None was sealed beneath surviving cairn material or is securely dated by finds, however. Some shallow pits and hollows lay within the area once certainly occupied by the cairn (F226A, 226B, 230, 232, 261, 264, 266, 267, 275; details in Table 5), of which F226B might have been the base of a truncated posthole. Pit F231, which was sealed beneath the cairn, is otherwise not closely dated (Table 4). Several other features were found outside the area formerly occupied by the cairn and are even less closely dated. Pit F234 (shown only on fig. 30; Table 7) appeared to be sealed by cairn blocking, but others (F221, 223, 228, 260; see Table 7) were entirely unstratified. It is possible that F221 and F228 had been postholes associated with F133 and F229. However, unlike the bedding-trenches and their associated postholes these two pits contained no packing-stones, and post-positions could not be readily defined within their fills. The only datable finds were two microliths from F221.

Ten stakeholes were found near the structure (fig. 14) of which only two (F235-36) were sealed beneath the surviving cairn. Their diameters varied from 40 mm to 100 mm and their depths were between 50 mm and 320 mm, and all were filled with a black ashy soil. There were other slight suggestions that a structure here might have burnt down;

postholes within the southern bedding-trench (F133) and the apparent wall-line within the western trench (F229) contained a slightly greater proportion of charcoal than the surviving buried soil. In addition there was a scattering of charcoal on the surface of the buried soil immediately to the west of F229 which stopped along the line of the trench and was partly sealed beneath the cairn (F249). Several other adjacent features also contained a greater proportion of charcoal and ashy material (F223, 226A-B, 227), suggesting that they were contemporary, some possibly having formed part of the same structure.

A six-post structure within the forecourt (fig. 14; pls. 15a, 16)

At a distance of only 2.5 m from the trench-built structure beneath the northern horn of the cairn, and lying parallel to it, were the remains of a second timber construction represented by a regular setting of six postholes (F97, F207-11, fig. 14). This lay upon the same axis as the long cairn and was sited symmetrically within the area occupied by the forecourt.

One of the postholes of the structure (F97A) is poorly recorded. This feature lay partially within the area excavated under emergency conditions after the end of the 1977 season; at a preliminary stage of the excavation of the forecourt in 1978, before the presence of the six-poster was suspected, an attempt was made to remove all the later robbing material and pits in order to define what might survive of the original forecourt blocking. Partially truncated by the earlier excavation was a pit, F97, containing recent glass and earthenware. This cut through a smaller pit (F97A) on its western side, which was at the time also taken to be of recent date, and which may have been 'over-excavated'; but in view of its position and depth the writer is in no doubt that it should be seen instead as the sixth posthole of a symmetrical structure.

Clear traces of the posts held by the other postholes were found. These were all between 0.16 and 0.18 m in diameter and were set up to about 0.5 m below the contemporary ground surface. The centres of the post-positions (clearly outlined by packing-stones, see pl. 15a) defined a structure *c.* 2.3 m wide and *c.* 3.5 m long; the long axis was divided into two bays, the western *c.* 2 m long and the eastern *c.* 1.5 m. Packing-stones were predominantly of local weathered sandstone, although F207 contained a fragmentary quern (no. 5). The postholes appeared undisturbed and it seems that the base of the posts, at least, had decayed *in situ*. There were no traces of burning, but it is possible that the posts were subsequently disposed of by being cut off above ground level.

Only part of the original blocking had survived within the forecourt (fig. 33 and pl. 15b) but there is sufficient evidence to show that at least four of the posts were no longer standing above ground by the time the forecourt was blocked by stone, for none was seen to rise through it (F208-11; postholes F97A and

GWERNVALE TIMBER STRUCTURES

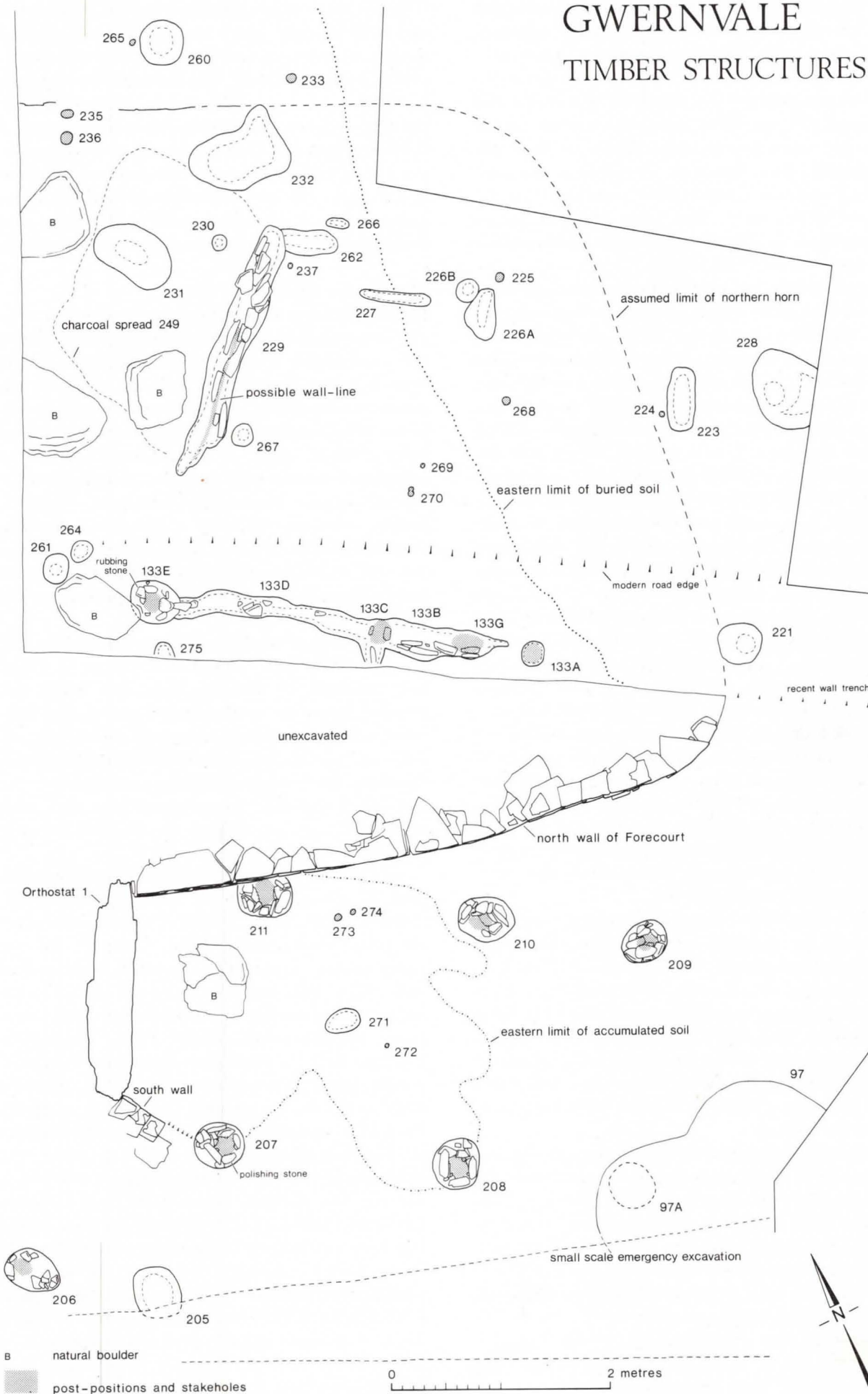


Fig. 14

209 were not sealed by deposits of any antiquity, and can therefore be dismissed from further comment here). During the use of the forecourt a darker layer of soil accumulated at its inner end, above the surviving ancient soil (fig. 14). This appeared to seal postholes F207 and F211, which were not seen at the time the layer was recorded. Upon at least one excavation plan, however, it appears that the packing-stones of posthole F207 were visible at the surface of this layer. Two other postholes on the eastern margins of the layer were also visible when it was first exposed (F208, F210).

Posthole F211 was overlain by the outer revetment wall of the northern horn of the forecourt in such a way that the packing on its northern side was concealed, but the post-position itself left unimpeded (pl. 16*b* and *c*). Most of the revetment wall had been robbed away on the southern side of the forecourt, but by projecting the line of the short length surviving against Orthostat 1 it is possible to see that this relationship is repeated (pl. 16*a*). The wall would almost certainly have overlain the edge of the post-pit of F207, but would not have obscured the post-position itself. This precise conjunction seems more than a matter of chance, and suggests that the outer revetment walls of the cairn were laid out while the posts were still standing or at least soon after they had been demolished. All six postholes had been cut through the A horizon of the ancient soil which continued beneath the cairn. The packing-stones generally came up to the surface of the soil and some protruded slightly above it; in the case of F211 the packing on the northern side was directly overlain by the lowest course of stones of the revetment wall. This might be seen to confirm the apparent temporal relationship of the posthole structure and the outer revetment walls of the cairn as suggested above, there having been no apparent change in surface level during the intervening period.

The only finds directly associated with the structure are probably earlier in date. The quern fragment from posthole F207 probably derived from an earlier period of activity, and a small sherd which possibly belongs to vessel 10, was found in soil filling the post-position of F211. Other sherds and flintwork found upon and within the buried soil beneath the forecourt blocking in the area of the six-poster might well belong to earlier, or in some cases even later, periods of activity.

Other early features within the forecourt are not closely dated and cannot be readily associated with the structure. A shallow scoop, F271 (Table 6, p. 152), is more likely to be contemporary with the use of the tomb, and three stakeholes (F272-74) which were between 50 mm and 60 mm in diameter and 50 mm and 120 mm deep are un-dated but were filled with black ashy soil, similar to those which lay near the trench-built structure beneath the northern horn of the cairn. To the south of the six-poster, partially sealed beneath the cairn material of the southern horn, were two possible postholes, F205 and F206.

The first was a steep-sided pit 0.41 by 0.46 m across and 0.28 m deep which contained stones packed against its sides towards the base and also in the central part of the filling. The second, F206, was 0.38 by 0.51 m across and 0.32 m deep; stones set against the sides suggested that it may have held a post about 0.16 m in diameter. Both pits contained undiagnostic flintwork (Table 4). Since the six-poster would seem to have been still standing when construction of the cairn began, it is perhaps unlikely that these two features could have been part of the same structure.

Other possible Structures and Pits

Other structures may have existed, of which only parts have been revealed due to the selective nature of the excavations. Only a small proportion of the features can be closely dated, however, and some are insecurely stratified: although some lie within the assumed limits of the cairn, the cairn itself may have been robbed away. Additional uncertainty is introduced because some of the features might be of natural origin. Reasonably well-dated Neolithic features are shown in Table 3. Not all are securely stratified beneath the cairn but in these instances the presence of Neolithic finds and the fact that they do not appear to be later intrusions suggests that they are antecedent to the cairn.

To the west of the forecourt were two shallow and irregular trenches, F149 and F167 (Table 3). These were probably of Neolithic date, but unlike the trenches below the northern horn of the cairn they contained no packing-stones and there was no evidence that they had ever held timbers. Numerous stakeholes were found within this area, but they are undated and within the restricted area excavated here, they do not appear to conform to any intelligible plan.

To the west of Chamber I was revealed the partial plan of a configuration of three trenches (F257, Table 4; F259, Table 3; F283, Table 5) and a more irregular curving gully (F287, Table 3). All the trenches were reasonably steep-sided, between 0.10 and 0.23 m deep and filled with soil similar to the upper part of the buried soil elsewhere. There were some upright stones within F259, towards its southern end, but there were no definite traces of a timber upright. The western trench, F257, contained some stone which suggested that it may originally have held an upright post at its rounded northern terminal (where it expanded to 0.19 m across) and possibly also towards the centre (where it was 0.18 m across). The southern trench, F283, had a slightly larger rounded hollow at its southern end. Taken together, they suggest the existence of a further pre-cairn timber structure, but there is too little additional information to permit further discussion. Only F259 and F287 contained diagnostic Neolithic finds. A group of possible postholes to the north of Chamber 3 (F313-16, Table 7) might be part of another structure, but there is no dating evidence other than that they pre-date the closure of the cairn.

Several shallow scoops beneath the cairn contained Neolithic pottery. Feature F68 was a moderately substantial pit, 1.6 m by 2.2 m across and 0.58 m deep (Table 3). It contained four layers of filling, as follows: an upper layer *a*, between 50 mm and 100 mm thick, containing a high proportion of charcoal; a series of three tips of soil lying against the eastern side, numbered *b*, *c*, and *d*, consisting of respectively reddish-brown sandy soil with flecks of charcoal, 'clean' reddish-brown soil, and finally a bottom layer of similar soil with charcoal flecks. The upper fill of the pit was visible within the A horizon and the pit had probably been cut down from the pre-cairn surface. The sequence of layers suggested that the pit had been deliberately refilled and that subsequently a fire had been lit in a hollow formed on top of it. The filling of some hollows and several shallower pits, F162, 150, and 170, was more homogeneous and similar to the upper part of the buried soil in general.

Undated features beneath the cairn

Tables 4 and 5 list respectively undated features sealed beneath the extant cairn, and ones beneath the assumed extent of the cairn, but where this had been

robbed away. None of the features contained closely datable finds and their precise dating is therefore uncertain. In some instances there is a suggested relationship in plan with other better-dated features, mention of these being made in the previous text. Some features may be of natural origin and others which contained varying amounts of charcoal might have been associated with vegetation clearance (*eg* the series of irregularly-shaped interconnected pits and hollows at the western end of the site—F295-305, Table 4, and an irregular gully on the northern side of the cairn, F317, Table 4). A further gully here, F311, was about 0.2 m wide and gradually faded out towards the east from a maximum excavated depth of 0.11 m below the revetment wall of the cairn. It appeared to be a deliberately constructed feature, but the only find that it contained was a flint piercer (no. 229). An adjacent pit or hearth, F308, produced charcoal which has been dated to *c.* 4945 bc (see p. 152). Most of the remaining features here on the northern side of the cairn were sealed below deliberate blocking placed against the side of the cairn and therefore preceded its abandonment. Some were probably contemporary with its use (see Tables 6 and 7, p. 152).

THE CHAMBERED TOMB

Types of building material

(fig. 15)

In the absence of a detailed petrographic analysis of the materials used in the construction of the cairn, general observations made during the course of the excavation are nonetheless of extreme importance in answering questions regarding the source of the building materials, the manner in which the work was undertaken, the intended appearance of the tomb, and indirectly the apparent sequence of construction. In the following discussion, however, it must be borne in mind that there is generally only direct evidence for the composition of the basal courses of the cairn and the vertical elements of the chambers, and that other materials may have been employed in the upper parts of the cairn which have since been robbed away.

It was readily apparent during excavation that the stone forming the inner part of the cairn (within the line of the inner revetment wall), the orthostats forming the chambers, and the stone forming the outer revetment wall (including the whole of the build between the inner and outer wall faces) could not all have been obtained from the same source. There seemed little reason to doubt, however, that all the materials could have been gathered from within 500 m of the site, for they were ultimately derived

from various subdivisions of the Old Red Sandstone which outcrop on the adjacent hill-slopes of the Black Mountains. Nevertheless, it was clear that some stone had been quarried and some had been taken from secondary sources, the local glacial drift being the most likely origin. With some exceptions the inner part of the cairn was composed of weathered blocks of sandstone probably collected within the immediate vicinity of the site, whilst the orthostats forming the chambers, the walling within the chambers and chamber passages, and the outer cairn wall were all apparently composed of rock which had been specially quarried for the purpose, from screes, surface exposures, or from deeper operations. (The contrast between the stones forming the inner and outer revetment wall is well marked on plate 14*a*.)

The stones forming the inner part of the cairn were predominantly of rounded and weathered sandstone boulders or slabs which had been split from such. They were brown, reddish-brown, and sometimes almost purple in colour and varied in size from as little as 0.1 m across to 0.8 m in exceptional cases. Their composition varied from conglomerates to amorphous sandstones. Similar rocks were encountered during excavation lying within the same

terrace upon which the site is situated. In some instances the boulders here, firmly embedded within the B horizon of the buried soil, had split along their bedding planes *in situ* into a nest of separate slabs. Similar boulders were also exposed in the vicinity of the site, both on the edge of the terrace where this had

suffered erosion, and in places where the terrace has been cut through by streams; it seems certain that the bulk of the inner part of the cairn and the inner revetment wall was of stone gathered from the terrace near to the site. The stones of the cairn were 'bonded' with a reddish-brown fine sandy clay loam; this

GWERNVALE

Types of building material

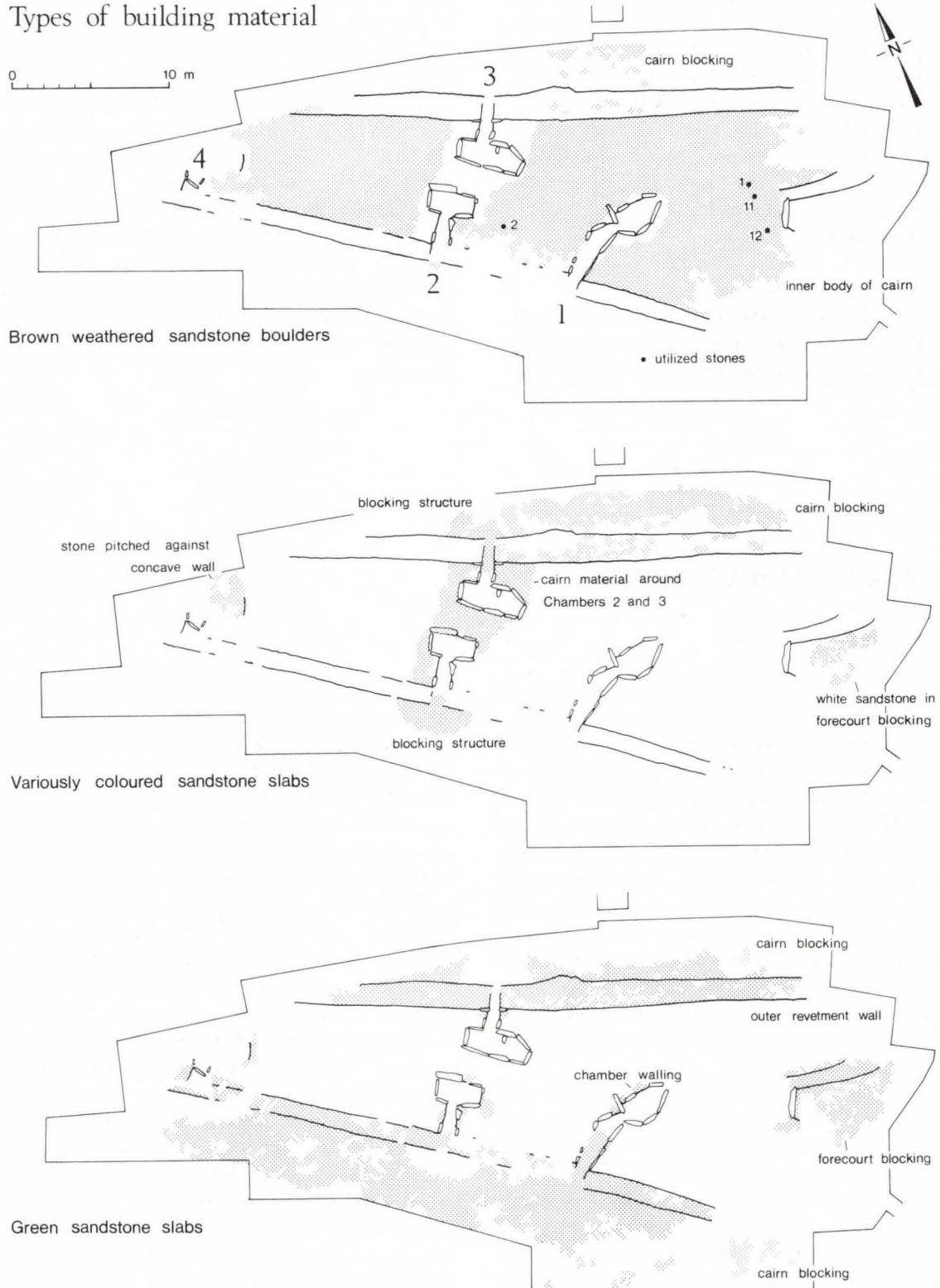


Fig. 15

differed from the underlying soil and had presumably been dug from a local clay-rich band (see manuscript report by Dr H. Keeley). Also included within the inner cairn were two quern-stones and an axe-polishing-stone; one would suspect that these too were obtained locally, probably as debris from earlier activity at the site (p. 132 and fig. 31). Being near at hand they would perhaps be amongst the first stones to be incorporated within the cairn, but too little of the cairn survived or was excavated for any firm conclusion on this point. The only apparent differences were in the area between Chambers 2 and 3, and in the inner revetment wall of the northern horn of the forecourt. In the first instance the cairn here comprised a higher proportion of apparently unweathered sandstone slabs, possibly part of a 'primary cairn' built concurrently with the chambers (p. 146), and in the second instance part of the revetment wall seemed to be built of types of stone more characteristic of the outer cairn walls (p. 147).

Although there was some variation in the composition of the orthostats, it is likely that they were all quarried from surface outcrops on the mountain slopes to the north of the site.

The outer cairn walls were almost exclusively composed of green micaceous sandstones (the exceptions being parts of the northern side of the cairn, see page 147) which had clearly been specially quarried. This stone, which has been used locally until recent times for wall building, had clearly been selected for the superior splitting qualities which make it ideal for this purpose. Similar stone, apparently belonging to the Senni Beds of the Lower Old Red Sandstone, can be seen in the nearby Llanfair quarry at a height of *c.* 100 m above the site. Stretches of walling forming the chamber passages and linking the orthostats within the chambers were also built of this stone, which was generally consistent in colour and quality throughout the tomb. Some variation did occur on the northern side of the tomb where part of the outer revetment wall was more grey and yellow in colour. No doubt the stone was quarried from a different bed. Parts of the infilling behind the wall here was also composed of blocks of weathered sandstone, uncharacteristic of the wall elsewhere.

Although much of the passage and cairn blocking was composed of green stone similar to that of the outer revetment walls, some variations noted during excavation are described elsewhere. One example was the forecourt blocking which contained many slabs of white quartzitic sandstone, rarely encountered elsewhere in the cairn (see blocking wall of Chamber 2, p. 76).

To summarize: the main body of the cairn appears to have been built of materials derived from a very local source, whereas the orthostats and the outer walling were of quarried materials transported a little distance to the site. The transportation of special stone from even greater distances is recorded elsewhere amongst tombs of the Severn-Cotswold

group (Piggott 1962, 14, 58). Although more than one *stage* of construction is implied by the use of different materials for separate elements of the primary structure of the cairn and its chambers, this is most readily explained by practical and aesthetic considerations and need not by itself imply a chronological separation between the various parts of the enterprise: walling within all the chambers, themselves enclosed by the inner cairn, is of similar stone to that forming the outer revetment walls. The careful selection of stone for the outer part of the cairn was little other than a conscious attempt to present to public view, initially at least, a monument faced with neatly coursed walling. The use of another type of stone to block the forecourt might suggest that more stone was brought to the site at a later stage and from a different source.

THE CAIRN

(figs. 31, 32; pls. 12, 13)

For descriptive purposes, the cairn is discussed under three headings: the body of the cairn, the inner revetment wall, and the outer revetment wall. It should be noted that the surviving height of the cairn and revetment walls at different parts of the site in no way reflects its original form or condition, for this variation is entirely the result of differential stone-robbing. Although only the basal courses of the cairn have survived, there is occasionally evidence which allows inferences to be made concerning the form and original appearance of the structure at higher levels. Some parts of the cairn had been entirely robbed away, notably the two horns, the western end of the cairn and the outer part of the cairn between Chambers 1 and 2. The deepest surviving portions of the cairn, up to *c.* 0.65 m thick, were around Chamber 3 and in a spine leading from there to the south-west side of Chamber 1.

Very little remained of the southern horn of the cairn; a short stretch of the forecourt revetment wall survived, but only to a height of 0.25 m immediately adjacent to the portal stone, Orthostat 1 (fig. 16), and the internal part of the cairn gradually petered out altogether. The line of the revetment wall on this side of the forecourt was indicated for a short distance by an erosion scarp resulting from activities within the forecourt which had evidently caused the ground surface to be lowered slightly below the foundation of the wall (p. 89). Beyond this the ground had been cut away by a recent pit, F96 (fig. 30). It was not possible to determine whether there had ever been an internal revetment wall of the cairn at this point. A residual buried soil survived slightly beyond the extant stones of the southern horn, but beyond this the modern topsoil came immediately down to the B horizon of the soil, which had been scored by recent ploughing. The southern revetment wall of the cairn gradually increased in height from a single course at the east to about eleven courses, standing to a height of *c.* 0.4 m on the eastern side of the entrance passage to

Chamber 1. During excavation the outer revetment wall was removed here in order to reveal the elevation of the inner cairn wall. It was found that at the point where it butted up against Orthostat 2 (on the eastern side of the passage belonging to Chamber 1) the inner wall stood to a height of *c.* 0.35 m in only five courses of stone (fig. 17). Within recent times the entire cairn had been dug away from the southern side of Chamber 1, down to the surface of the buried soil.

Most of the outer and inner revetment walls between Chambers 1 and 2 had been robbed away, but up to three courses of stone survived on the eastern side of the entrance passage to Chamber 2 (fig. 17). The surface of the ancient soil which had been originally buried beneath the cairn appeared to be little disturbed by stone-robbing, however, and soil-filled depressions within the surface of the A horizon indicated where the face of both the inner and outer revetment walls had been (p. 60).

Part of the outer revetment wall to the west of the entrance to Chamber 2 survived in fourteen courses of stonework to a height of 0.4 m (fig. 17), but a little beyond this some had been entirely robbed away to reveal the elevation of the inner revetment wall. This also stood to a height of 0.4 m, but here in only about seven courses of rougher stonework (fig. 17). Further west part of the inner and outer walls had been removed by the construction trench of a dry-stone wall formerly bounding the southern side of the A40, but the line of the outer wall survived beyond this for several metres as a single course of stone lying below the road verge and the road itself. The inner revetment wall could only be traced as a single intermittent course running as far as the eastern elements of Chamber 4 (fig. 27). It could not be identified to the west of the chamber and it is therefore uncertain whether it ever existed beyond that point. Robbing at this end of the cairn provided a rough section through part of the inner portion of the cairn, the inner revetment wall, and the outer revetment wall, a section which emphasised the marked difference in construction of the two revetment walls (pl. 14a).

The western end of the cairn had been entirely removed by road construction and it therefore remains uncertain whether the cairn was originally completed with a wall at this end, in the manner described by Dr Savory at Penywylod, Talgarth (present report), or whether it merely tailed away to nothing.

The north-west end of the cairn had been truncated by the hollow way possibly in use during the seventeenth century, when surviving parts of the inner and outer revetment walls must have been visible in the bank at the side of the road. At a later date some of the stones of the inner revetment wall actually formed part of the cobbled road surface. On this side of the cairn the outer revetment wall gradually gained in height from a single course to sixteen upon either side of the entrance passage to Chamber 3, standing to a height of *c.* 0.6 m (fig. 16, pl. 24a). To the east of this point the wall had clearly once stood to a greater

height; it was overhanging to a marked degree and had all the appearances of having been raked down (p. 61). At the eastern end of the northern wall, at the beginning of the horn, the inner and outer walls again diminished in height to a single course as a result of road-building.

Sufficient of the inner and outer walls survived on the northern side of the forecourt to show its original length, for the outer wall had turned sharply before being cut away by the construction trench of the road-wall which bounded the southern side of the A40. Only about a single course of the inner wall survived at this point and the outer wall rose to only *c.* 0.25 m in about six courses (fig. 16, pls. 15, 16).

Two holes had been dug down right through the surviving cairn to the east of Chamber 3. The first, F94 (fig. 30), was one of a pair of postholes of a gate leading into the allotment on the southern side of the A40. This matched a posthole whose construction had removed Orthostat 29 within Chamber 3 (F93, figs. 23, 30). A further hole (F96) contained the base of a telegraph post which had once stood in the verge.

The inner body of the cairn

The inner body of the cairn, together with the inner revetment wall, was generally composed of boulders or slabs of weathered sandstone varying in size from *c.* 0.1 m to 0.8 m across (p. 55, with exceptions discussed further below). The greatest surviving height of the cairn was *c.* 0.65 m or about five layers of large stones. Only restricted parts of the cairn were removed during excavation, principally on the southern side of the cairn between Chamber 1 and the forecourt, in a small strip between Chamber 1 and Chamber 2, and at the western end of the cairn (fig. 30). Other profiles through the cairn could be seen after the removal of robbing-trenches which cut through it, where Orthostat 29 had been robbed away within Chamber 3 (fig. 24) and in the sides of the two large modern postholes to the east of Chamber 3.

Stones flattened in one plane were normally laid fairly horizontally. Although there were some voids between or beneath stones, the interstices were normally filled with a reddish-brown fine sandy clay loam which had probably been obtained from a local clay-rich band within the terrace and may therefore have come from the same source as the stones themselves (p. 57). There were very few artefacts within the body of the cairn, other than querns probably derived from earlier activities at the site.

All the basal stones of the cairn had sunk into the A horizon of the buried soil (which showed no signs of special preparation) to such an extent that some were buried to almost their full depth. The A horizon was largely stone-free, which made it reasonably easy to distinguish the base of the cairn even though in places natural boulders embedded in lower layers of the soil rose up through the A horizon. Some, indeed, even rose up into the body of the cairn. One, which for descriptive purposes has been termed 'natural monolith' in figures 30-32, reached a height of *c.* 0.7 m above

GWERNVALE

OUTER REVETMENT WALLING

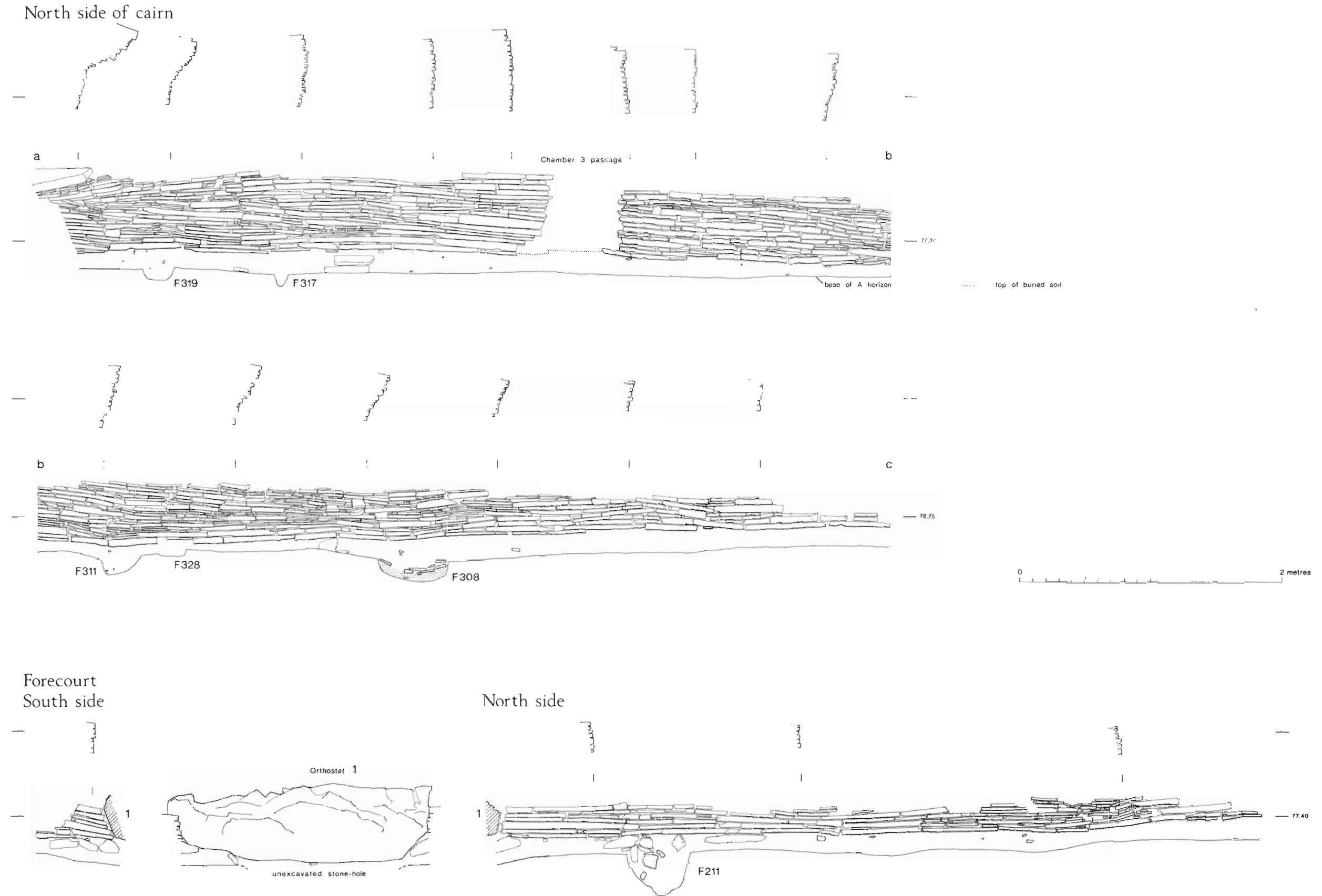
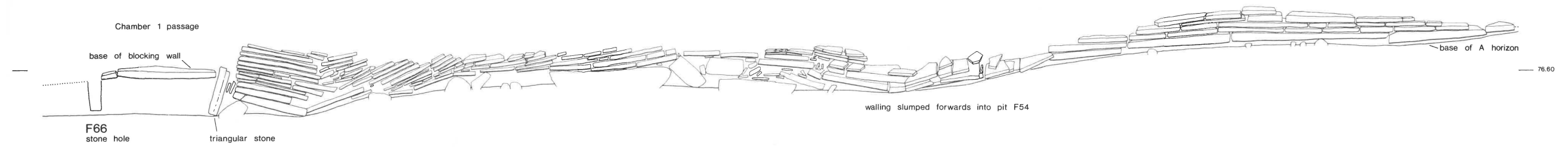


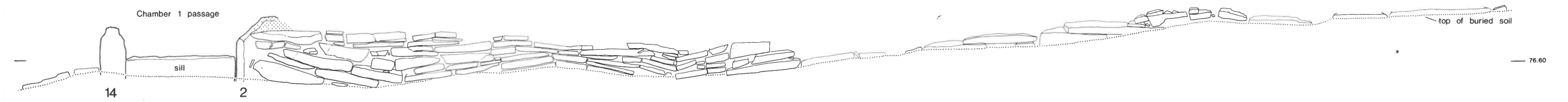
Fig. 16

GWERNVALE

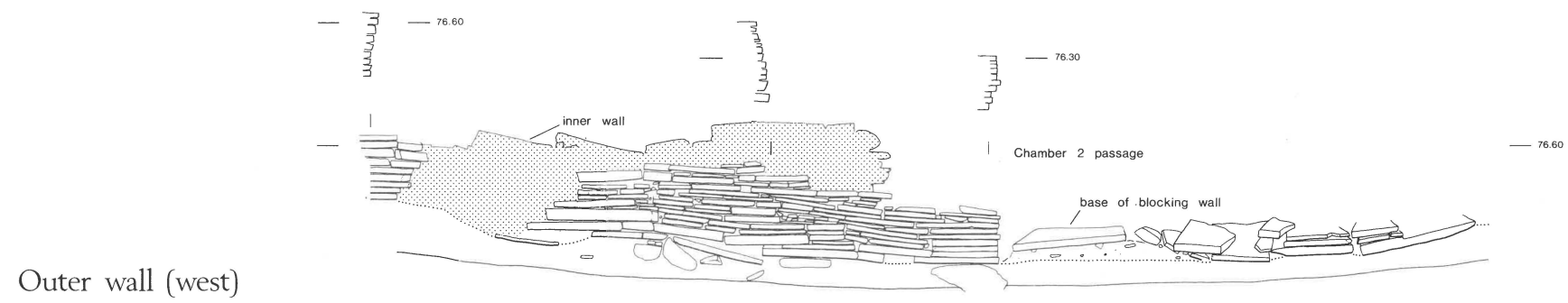
REVTMENT WALLING · South side of cairn



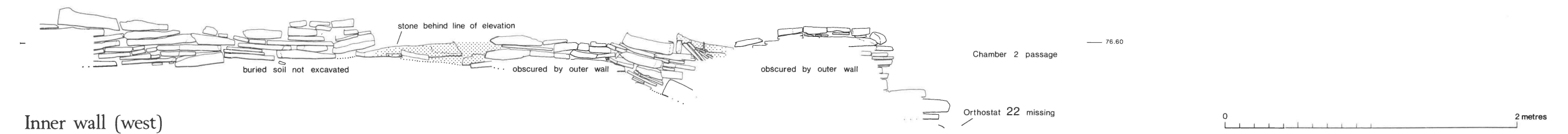
Outer wall (east)



Inner wall (east)



Outer wall (west)



Inner wall (west)

Fig. 17. Stippled portions lie behind the drawn elevation.

the buried surface and was visible from the top of the surviving cairn material (pl. 13*b*).

This natural stone, which may have provided a focus for some of the earlier pre-cairn activities and even have suggested the siting of the tomb, may have been used for setting out certain elements of the cairn. It lies on the long axis of the cairn and is almost exactly half-way between the south-east corner of Chamber 1 and the portal stone in the forecourt. Moreover, an axial line (rather than a wall) of stones lay between this monolith and the south-east corner of Chamber 1, a feature which was particularly marked within the basal courses of the cairn (pl. 13*b*, fig. 32). This line was indicated by a more diffuse pattern of stones at a higher level both here and on a line between the 'monolith' and the portal stone in the forecourt. No other axial lines, lateral lines or internal walling (other than the inner revetment wall) were noted elsewhere during excavation.

The only other distinction within the inner part of the cairn was the nature of the material immediately enclosing Chambers 2 and 3 (fig. 15), which contained a high proportion of split slabs and quarried stones. Stones between the two chambers were pitched up slightly towards each chamber from an axial line. However, the orthostats and intervening walling on the south-east side of Chamber 2 (as in the case of Chamber 1) were more or less immediately backed by weathered sandstone boulders characteristic of the remainder of the cairn. It is argued on page 146 that these anomalies can be explained by supposing that the erection of Chambers 2 and 3 began once the construction of the inner part of the cairn had proceeded from the east as far as this point, and that these two chambers were immediately consolidated with materials then to hand, possibly consisting of quarried material brought with the orthostats themselves. Once the chambers had been secured, the construction of the inner part of the cairn towards the west could have been resumed.

There is some uncertainty about the original arrangement of the inner part of the cairn at the western end of the site. The main body of the cairn at the centre appeared to finish on the line of a short stretch of concave walling (p. 87, fig. 27), which may have been part of some internal structure. To the west of this point it seemed that the inner body of the cairn was only present in a zone behind the inner cairn wall, as far as the putative Chamber 4.

Clearly we cannot know what the original height of the cairn had been, but there is sufficient evidence to suggest that as at Penywylod, it rose to cover the capstones of the chambers. Part of the capstone of the inner passage of Chamber 2 had collapsed; directly above it were large slabs which had fallen down at the same time and which must have been part of the original overlying cairn (p. 72, pl. 19*c* and fig. 22). Like the build of the cairn between Chambers 2 and 3, this too was composed of split and quarried stone slabs.

The inner revetment wall

Only short stretches of the face of this were exposed during excavation, as follows: to the south-east of Chamber 1, following the removal of the outer revetment during the total excavation of this part of the cairn (pl. 14*b*, fig. 17); to the west of Chamber 2, where it was revealed by robbing-trenches along the line of the outer revetment wall (pl. 14*a*, fig. 17); lastly, a short stretch towards the north-western end of the site where the cairn had been cut through by the hollow way of the post-medieval road. The wall could be traced over more extensive areas in plan, however, and it had probably been present around the circuit of the cairn, with the possible exception of the southern horn, and the extreme western end.

Except for a short stretch within the northern horn, the inner revetment was exclusively composed of weathered sandstone slabs and boulders, like the material forming the body of the inner cairn (p. 55). Elevations clearly showed that the inner wall was much more coarsely built than the outer wall, a distinction which is characteristic of other Severn-Cotswold tombs such as Burn Ground, Glos. (Grimes 1960, 66) and Penywylod, Talgarth. It was clear that the inner wall related precisely to the end of the inner, orthostatic, passages of Chambers 1-3, where the junction between them survived, and there may have been a similar arrangement with Chamber 4. In the case of Chamber 1, the wall had been brought up exactly to the furthest limits of the two outermost orthostats (fig. 18; Orthostats 2, 14) to meet them almost at right-angles. A similar arrangement was almost undoubtedly made at the entrance to Chamber 2, but here the orthostats had been robbed away (fig. 20, missing Orthostats 15, 22). This pattern appears to be present at various other Severn-Cotswold tombs with lateral chambers where the inner wall was not identified during excavation (*eg* Pipton, Chamber I; Savory 1956). The arrangement at the entrance to Chamber 3 differs in that the inner passage ends in a pair of orthostats which flank the entrance, and are flush with the face of the inner revetment wall (fig. 23, Orthostats 23, 35). These stones separate the finer walling of the inner passage from the coarser work in the outer passage (fig. 24; pl. 25*a*). This arrangement is found in other Severn-Cotswold tombs (*eg* Ty-isaf, Chamber II; Grimes 1939). Within the northern horn the wall apparently merged with the inner cairn behind the portal stone of the forecourt.

It seemed possible that a slightly different sequence was represented in the inner revetment wall immediately to the west of the entrance passage to Chamber 2, though a full comprehension of the anomalies would require further excavation. At a point about 2 m to the west of the passage it appeared that the inner revetment wall had been re-built with smaller slabs of stone, possibly to make good either a mis-alignment in the original build or to replace part of the wall which had collapsed or become disturbed (see plan on fig. 20, elevation on fig. 17). The first

2 m of the outer revetment wall to the west of the passage was also set at a slightly lower level than the remainder of the wall, within a hollow apparently caused by the removal of some of the buried soil. The buried soil was notably thinner here, and the lowest three courses of the outer cairn wall immediately adjacent to the entrance were set slightly back, apparently to avoid a natural stone protruding from beneath; there is no suggestion that this stone, or any others that were found in a similar relationship with the outer cairn wall, were 'marking-out stones', for they were found to be natural stones firmly embedded within the B horizon of the buried soil. This stretch of wall was unfortunately detached from the remainder of the wall to the west by a robbing hole. It appeared that the possible 'repair' to the inner wall may have taken place after the construction of the lowered portion of the outer revetment wall; in which case this would point to a sequence in which the portions of the outer wall flanking the entrance passages were built in advance of the rest. However, it may be that the outer wall was all built up at the same time and that it was merely fitted into the irregularities in the inner wall.

Where part of the inner cairn and the inner revetment wall were totally excavated to the south-east of Chamber 1, it was clear that the inner wall and the body of the cairn had been built simultaneously, because the stones of the wall were interleaved with stones in the body of the cairn.

There was no evidence that the inner wall had been exposed for any great length of time before the addition of the outer revetment wall and its backing; but very little of the outer revetment wall was excavated in order to reveal the inner wall-face, and little of the ground surface immediately outside the inner wall was exposed which might have revealed contrary evidence. At certain points there were stones within the backing of the outer wall which had been placed vertically against the inner wall-face, but it seemed that they had been placed there merely to fill up gaps against the wall-face during the construction of the outer revetment wall.

The stones of the basal course of the body of the cairn had sunk down into the buried soil. This was even more marked in the case of the inner revetment wall, for the position of the wall-face could still be seen after the careful removal of the lowest stones by a line of depressions within the surface of the buried soil (pl. 13c). There was positive evidence that this sinkage was the result of compression, rather than a deliberately excavated foundation trench: little attempt had been made during construction to ensure that adjacent stones were placed exactly against each other and consequently isolated pinnacles of soil representing the original surface of the ancient soil survived between adjacent stones. The depressions beneath the stones of the wall-face were sometimes deeper than those beneath adjacent stones in the bottom of the inner cairn; it is reasonable to suggest that this resulted from the fact that the pressure

exerted by the stones forming the wall (which stood to a much greater height originally) would be applied directly onto the lowest course, whereas pressures exerted by the inner body of the cairn upon its basal courses would have been dispersed more randomly over a wider area. Although the majority of the stones of the inner wall were laid more or less horizontally, some were pitched, but with little apparent preference for any direction.

One of the primary functions of the inner wall was probably to define the limits of the initial cairn enclosing the chambers, which extended as far as the limits of their orthostatic passages. It is argued later that this was the limit of the roofed portion of the chamber passages, and it would therefore be probable that the inner wall would have risen to the height of the cairn built above the passage roofs. In the case of Chamber 2 this was 0.7 m (p. 72).

The outer revetment wall

Various stretches of the face of this wall were revealed during excavation. The most important of these were on the north and south sides of the forecourt (fig. 16), the south side of the cairn to the east of Chamber 1 and to the west of Chamber 2 (fig. 17), and on the north side of the cairn upon either side of the entrance to Chamber 3 (fig. 16, pl. 14c). In some parts of the site (principally on the north-east and south-west sides of the cairn) the wall was merely revealed in plan. A very much smaller proportion of the wall was totally excavated, of which the stretch to the south-east of Chamber 1 was the most informative, although the removal of recent debris from robbing-trenches across or along the wall at other points enabled cross-sections of the wall to be examined (eg pl. 14a).

We have seen that this wall, for the full depth from its outer face to the point where it butted against the inner wall, was composed of quarried stone, specially chosen for its superior building qualities, which had been transported to the site (p. 57).

Normally the walling was coursed approximately but not absolutely horizontally, for there were occasional 'rises' in the masonry which carried later work above stones which had already been put in position. To the east of the entrance to Chamber 1 it appeared that there was an intention to produce slanted coursing (in the lowest levels of the wall, at least, fig. 17), but two phases of construction might be represented here (discussed more fully below). There was some variation in the width of the wall and its backing material: on the southern side of the cairn the width was between 0.9 m and 1.2 m, and on the north side it was generally between 1.2 m and 1.5 m wide (discounting later distortion). In the surviving portion of the northern horn it was originally more than 2.3 m wide; possibly here a greater thickness was necessary in order that the wall might be built to a greater height.

The long cairn was probably originally faced with impressive dry-stone walling which rose to an

unspecified height, but certainly greater than the sixteen courses 0.6 m high, which survived near to the entrance to Chamber 3 (pl. 24a). But what of the chamber entrances themselves? Here it appears that none of the original build remained in position, all the chamber entrances having apparently been disturbed in antiquity. The entrance to Chamber 3 provided the most conclusive evidence of the original arrangements made between the junction of the outer revetment wall and the chamber passage, and as a result the somewhat poorer evidence from Chambers 1 and 2 can be interpreted more satisfactorily. At first it appeared that at the entrance to Chamber 3 there was a marked contrast between the quality of workmanship represented by the outer cairn wall and that of the outer passage wall where it led to the junction with the orthostatic passage. In addition, the right-angled junction between the two appeared to have been carried out in a very clumsy fashion, quite out of keeping with the standards achieved elsewhere. Further consideration, however, suggested alternatively that the outer revetment wall had originally been constructed across the entrance passages, and had subsequently been broken through on the line of the passage, to gain entry to the chambers. In the case of Chamber 3, the original build is shown by a basal stone of the outer revetment wall on the west side of the entrance, which continued part-way across the passage (fig. 23). There was no doubt that separate stretches of outer revetment wall had been inserted across the outer ends of the passages to Chambers 1-3; in the case of Chamber 3 there appeared to be evidence that this inserted wall had been replaced at least twice, and no doubt the process could have been repeated many more times without leaving any further archaeological trace. It seems that walling in the outer parts of each of the chambers never functioned as passages in the true sense but acted as a revetment for and definition of a gap which could be opened up in the material behind the outer wall-face; this would normally have held blocking concealing the roofed passage which began on the line of the inner revetment walls (p. 143). Evidence for this interpretation is discussed in more detail in relation to each of the chamber entrances.

The outer revetment wall, with its backing material, was undoubtedly added to the inner cairn once this and the chambers that it enclosed had been completed. Most of the stone in the backing material was laid horizontally, although in certain parts the outer face of the wall was overhanging, sometimes to a considerable degree (pl. 23c), right from the basal courses of the wall-face, which were pitched downwards towards the outer face of the cairn. It is argued below, however, that the original form of the wall was upright, or in parts even slightly battered inwards. The stones, like those of the body of the cairn and the inner revetment wall, were bonded or interleaved with a reddish-brown clay. The inner revetment wall was very coarsely built and on occasion stones behind the outer wall had been carefully placed to fit

irregularities in the inner wall-face, so that stones of the inner face overlay those retained behind the outer wall.

There were suggestions in several instances that walling adjacent to the chambers had been built in advance of the walling around the remaining circuit of the cairn. Anomalies in both the inner and outer revetment walls to the west of the entrance to Chamber 2 (p. 59) might be explained in this light. Similarly, the surviving wall flanking the entrance to the south-east of Chamber 1 appeared to be set at a slightly lower level than that further west, even allowing for subsequent differential settlement. In addition, there was a change in the construction of this wall at a point *c.* 0.5 m from the passage entrance, from what was probably once a horizontally coursed wall to one constructed with sloped courses. At the time of excavation it appeared that the part of the wall flanking the entrance could have been built in advance of that to the east. Apart from aesthetic considerations implicit in the nature of the construction of the outer wall, it may also have formed a primary blocking to all the lateral chambers; in this case, stretches of wall immediately outside the chamber entrances may have been built soon after the completion of the inner cairn, in advance of the remainder of the wall, in order to seal the chambers. No suggestion of this could be found in the finely-preserved stretches of walling outside Chamber 3, however, and the possible sequence of construction hinted at in Chambers 1 and 2 remains to be tested at other sites in the Severn-Cotswold group. Nevertheless, the outer cairn wall was clearly added to the tomb after the chambers and the inner cairn enclosing them had been completed; whether or not there is any discernible sequence in its construction, it does appear to have sealed the chambers in the first instance. The part of the wall opposite the chamber entrances (the functional entrance to the chambers being on the line of the inner cairn wall) would have been subsequently broken through when each of the chambers was first entered, at some stage after the completion of the tomb.

The outer wall in certain parts was leaning outwards (*cf* fig. 29), sometimes to such a marked degree that it could not have stood as it was found. Other parts of the wall were standing vertically or were even slightly battered inwards. On the west side of the entrance to Chamber 2, for instance, the wall was battered, whilst on the eastern side, where only one or two courses survived, these were tilted upwards in the direction of the cairn. It could be suggested that these phenomena are due to two entirely different processes: firstly, natural decay which took place during the formal use of the tomb, and secondly, the deliberate raking down of the revetment walls, marking its final closure. The state of the walls upon excavation is only explicable in terms of the combination of these processes. The suggested process of the closure of the tomb is tightly

linked with the evidence for chamber blockings and the interpretation of stone masses found outside the cairn, and is therefore more appropriately discussed elsewhere (p. 90).

The first process which we have identified, the natural decay of the tomb, is best approached from beneath, for in the absence of any experimental work, the only incontrovertible evidence of what processes had taken place is provided by the topography of the ancient soil buried beneath the cairn. But first it is necessary to describe the stones forming the basal course of the wall. The only substantial stretch of it that was totally excavated lay to the south-east of Chamber 1, which appears to be fairly typical of the wall elsewhere. However, it should be noted that here the stones of the basal course were more or less uniformly pitched up towards the body of the cairn, whereas in other places the stones of the wall seemed to be horizontal. The stones which had been selected for the wall-face here were often long and narrow and had been placed with their long axes along the line of the wall; few if any 'headers' were employed here, or indeed higher up the wall, to tie in the facing to the material backing it. Contiguous stones had been placed tightly against each other so as to leave very little space between.

The deposits to the south of the cairn had been totally excavated down to the surface of the B horizon in advance of the excavation of the cairn itself, in order to separate those deposits which were sealed by the cairn and those which were not. The equivalent of the A horizon of the soil which was later found to be buried beneath the cairn could not be identified at this part of the site. It was distinguished in certain areas outside Chambers 2 and 3 where it was preserved beneath a substantial depth of cairn blocking. In the next stage of excavation the upper build of the wall was removed to leave just the basal course in position (pl. 18c), which like the overlying courses was tilted upwards towards the inner part of the cairn. At this stage it was obvious that the outer edges of the stones lay near to the surface of the B horizon as it had already been defined in the areas to the south of the cairn. Consequently when the lowest stones were lifted away it was found that the wall-face had latterly lain on a ramp of soil, the inner face of which rose to more or less the full surviving height of the A horizon or topsoil beneath the cairn and the outer face sank to a position towards the base of that horizon. The area beneath the material behind the facing wall, back to the line of the inner revetment wall, was reasonably horizontal with only slight crests of soil indicating where the bottom stones had been. This was also true of the ramp beneath the wall-face itself, but here the crests were less marked because the stones had been more carefully placed against each other. The ramp did have an artificial appearance, but all its characteristics could be explained by the same natural phenomena which have been used to explain the topography of the buried surface beneath other parts of the cairn (p. 58).

The stones forming the outer revetment wall-face appeared to have sunk down into the buried soil as a result of pressure applied by the overlying cairn; as in the case of the inner cairn wall, pressure above the outer face would have been greater than on the backing material since the entire weight of the face would have been applied directly above one point rather than being dissipated in a more irregular construction. This process, combined with lateral pressure from the cairn, accentuated by the poor bonding between stones of the face and the backing material, and no doubt accelerated by the activities of surface-casting earthworms, would have promoted sinkage of the wall into the buried soil. It was indeed remarkable that the surface of the buried soil directly below some of the stones of the outer wall-face was a maze of 'fossil' worm burrows. Because the wall had been built directly upon the ground surface without any provision for a foundation, other than the basal stones generally being somewhat larger, there would have been little resistance to pressure from above. Consequently the line of impressions made in the ground survived in some places where the wall had been entirely robbed away, notably on the southern side of the cairn between Chambers 1 and 2 (fig. 31).

This interpretation was confirmed on the north-east side of the cairn: one of the basal stones of the outer wall, rather wider than most, which had presumably been laid more or less horizontally upon the ground surface, had cracked about mid-way across; the outer part had sunk down whilst the inner part remained in its original position. Although this part of the site lay immediately beneath the road, there was no reason to suppose that this was a recent deformation. Clearly the sloping parts of the wall as they were found during excavation were not in the positions in which they had been built, but had moved subsequently to the construction of the cairn.

One objection to this interpretation might be the fact that certain parts of the wall remained upright, since one might suppose that the phenomena which are the suggested cause of the wall's decay would have been applied consistently around the entire margins of the cairn. This is by no means certain, however; variations might be explained by differences in the internal structure of the cairn and because it may have been lower in some parts than others. The markedly sloping parts of the outer wall were on the north-eastern side of the cairn to the east of Chamber 3 and on the south-eastern side of the cairn to the east of Chamber 1 (fig. 32). Again the wall was tilted outwards to the west of the entrance to Chamber 3 before returning to its original vertical facing, a picture repeated on the south-west side of the cairn beyond the entrance to Chamber 2. Upright portions of the wall lay within the forecourt, upon either side of the entrance to Chamber 2, and at the western limits of the cairn. Where distortion was due to the lateral pressure of the cairn material itself, this might be applied differentially according to the care with which the backing material of the outer wall and

the core material of the inner cairn had been placed. Where this had been done well the core would be relatively stable and lateral pressure slight. If the core material had been placed carelessly, the pressure on the facing would be greater because the natural stability and hence the natural angle of rest of the material would be less. The apparently greater stability of the walling at the entrances to the passages at Gwernvale may be partly explained by the presence of the chambers themselves, which would reduce the amount of material to be supported; but to an even greater degree it may derive from the fact that the outer walls at these points have the greater natural strength of a corner, which if well bonded will be stronger and dimensionally more stable than a flat length of wall. The same applies to a curving wall, and this might explain the form of the forecourt walling. In the case of the chamber passages there would have been relief on the outer wall, in terms of lateral pressure, because the side walls of the passages are themselves well-laid facings, imposing little or no lateral pressure on the outer wall.

If these arguments are accepted we have explained the presence of both the inner and outer revetment walls with regard to one laterally-chambered Severn-Cotswold tomb; the inner wall marked the completion of the chambers and the inner part of the cairn, whilst the outer wall performed the dual function of a primary blocking to the chambers (while at the same time allowing for their subsequent access) and the presentation of an impressive façade. This second function may have been the sole purpose of the outer revetment walls at some terminally-chambered tombs (*eg* Notgrove, Glos., Clifford 1936; Nympsfield, Glos., Clifford 1938). The inner cairn wall performed a temporary function, marking the completion of an initial stage in the construction: there is no certain evidence that it was intended to fulfil a more enduring purpose. The only anomaly is within the forecourt where the portal stones is tied to the outer rather than the inner revetment wall. It is uncertain how the core behind the stone would have been retained before the portal stone and the outer revetment walls were added, but it is possible that the sequence of construction was different from that of the chambers.

Finds associated with the cairn

Finds from the cairn comprise two querns (fig. 59, nos. 1, 2) and an axe-polishing stone (fig. 60, no. 12). One of the querns and the axe-polishing stone came from the fully excavated area of the cairn to the east of Chamber 1, and the second quern was found at the surface of the surviving cairn between Chambers 1 and 2 (location shown on fig. 31). A third quern was found within the infilling of the post-medieval road on the northern side of the site, contained within material which had evidently been largely derived from the cairn. It is thought probable that all these finds had been derived from the pre-cairn Neolithic phase. No other finds were certainly found within the

cairn; some fragments of pottery and flint which were attributed to the base of the cairn during the course of excavation are now thought to have been derived from the buried soil instead.

THE FORECOURT

(fig. 31; pl. 15)

Very little of the forecourt remained undamaged, but sufficient has survived of the portal stone (Orthostat 1) and walling of the horns upon either side for a reconstruction of its original form to be attempted (fig. 30). Equally, very little of the original deposits within it survived intact. The forecourt was sited very near to the edge of the sand and gravel terrace upon which the tomb stood and it is possible that natural erosion may have accelerated decay here even before the extensive stone-robbing of later centuries.

The portal stone, a shattered and heavily laminated slab of Old Red Sandstone, was almost 2 m long, 0.35 m thick, and survived to a height of about 0.4 m above the pre-cairn surface. There seemed little reason to doubt that it originally stood considerably higher, for potentially (in terms of its surviving width and thickness) it was the most massive orthostat brought to the site. It lay not quite symmetrically at the inner end of a forecourt which must have been at least 5 m long, defined by the walling of the north and south horns of the cairn. The orthostat partly overrides the adjacent stretches of dry-stone walling: although it is conceivable that it was placed in position after the basal courses of the outer cairn wall were laid, the stones of the wall could equally well have been carefully slotted beneath irregularities in the stone after it had been erected. The orthostat was set within a stonehole which was deeper than the base of the stone by an amount which was not determined (fig. 30, F220).

The walling had survived to a height of only *c.* 0.2 m and in parts appeared to be battered slightly inwards, although too little remained to show whether this was characteristic of the wall to its full height. The basal courses had been laid directly onto the former ground surface, continuous with the buried soil beneath the cairn. The base of the A horizon was found within the area of the forecourt, but the top of the profile had been modified during the use of the tomb by activities confined within the forecourt walls. This modified upper layer of soil, partly sealed below the surviving blocking, was confined to the inner end of the forecourt and did not extend beyond the point occupied by the two middle posts of the six-poster (fig. 14, F208, F210). The upper layer of soil was distinct from the buried soil beneath the cairn and from the base of the soil profile within the forecourt itself because of its darker colour, probably resulting from a higher proportion of charred remains. In places the darker soil, between 60 mm and 100 mm thick, extended several centimetres up the face of the walls of the forecourt

presumably as a result of soil accumulation during the use of the cairn or by the sinking of the cairn due to compression. Some erosion of the pre-cairn ground surface had evidently taken place on the south-west side of the forecourt for here the small surviving portion of outer revetment wall was found to overlie a 'step' in the buried soil about 50 mm high; further to the south-east and before it became entirely disturbed by the recent pit F96, this step even showed where the wall had been entirely robbed away. The base of the darker soil thus lay below the surface of the buried soil beneath the cairn; the soil itself contained numerous artefacts, but few are definitely contemporary with the cairn, many probably being residual from pre-cairn periods. The only features which might have been contemporary with the forecourt were several stakeholes (p. 54) and a small hollow (F271, Table 6, p. 152).

Forecourt blocking (fig. 33; pl. 15*b*)

Although most of the forecourt had been heavily damaged, there remained part of a stone deposit which partly sealed the later soil levels which seemed to be all that remained of an original blocking structure which had survived later robbing. The assumed blocking survived to the same height as the outer cairn wall on the northern side of the forecourt (*c.* 0.3 m). It was composed of slabs of different types of sandstone; some were green and micaceous, similar to the stone forming the outer cairn walls, but approximately 40% were of a white quartzitic sandstone of a type rarely found elsewhere during the excavation of the cairn (p. 57). The upper stones were intermixed with dark humic soil, probably of recent origin, whilst the lower stones were intermixed with a reddish-brown sandy soil characteristic of the blocking elsewhere outside the cairn. There was little discernible form to the stone mass, although there was a tendency for stones to be pitched up slightly in the direction of the nearest stretch of the cairn wall (fig. 32). Some stones were propped almost vertically against the wall-face on the northern side of the forecourt: it is possible that they were deliberately placed in this position, but the evidence is not conclusive. The presence of a different variety of stone rarely found elsewhere (the quartzitic sandstone) would suggest that the deposit cannot be explained merely in terms of the decay and collapse of the tomb, and it would seem more reasonably interpreted as part of a deliberate blocking placed within the forecourt.

The six-poster which had lain within the area of the forecourt had certainly decayed or been removed before the blocking material was laid, for postholes F210-11 were sealed by large horizontal slabs within the blocking. We have seen above that there is a certain amount of evidence to suggest that some undefined activities took place within the forecourt before it was blocked, but there is no available evidence to suggest over how long a period of time this had taken place.

It is also unknown whether the forecourt blocking was contemporary with similar processes elsewhere around the tomb, although various possibilities are discussed briefly on page 150.

Finds associated with the forecourt

Although numerous finds were made within the area of the forecourt, there has been extreme difficulty in isolating those which are necessarily contemporary with it. In practice it has been assumed that the finds from the lower soil levels are wholly derived from the pre-cairn phase. The later soil accumulation, however, also contains finds which most probably belong to this phase, as for example Mesolithic flint types and fragments of pottery which appear to belong to vessels of which at least some sherds are stratified beneath the cairn. The most difficult finds are those found within this soil level which on typological grounds could either belong to the pre-cairn Neolithic phase, or have been contemporary with it. These include, for example, three flakes of polished axes, two leaf arrowheads, and three scrapers. This uncertainty also applies to the small quantities of animal bone belonging to domestic species found within this level. None of the Neolithic pots is certainly contemporary with the use of the forecourt, which suggests that the deposition or loss of finds here was not a regular occurrence. This might imply that at least some of the flintwork was derived from the pre-cairn phase. Possibly two finds, however, can be distinguished because of their special nature—an unusually large leaf arrowhead (no. 202) and a scraper (no. 170) made from a type of flint normally used only as raw material for some of the polished axes and the three ogival arrowheads found at the site. Both these finds came from the surface of the soil within the forecourt, immediately below the blocking. Fragments of bone belonging to cattle and pig were found within the stones of the blocking which might belong to this later period.

CHAMBER 1

(figs. 18, 19; pls. 17, 18)

Upon excavation it was found that the polygonal chamber represented by six orthostats, nos. 5-10, was *c.* 3 m long, up to 1.6 m wide, and entered by a narrow gap 0.35 m to 0.5 m wide between Orthostats 5 and 10. The chamber was approached by a passage which curved round to meet the southern side of the cairn more or less at right-angles.

Four of the orthostats of the chamber (nos. 5-7, 10) survived to their original height, *c.* 1.75 m above the buried ground surface, and were standing in their original positions; the other two (Orthostats 8-9) had evidently been broken off at their tops and had tipped slightly into the chamber. Gaps between Orthostats 8 and 9 and between 9 and 10 had been filled with short stretches of walling (pl. 17*c*). These were mostly of green micaceous sandstone (p. 57), but the lower

courses between Orthostats 8 and 9 were of brown weathered slabs. The eastern side of Orthostat 9 was propped by several small rounded pebbles, but no other packing-stones for any of the orthostats were visible. The walling, composed predominantly of quarried stone extended for a depth of between 0.15 m and 0.5 m from the wall-face to meet the coarser weathered stone of the cairn body backing the chamber.

A considerable quantity of modern debris had accumulated beneath Orthostat 8 and removal of this revealed that a hearth had been constructed at this end of the chamber since the turn of the century, dated by modern earthenware within a thick deposit of charcoal and ash. The hearth had been constructed within a stone 'box' formed of a front sill set firmly into the buried soil between Orthostats 7 and 8 and with sides of large upright slabs leaning against the cairn beyond the chamber; its floor was formed of a single large flat slab. All the elements of the hearth were clearly recent, with the exception of the sill, which could possibly have been part of the original structure of the chamber. However, in view of the date of the rest of construction it is likely that this too was not part of the original structure and has consequently been omitted from the accompanying plans. It seems probable that the hearth had been formed by entirely removing a short stretch of walling from the gap between Orthostats 7 and 8, similar to that which remained between 8 and 9.

The passage

The inner passage (up to the inner revetment wall) was predominantly of orthostatic build. The south-east side was made up of three orthostats (nos. 2-4), of which only the innermost was still complete; this rose to a height of *c.* 1.1 m above the level of the buried soil beneath the cairn. Traces of walling survived between Orthostats 3 and 4. The south-western end of Orthostat 4 was propped by a large stone placed beneath it, but no other packing-stones were visible. The north-west side of the passage was much more ruinous. It had originally been composed of four orthostats, of which only one was complete (no. 11) and one was entirely missing (no. 13). The complete stone rose to a height of *c.* 1.4 m above the original ground surface and was linked to Orthostat 10 of the chamber by a short stretch of walling. Orthostat 12 was very fragmentary and its original form is uncertain. Its south-eastern side was apparently propped by a large horizontal slab of stone which extended into the passage. The space between this stone and the missing orthostat, no. 13, had apparently been of dry-stone walling, but all that survived was a line of large blocks of stone upon which this could have been founded. The position of the missing orthostat was represented by a stone-hole (F59), *c.* 0.4 m long and 0.12 m wide; being only 0.05 m deep, this was entirely contained within the depth of the A horizon of the ancient soil. There were no packing-stones and the shape of the hole suggested

that the stone had originally tapered to a narrow base, as in the case of some other orthostats in Chamber 1. Two fragments of modern glazed earthenware were found within the stone-hole. The adjacent orthostat (no. 14) which marks the outer end of the orthostatic passage on this side was also very fragmentary. Although its original height is unknown, its small base suggests that it was originally pillar-like. A single horizontal stone between this and the stone-hole suggested that the two orthostats had originally been joined by a short stretch of dry-stone walling. The orthostats at the outer end of the inner passage were linked by a sill; this had been wedged into a cleft in the side of Orthostat 14 and barely penetrated the ancient soil level. The overall height of the stone was 0.18 m.

The outer passage of the chamber was composed exclusively of stone walling; this was relatively well preserved on the east side, but on the west only a short stretch three courses high survived, adjacent to Orthostat 14. The position of the original wall elsewhere was indicated by slight depressions within the surface of the ancient soil beneath later robbing material. The passage as a whole varied from 0.6 m to 1.1 m across, being at its widest within the inner passage and narrowing both at the chamber entrance and at the outer end of the outer passage.

Reconstruction of the original form of the Chamber

Accounts of the investigation of the site in 1804 (p. 46) inform us that the chamber was surmounted by a single capstone 10 ft long (3.05 m), 7 ft 8 ins in breadth (2.34 m), and 1 ft 6 ins thick (0.48 m), and that this was 'inclining to the south'. It is reasonable to assume that the capstone (which was removed in that year before excavations could proceed) was laid directly onto at least some of the orthostats of the chamber, thus giving an internal height of *c.* 1.75 m. We have seen that the highest surviving orthostat of the passage, directly outside the chamber, is some 0.25 m lower than this; the fragmentary orthostats towards the outer part of the inner passage are much thinner and would seem to have been correspondingly lower. It is therefore likely that the roof of the passage gradually decreased in height to the line of the inner revetment wall. As in the case of other chambers at Gwernvale there is no evidence that the outer passage was ever roofed. It appears that alterations were made to the outer entrance of the passage during its period of use; any reconstruction of the original form of the outer passage is inextricably linked with the interpretation of the passage blocking, and is therefore considered in the following section.

Passage blocking

Several phases were represented in the entrance, for a wall had been inserted across the passage on the line of the outer revetment wall, and the junction between the passage wall and the outer revetment wall on the

GWERNVALE CHAMBER I

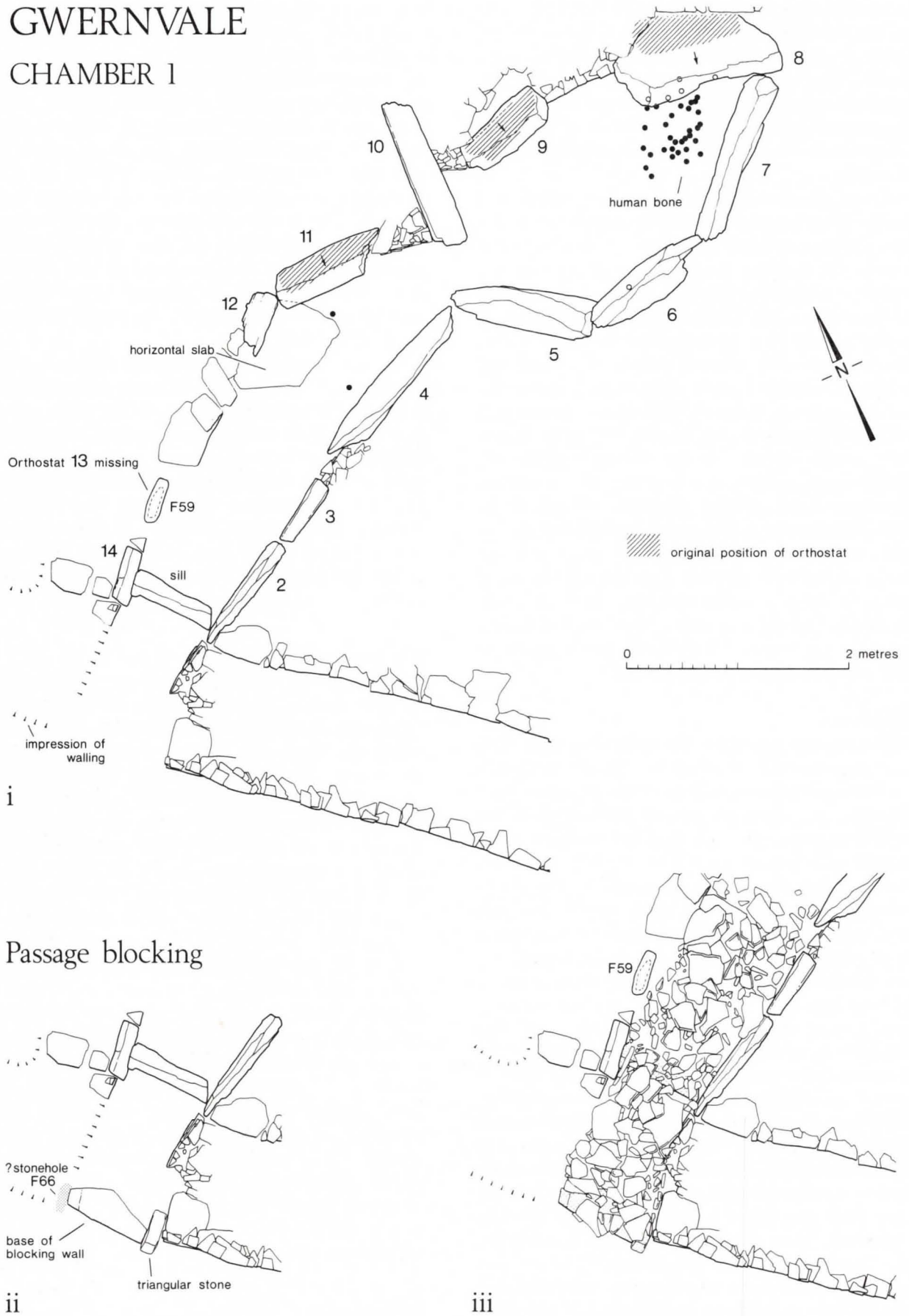


Fig. 18

south-east side of the passage appeared to be unfinished or disturbed.

On the south-east side of the outer passage a stretch of wall *c.* 0.6 m long and 0.32 m high had survived where it butted against Orthostat 2 at the outer end of the inner orthostatic passage. The face of the wall stood 50 mm proud of the inner face of the orthostat, and had been deliberately constructed in this way, for the stones of the lowest course of the wall had been carefully shaped or selected to fit around the end of the stone. The stones of this wall, as elsewhere, had been bonded together with a reddish-brown clay. Some stones of this wall were partly overlain by courses of the inner cairn wall adjacent to Orthostat 2, which suggested either that the inner and outer revetment walls had been built up simultaneously, or perhaps more plausibly that once the inner revetment wall had been completed the outer revetment and the passage wall were constructed and that the stones forming it were carefully fitted into irregularities in the coarsely-built inner wall. The matching side of the passage on the north-west had been largely robbed away, but three courses of stone immediately next to Orthostat 14 still stood to a height of 0.1 m above the surface of the buried soil.

The original arrangement at the junction between the passage wall and the outer revetment wall of the cairn remained a problem that was not easily resolved. It was clear that at one period a wall had been built across the outer end of the passage, almost in line with the outer cairn wall (fig. 18 ii). This blocking wall survived to a height of three courses and behind it and apparently contemporary with it was a mass of stone laid more or less horizontally, which extended some way back into the chamber passage and formed a backing to the blocking wall (fig. 18 iii; pl. 17*b*). But at the point where the passage wall might be expected to join the outer wall and blocking wall more or less at right-angles, there were obvious anomalies in the nature of the stonework. The expected angle between the passage wall and the outer wall was missing, and there was instead a gap which revealed a section through the faces of both the passage wall and the outer cairn wall. Moreover, within this gap, at the level of the uppermost surviving blocking, there was merely a jumble of reddish-brown clayey soil, chips of stone, and several small upright slabs.

At first it was thought that this might be the result of recent disturbance caused by the removal of stonework. Subsequently the upper part of the blocking wall and the backing material extending into the passage were removed down to the buried soil in order to reveal the base of the original passage walls and outer cairn wall (pl. 18*b*). The blocking consisted of a depth of *c.* 0.3 m of green micaceous sandstone slabs (similar to that forming the adjacent walling); it survived within the outer passage from a position opposite the outer ends of Orthostats 4 and 11 to as far as the blocking wall at the outer end of the outer passage. The stones were interleaved with reddish-

brown soil and the deposit survived to its greatest height within the outer walled passage, here to the same height as the surviving cairn material to the south-east. It was preserved across the full width of the passage at this point and it appeared that the stone-robbing which had entirely removed the cairn to the south-west had ceased abruptly once it met the more jumbled and earthy blocking within the passage itself. The stones immediately behind the outer blocking wall were clearly contemporary with it, but it became increasingly difficult from about the junction between the inner and outer parts of the passage to determine whether the stones in the inner passage were really part of the same deposit or were the result of earlier activity within the passage (or even the result of later collapse and disturbance). Therefore it is uncertain how extensive the final stone blocking may originally have been.

The inner part of the deposit, from a point about opposite Orthostat 2 and the stone-hole of the missing orthostat, no. 13, was covered by an increasing depth of reddish-brown soil; this had been truncated by robbing at its inner end, between Orthostats 4 and 11. The accumulation of similar deposits of soil within Chambers 2 and 3 after they had been disturbed and had partially collapsed, makes it likely that this soil too was of relatively recent origin. Although many of the stones which made up the blocking were reasonably horizontal, none appeared to form a level pavement or floor, but within the central part of the passage fragments of human bone belonging to several individuals were found lying on stones at the base of the deposit (p. 153). The remains lay upon a small number of stones at the base of the blocking which had probably accumulated during the life of the chamber; the bones may formerly have been part of a more extensive burial deposit leading into the chamber itself, later disturbed by robbing. It is unlikely, however, that any human bone had been left within the outer part of the inner passage or in the outer passage when the chamber was finally sealed off.

Removal of the blocking revealed for the first time a sill at the outer end of the orthostatic passage which had previously been sealed. It was found that the anomalous jumble of reddish soil and chips of stone at the angle between the passage wall and the outer cairn wall persisted down through the full depth of the blocking material. At the point where the base of the passage wall and the outer cairn wall might have been expected to intersect was an upright slab in the form of an equilateral triangle with one corner pointing upwards (fig. 18 ii; pl. 18*c*). The sides of the stone were approximately *c.* 0.35 m in length and the lower side was set about 0.1 m below the base of both the outer cairn wall and the blocking wall within the passage; it appeared that it had either been set into the A horizon of the buried soil or had sunk into this position. The south-western end of the stone lay *c.* 0.15 m beyond the face of the outer cairn wall and its north-western face was jammed against one end of

the single stone which formed the base of the blocking wall. The top of the triangular stone lay *c.* 50 mm above that of the base of the blocking wall. This had been constructed on the A horizon of the buried soil and had clearly been intended to be in line with the outer cairn wall, but was in fact set slightly askew. The passage wall and the outer cairn wall on the north-west side of the passage had been almost entirely robbed away, but a stone-hole was found at the other end of the base of the blocking wall in an equivalent position to the triangular stone (F66). The hole contained several fragments of coal, and like the remainder of the original stonework in the vicinity its occupant had probably been removed relatively recently. The hole could have originally held a small stone of the same size as the triangular one, but in this instance set with a sharp point downwards. It seemed unlikely that these anomalies could be explained by the removal of orthostats which had been sited to either side of the passage entrance.

The evidence clearly suggests that a sequence of events had taken place which would be most readily disentangled by determining the form of the original construction and the nature of the gap into which the blocking wall had been inserted. On this evidence alone, three interpretations seemed possible. Firstly, it might be supposed that at an initial stage in the construction the junction between the outer cairn wall and the passage wall was left incomplete; once the outer wall and the passage wall had been constructed to a certain height a wall may have been built across the outer end of the passage in line with the outer revetment wall, but separated from it (at the base at least) by two upright slabs, clay, and chips of stone jammed in between. This interpretation would envisage the wall across the outer end of the passage as a more or less primary feature of the cairn, never entirely removed at a later stage.

A second interpretation might see the outer cairn walls and the passage walls joined neatly at right-angles during the initial construction period; subsequently the stones forming the angle between the passage and the outside of the cairn might have been partly shattered and dragged out of position, forming an accumulation of clayey soil (from the bonding between the courses of the walls) and chips of stone. The argument could be sustained by suggesting that the damage to the walls had either occurred accidentally during the usage of the chamber or had resulted from deliberate slighting in order that the blocking wall might be inserted. This would imply that following the initial construction, the passage was left open and was then subsequently blocked. Neither of these interpretations, however, was entirely satisfactory since they did not fully explain the apparently disturbed nature of the south-eastern side of the passage wall.

A third interpretation would maintain that the outer wall had originally been built continuously across the end of the passage entrance; that it was built up at the same time as the walling within the

inner part of the outer passage; that the wall across the end of the passage was later demolished and then re-built somewhat clumsily (at the lowest levels at least) by the choice of stones which were too small for the gap which had been made through the wall; that disturbed material had not been fully cleared away and spaces between the wall-ends and the blocking wall were filled with vertical slabs. This sequence seems the most appropriate hypothesis; the procedure could have been repeated many times and the suggestion of successive entries to a chamber that was normally sealed is acceptable in terms of our knowledge of Neolithic mortuary practice. Although the suggested arrangement of the blocking wall appears to have been somewhat unusual and perfunctory, it may have been more neatly bonded into the outer cairn wall at a higher level. In any case, the appearance of the final blocking wall might be of little consequence, since it would soon be covered over with masses of stone piled against the sides of the cairn in the final blocking procedure. The evidence for external blocking outside Chamber 1 was much less clear than that for Chambers 2 and 3 but it may have followed a similar pattern (see below).

Deposits within Chamber 1

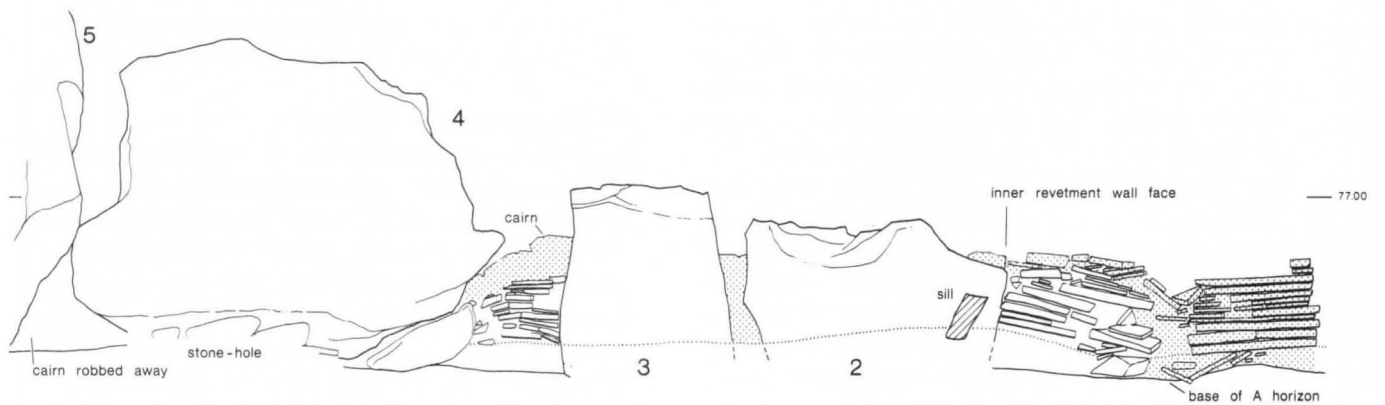
It was clear that a certain amount of reconstruction had been attempted within the chamber in recent years. A rough wall built of large blocks of stone had been constructed above and to either side of the broken stump of Orthostat 9 and propped beneath Orthostate 8. Large boulders intermixed with dark humic soil and modern ceramics had also accumulated within a gap behind Orthostat 8 when it had collapsed forward. Two boulders which formed a step at the entrance to the chamber (between Orthostats 5 and 10) were also a recent addition. All these constructions contained or sealed recent finds, and were cleared away before proceeding with the excavation of any original deposits which might remain. Obviously there had been considerable activity in and around the chamber since the excavation of 1804 and although some ancient finds were present it was uncertain whether any of these remained in the original positions.

A depth of material up to *c.* 0.35 m thick was removed from within the chamber. The upper 0.2 m was a mixture of loose stone, dark humic soil and modern rubbish. On the western side the recent disturbances extended to the base of the ancient soil profile, and one irregular pit in the centre (not shown on the accompanying plans) reached a depth of *c.* 0.3 m below this. No distinct soil horizons could be determined within the chamber comparable to those sealed beneath the cairn and in the outer part of the entrance passage, except for isolated patches adjacent to the bases of some of the orthostats.

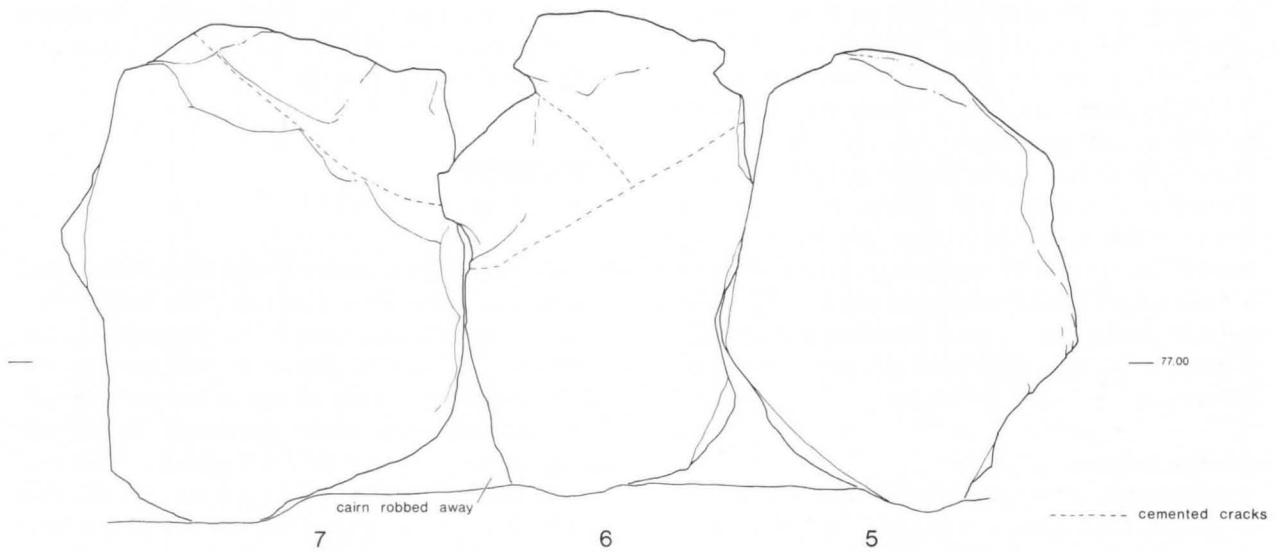
Upon removal of the modern debris a level was reached at which a layer of stone appeared on the north and north-western sides of the chamber between Orthostats 7 and 8. It was composed of a

GWERNVALE

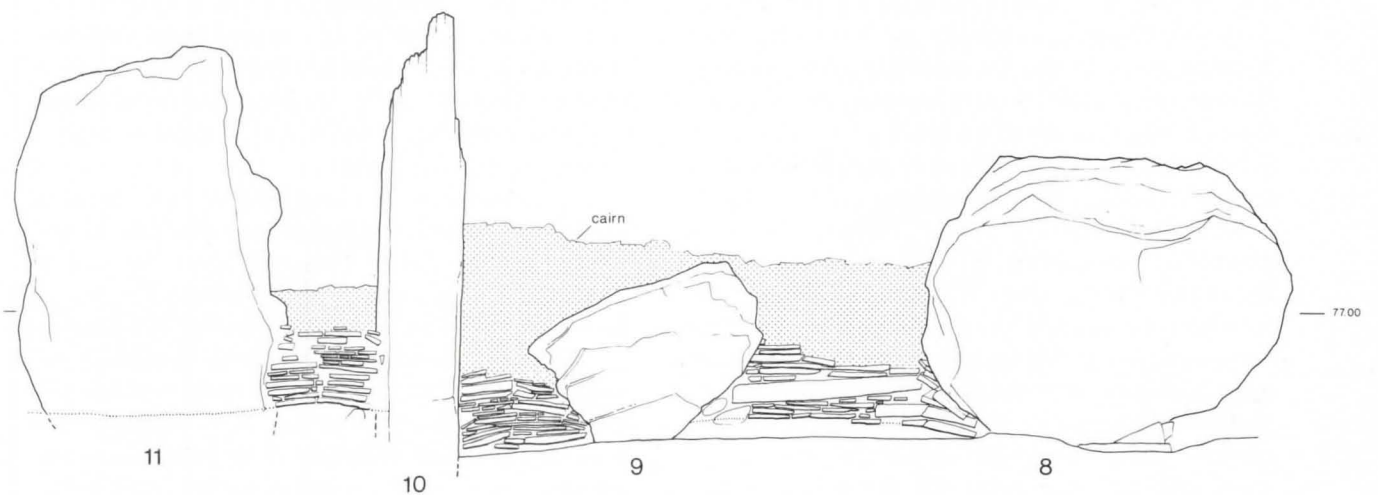
CHAMBER 1 · Elevations



East side of passage



South side



North side



Fig. 19. Stippled portions lie behind the drawn elevation.

mixture of flat and rounded stone between about 0.5 m and 0.25 m across, which seemed to lie partly on clean soil near the surface of the ancient B horizon. Other parts of the 'pavement' lay on a deposit containing numerous charcoal fragments which showed through gaps between the stones; its top was slightly above the base of some of the adjacent stretches of dry-stone walling (which had probably been built upon the ancient ground surface). Modern finds were discovered beneath some of the stones, which could individually be discounted without impugning the antiquity of the remaining stones or the underlying deposit. This charcoally soil layer, less than 30 mm thick, was confined to the area beneath the stones and was found to contain numerous small fragments of human skeletal material (fig. 18; report in Appendix III). However, the stone layer and the charcoal deposit lay so closely confined to the area around the modern hearth at the eastern end of the chamber (p. 65) that it would seem unsafe to assume that the 'pavement' was authentic or that the charcoal and human bone represented part of an original burial deposit *in situ*. Charcoal samples were not therefore submitted for radiocarbon dating. In 1804 the interior of the chamber was said to have been 'dug to a depth of more than 5 feet, considerably below the bottom of the supporters, and into the natural stratum of the soil' and attention was drawn to the discovery of 'several small Bones' (see p. 46). It therefore seems probable that the chamber was entirely dug out in 1804, and that the human remains found during re-excavation had been re-buried after the first campaign, in keeping with the customary practice in the later eighteenth and early nineteenth centuries (Cunnington 1975, 31).

External stonework

A concentration of stone outside the entrance to Chamber 1 extended *c.* 4 m from the side of the cairn, and was composed of green micaceous sandstone similar to that forming the outer cairn walls (fig. 33; pl. 18a). Much of the stone was pitched, but no recurrent patterns could be identified. It was at this stage assumed that the stone deposits beyond the southern cairn walls had been subject to heavy robbing. Much of the stone outside Chamber 1 lay immediately below the modern ploughsoil and a proportion of it lay within a series of irregular scoops and trenches which had been cut down into the B horizon of the soil (collectively numbered F60, fig. 30). The ancient A horizon outside the cairn—continuous with the profile sealed beneath the cairn—was not identified here as in the case of the areas excavated in 1978 outside Chambers 2 and 3. At the end of the 1977 season, before the existence of external blocking structures outside Chambers 2 and 3 was known, it was concluded, somewhat unsatisfactorily, that the pitched stone masses and the underlying features outside Chamber 1 were the result of later cairn robbing. There were no artefacts

other than prehistoric pottery or flintwork which could date this activity, but at the time it seemed possible that these finds could be residual. Because it was thought that the deposits were entirely unrelated to the original structure or use of the tomb, they were probably less critically recorded than they might otherwise have been, and in view of the evidence from better-preserved deposits outside the other chambers, it may now be necessary to reinterpret those outside Chamber 1 in the same light (see p. 77).

Finds associated with Chamber 1

In addition to the fragmentary human remains found within the chamber and inner passage, there was also a small fragment of pig femur; this was in a similar condition to the human remains and may therefore have been contemporary with them (see Appendix III). Flintwork and pottery sherds found within the buried soil in the outer passage are thought to be derived from the pre-cairn phase: the buried soil here was continuous with the buried soil beneath the cairn, and the sherds in each case appear to belong to vessels of which at least a proportion are stratified beneath the cairn. The finds include fragments ascribed to pre-cairn vessels 5, 8, 10?, 12, 14, and 17, and a flint scraper, no. 149.

CHAMBER 2

(figs. 20-22; pls. 19, 20)

Chamber 2 is the central of three lateral chambers on the southern side of the cairn, and like Chambers 3 and 4 was unknown before the beginning of the excavation. The tallest surviving orthostat (no. 19) was in fact built into the bottom of the roadside wall. The chamber was poorly preserved; few of the orthostats survived to their full height and three were totally missing. However, this was the only chamber where any of the original capstones had survived. Although little remained within the chamber to provide evidence of mortuary activities, it was clear that successive entry was made to the chamber before it was finally sealed by an external stone structure which itself seems to have preceded the final masking of this side of the tomb. The evidence compliments that from Chambers 1 and 3 where similar sequences appear to have taken place.

The chamber was T-shaped and entered by a straight passage at right-angles to the side of the cairn. Its dimensions were *c.* 2.7 m by 1.2 m internally, being set up to *c.* 4.6 m from the side of the cairn and only *c.* 2 m from the back of Chamber 3. The sides of the chamber were formed of six orthostats' (nos. 17-21) of which three (nos. 19-21) were still complete. Of these, only Orthostat 19 remained in place: Orthostat 21 had fallen onto the chamber floor, and Orthostat 20 lay in a semi-recumbent position. The walling on the western side of the inner passage adjacent to stone 21 had also slumped into the chamber and inner passage; without

GWERNVALE

CHAMBER 2

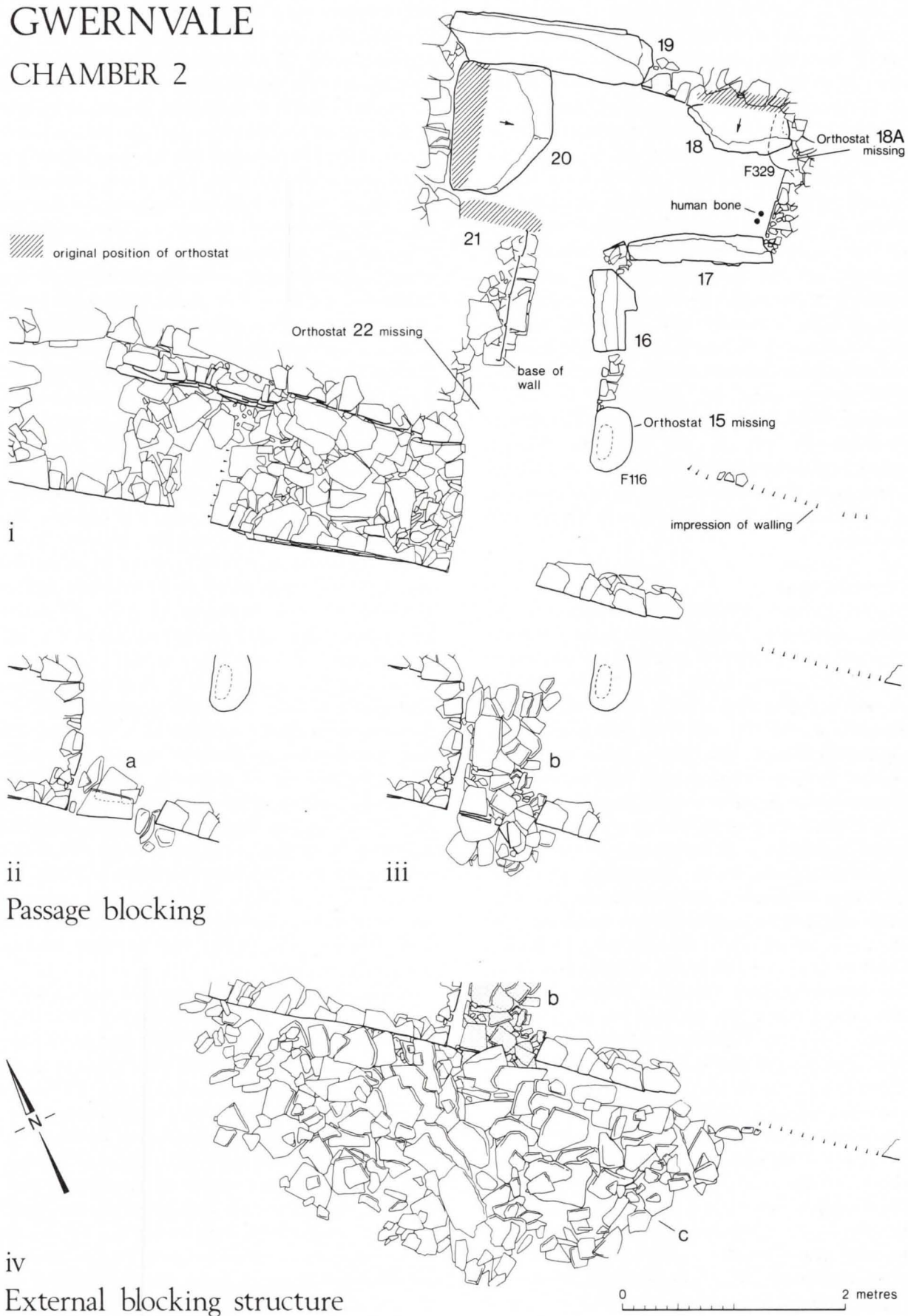


Fig. 20

largely demolishing the wall it would have been impossible to raise the orthostat, which therefore remained in the position in which it was found (leaving part of the buried soil within the chamber beneath that stone intact). Orthostat 20 was re-erected in its former position, clearly marked by the base of the undisturbed cairn on its western side. Of the other orthostats, one on the eastern side of the chamber was missing (18A) and the remaining two (nos. 17 and 18) had lost their tops. Orthostat 18 had also partly fallen into the chamber, but was left in the position in which it was found. There were two stretches of walling within the chamber, both composed of thin horizontal slabs of sandstone apparently of one build with the adjacent cairn. The three complete orthostats, nos. 19-21, are respectively *c.* 1.3 m, 1.3 m, and 1.6 m in height from the level of the ground surface buried beneath the cairn, which suggests that the chamber itself had a minimum headroom of about 1.3 m. The tops of Orthostats 19 and 20 are markedly pointed, suggesting that the sides of the chamber were carried up here by walling which possibly slanted inwards in the form of corbelling in order to support the capstone.

The inner passage

The inner passage, composed of both orthostats and walling, joined the chamber to the inner revetment wall of the cairn. The two sides of the passage were unbalanced, however, for the north-western side was composed of walling and a single orthostat whilst the south-eastern side had two orthostats joined by a short stretch of wall. The inner passage was *c.* 2 m long and between *c.* 0.65 m and 0.80 m wide. All that survived of the north-western side was a stretch of dry-stone walling which had slumped partly into the passage and partly into the chamber following the collapse of Orthostat 21. A deep robbing pit (F279, fig. 30) had cut away the junction between the inner passage wall and the inner revetment wall of the cairn where the missing Orthostat 22 had presumably formed the corner in the manner of Orthostat 2 at the outer end of the inner passage of Chamber 1. The south-eastern side of the passage was equally fragmentary. Orthostat 16 had been partly broken away; a small gap between this and Orthostat 17 had been filled with a narrow stretch of walling and similarly on its other side a jumble of thin sandstone slabs was probably the residue of walling leading towards the outer end of the passage. The angle between the inner passage and the inner cairn wall had been entirely robbed away on this side too, but the base of a stone-hole (F116, cut down into the B horizon) again suggested that the inner cairn wall had met the orthostatic element of the inner passage more or less at right-angles (missing Orthostat 15). The stone-hole was *c.* 0.35 m wide and 0.56 m long; there were no surviving packing-stones, but the shape of the pit suggested that the orthostat had been set against its north-western face.

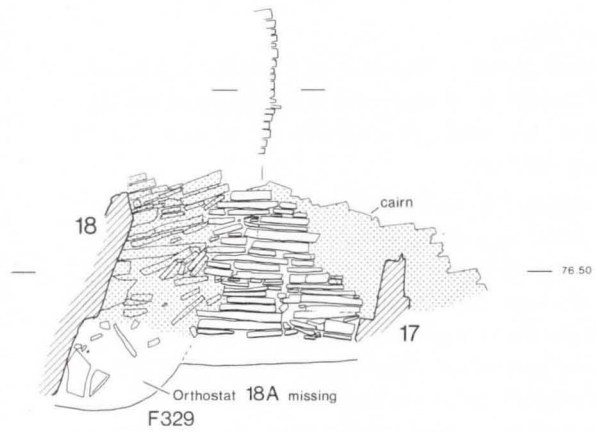
Part of the capstone which had originally been supported on the north-western side of the passage had collapsed into the passage (pl. 19c, fig. 22). Several courses of stone belonging to the wall had also slipped beneath the capstone, but were still in touch with the top of the standing wall, and as we shall see it is therefore possible to reconstruct the original height of this part of the chamber passage with some accuracy. Above the capstone and lying parallel with it was a mass of flat sandstone slabs; these appeared to have fallen together with the capstone and it seems almost certain that they were part of the cairn which originally covered the inner passage. The outer end of the wall on this side of the passage still stood to a height of *c.* 0.7 m; further to the north-west, where only *c.* 0.52 m of the wall was still standing, about 0.17 m of walling had fallen with the capstone, confirming an original headroom within this part of the inner passage of about 0.7 m. The collapsed walling was composed for the most part of green micaceous sandstone, like the rest of the wall, but the upper 70 mm (two stones thick) was of brown weathered sandstone slabs, presumably part of the levelling necessary when the roof was placed in position. The capstone itself was a triangular slab of brown weathered sandstone *c.* 0.78 m by 1.1 m across and only *c.* 70 mm thick, which would have lain with its long edge above the walling on the northwest side of the passage. Although this edge had sustained a little damage (for it lay uppermost at the time of excavation and had probably been fractured by later agricultural activity and stone quarrying), the remainder of the stone was complete. It had been split from a large weathered boulder whose rounded faces were preserved on the surviving edges of the slab. When the position of the capstone is reconstructed (fig. 22) it appears that one corner was originally supported by Orthostat 16; but it must always have been fairly delicately balanced and this is perhaps the reason for its collapse. The remaining capstones above the inner passage and the chamber may have been robbed away while still in their original horizontal positions.

Neatly stacked against the capstone was a mass of stones about eight courses deep and *c.* 0.44 m thick (fig. 22). It was composed of thick greenstone slabs each between 30 mm and 80 mm thick and up to *c.* 0.7-0.82 m long and 0.45-0.5 m across. The stones were bonded to each other with a reddish-brown clay, similar to that found within the body of the cairn, and were so closely related to the fallen capstone that they must have formed part of the cairn originally overlying the roof of the inner passage. Thus the original minimum height of the cairn here was *c.* 1.2 m, this figure being the sum of the height of the passage wall, the thickness of the capstone and the depth of the overlying fallen material. It is significant that the overlying cairn material here, like that partly enclosing Chambers 2 and 3 (p. 59) was composed of green micaceous sandstone, in contrast to other parts of the body of the inner cairn which (in their basal

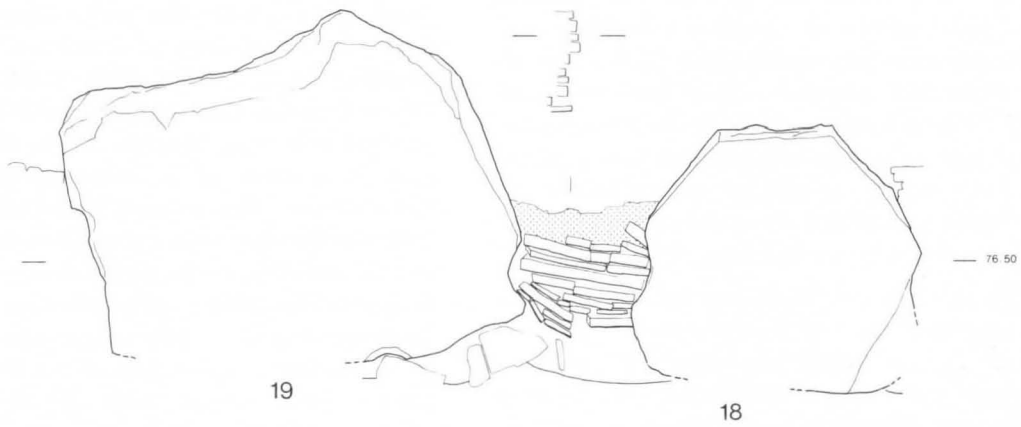
GWERNVALE

CHAMBER 2 · Elevations

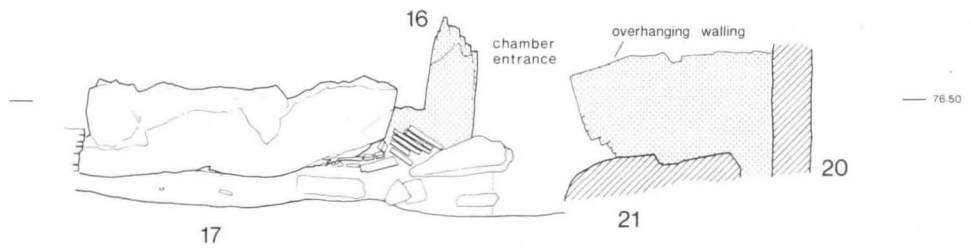
East side



North side



South side



West side

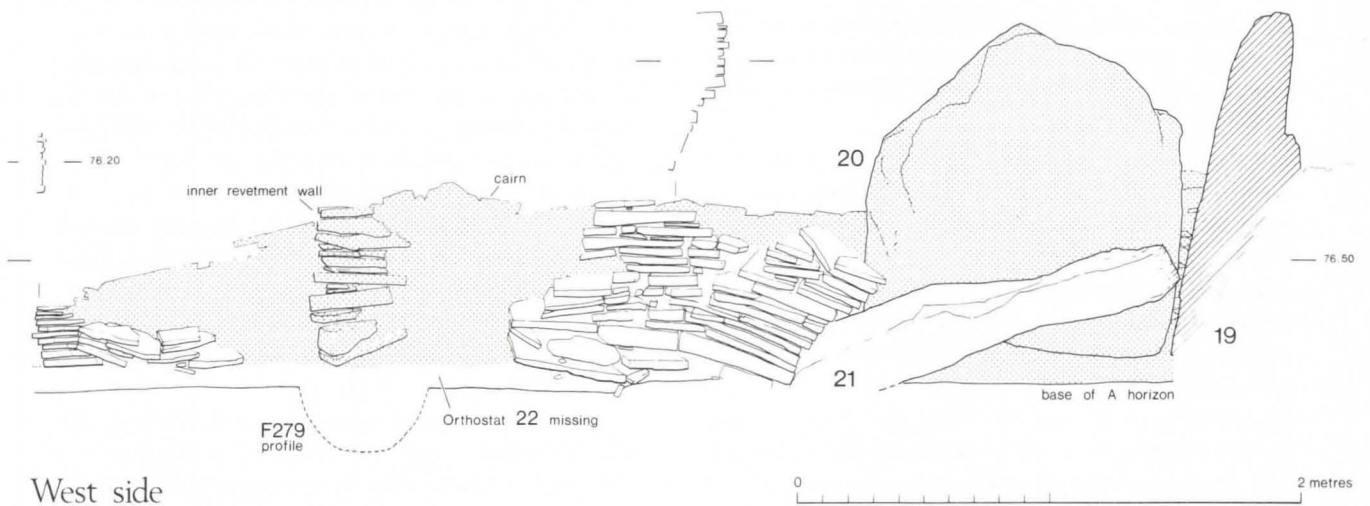


Fig. 21. Stippled portions lie behind the drawn elevation.

courses at least) were built of brown weathered sandstone boulders.

The outer passage

The outer passage, like that of Chambers 1 and 3, seemed unlikely to represent a single phase of construction, for there is evidence of a sequence of blocking structures.

The south-east side of the outer passage had been almost entirely robbed away, but it is most reasonable to assume that this had originally been constructed of dry-stone walling (this being a recurrent feature of the outer passages at Gwernvale). The surviving part of the outer cairn wall stopped almost in line with the inner passage wall, but the 'end' was irregular when viewed in elevation. Two courses of stone survived, of which the upper overhung the lower by *c.* 0.15 m and there were several small thin slabs of green micaceous sandstone (similar to that forming the outer cairn walls) which lay beneath the upper stone and appeared to have been disturbed (fig. 17). The disturbance could not be recent, however, because a blocking wall had later been inserted in the outer end of the passage, on the line of the outer revetment wall and almost touching the north-western end of the outer wall (fig. 20 ii and iii).

On the other side of the passage the structure was better preserved; ten courses of the outer revetment wall survived here, standing to a height of *c.* 0.25 m. It appeared that this part of the outer wall had been set down in an artificial hollow in the ground surface; the A horizon of the buried soil was much thinner at this point and the lowest three courses of stone appeared to have been set back slightly as though to avoid natural boulders protruding from lower horizons of the soil (p. 146). There was no suggestion that the profile of the wall-base had resulted from its partial collapse, and the wall-face must have been intended to be perpendicular, or even slightly battered inwards. Although the outer face of the wall was reasonably well formed, the immediate return into the outer passage was fairly irregular; no attempt had been made to use (readily available) stones with squared corners to form the angle between the outer wall and the passage.

Apart from a single stone's depth behind the cairn wall (*c.* 0.2 m) it was not possible to determine the exact face of the adjacent, heavily disturbed passage wall. But the inner end of the outer passage wall was indicated approximately by a marked distinction between stones which formed the wall and those which constituted the residual blocking within the passage, the two being separated by a slight gap (fig. 20 iii). The absence of a well-formed angle between the outer cairn wall and the outer passage wall here, as on the other side of the entrance, would suggest (as in the case of Chambers 1 and 3) that the outer wall had originally been built continuously across the entrance to Chamber 2 and that this had been subsequently broken through, causing the ends

of the outer cairn wall on the line of the outer passage to be rough and irregular.

Deposits within Chamber 2

Following the removal of recent material from above the chamber, it was clear that apart from the blocking within the outer passage little or none of the visible deposits within the inner passage and the chamber were of any antiquity. Rather, they had resulted from the collapse, decay, and robbing of various periods after the chamber had gone out of use. The inner passage was largely occupied by collapsed roofing, and the western 'transept' of the chamber by fallen Orthostats 20 and 21. Within the eastern 'transept' was a deposit of reddish-brown sandy soil and stone slabs which had evidently been introduced into the chamber after the collapse of the orthostats and the roofing in the inner passage; it survived to the same height as the orthostats and walling forming the north-east, south-east, and southern sides of the chamber, being *c.* 0.5 m high on the northern side (about the same height as Orthostat 18), but had been reduced to a depth of only *c.* 0.3 m on the southern side as a result of a recent attempt to extract Orthostat 17. The soil was found to contain some undiagnostic flint flakes, a small number of pottery sherds probably of Neolithic date, and two small fragments of human cranium. Sieving of soil samples procured several minute fragments of glass and porcelain and a small post-medieval bead (all less than *c.* 4 mm across). Although the recent finds might be taken to date the period at which the soil and stone entered the eastern side of the chamber, they were all sufficiently small to have been brought down by worm action, and there is no evidence to suggest at what date the orthostats within the chamber and the passage roofing had collapsed.

Orthostat 21, the roofing of the inner passage, and part of the walling between Orthostats 18 and 19 had collapsed onto the surface of a buried soil similar to that beneath the cairn, part of which had evidently been disturbed, and in places was penetrated by slabs of stone which seem to have either sunk down into it or filled hollows which had been cut down through it. At the south-east end of the chamber the soil had been cut through by a pit which had presumably been dug to remove Orthostat 18A (fig. 20, F329).

The surviving buried soil in the inner and outer passage and the chamber (sealed beneath later infilling) contained several undiagnostic flint flakes, sherds of several pottery vessels which may have been contemporary with the period of the chamber's use and its final blocking (fig. 43), and several fragments of human bone (fig. 20).

The state of the outer passage and blocking show that the chamber had been entered during the life of the tomb, presumably in pursuance of mortuary practice, but it must remain an open question whether any substantial mortuary deposits were left within the chamber when it was finally sealed in the Neolithic period. With the possible exception of

GWERNVALE CHAMBER 2 · Collapsed roofing

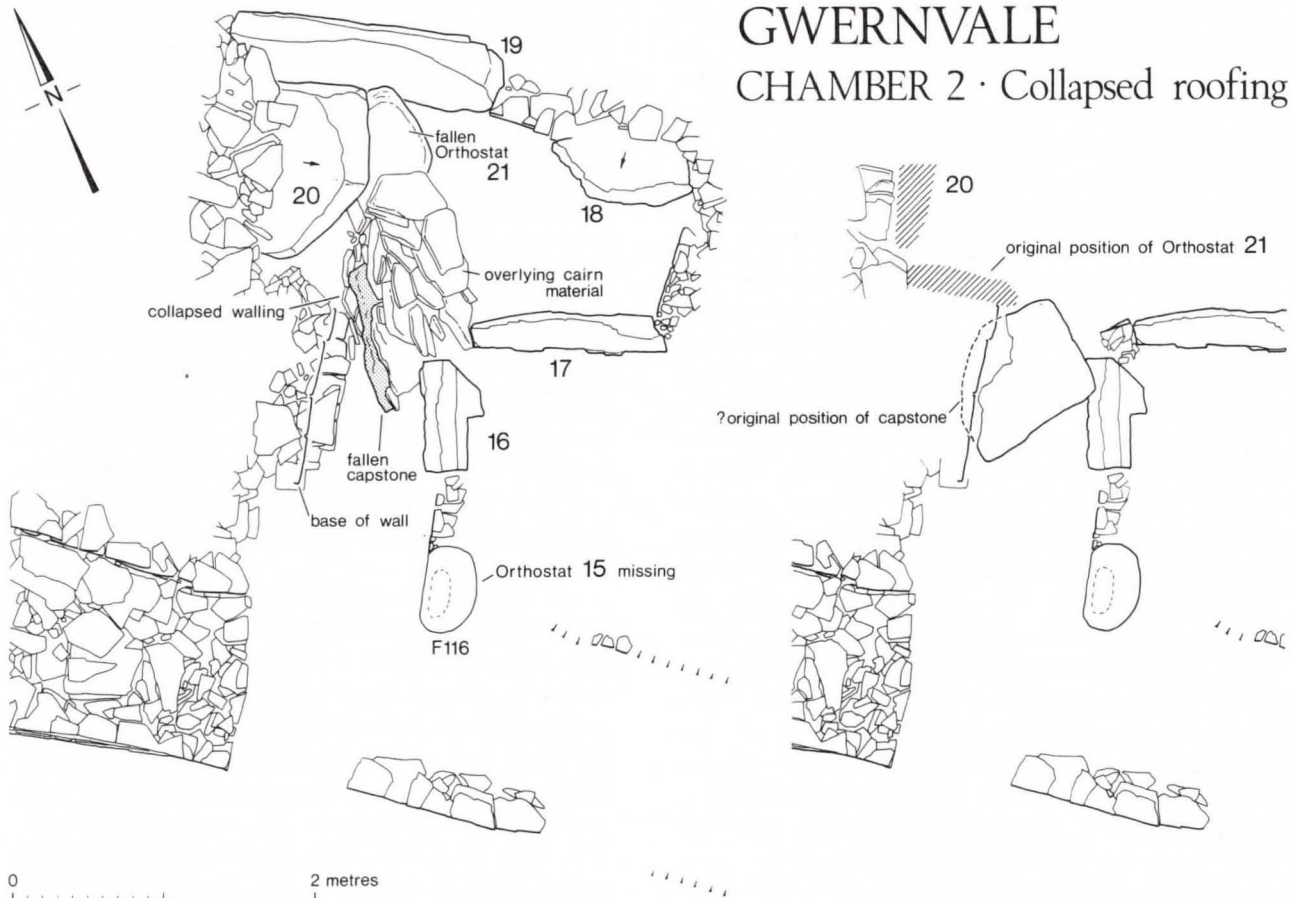


Fig. 22

skeletal material, it seems that the interior of the chamber and inner passage was essentially empty at this time, for as we have seen various orthostats and parts of the roofing had fallen down, sealing the buried soil, and yet nothing was found beneath them. This appeared to be the case too with Chamber 3, where the blocking of the outer passage had sealed the entrance to an apparently empty chamber (p. 80).

Subsequently the chamber may have been entered at some unknown date by means which caused the collapse of various orthostats and parts of the roofing. None of the stones within the inner part of the chamber was of sufficient size to have ever formed the main part of the roof: they were generally moderately-sized slabs of green sandstone which may have formed corbelling supporting a larger capstone, or could have been part of the cairn assumed to have overlain it. Thereafter, parts of the chamber became infilled with soil from an unknown provenance (see also soil in Chamber 3, p. 80) which was further disturbed by stone-robbing at a later date. The alternative would be that, had the chamber been filled when it was finally sealed, this material must have been systematically emptied before the collapse of various orthostats.

Passage blocking

A succession of stone structures found within the outer passage of Chamber 2 and upon the line of the

outer cairn wall are best described in their order of deposition. At the bottom were two slabs of green sandstone (fig. 20 ii, a; pl. 20c); one slightly overlapped the other and its 'front' edge lay more or less on the line of the outer cairn wall. It was *c.* 0.5 m long, 0.2 m wide and 30 mm thick; it sloped down to the outside of the cairn and was slightly separated from the ends of the outer revetment wall to either side. Although no clear explanation was found for the spaces, either at this level or higher up, it is possible that it resulted from a poor attempt to bond in the blocking wall to the ends of the outer cairn wall. This pattern can also be seen to either side of the blocking wall inserted across the entrance to Chamber 1 (fig. 18, p. 67), and in Chamber 2 also the gaps had been partially filled with small upright slabs. The lowest slabs of the blocking lay upon a buried soil at a slightly higher level than the base of the outer cairn walls to either side of the entrance (fig. 17). The soil beneath the slabs included small fragments of green sandstone and may have been artificially built up to some extent while the chamber was in use. Alternatively this difference in level may have been caused by natural sinkage or by the artificial lowering of the buried soil beneath the outer revetment walls (p. 74).

Above these lowest slabs was a jumble of small pitched slabs of green sandstone and reddish-brown soil, *c.* 70 mm thick in all (pl. 20b). Whatever the explanation of this overlying rubble, it separated the

lower slab from a different structure, a fragmentary coursed wall founded upon a group of weathered sandstone boulders which projected beyond the line of the outer wall of the cairn (fig. 20 iii, *b*; pl. 20*a*). Two larger weathered sandstone boulders up to 0.35 m by 0.5 m across and between 80 mm and 100 mm thick had been placed side by side above the rubble within the entrance to the passage, and projected between 0.25 m and 0.35 m in front of the line of the outer revetment. They overlay two smaller weathered boulders which lay up to *c.* 0.5 m forward of the outer revetment wall and which in turn overlay a jumble of small fragments of green sandstone within the surface of the buried soil outside the cairn. Founded somewhat insecurely on the larger western stone within the passage were the remains of a wall which like the lowest sandstone slabs was separated by a slight gap from the end of the outer wall on the north-west side. The face of this inserted wall lay on the same line as that of the outer cairn wall. Only three to four courses of the wall were in place, to a height of *c.* 0.1 m, and arranged in a manner which levelled-up irregularities in the surface of the underlying boulder. The small stretch of wall, like the outer cairn wall, was built of green sandstone, but it also included one quarried slab of a white quartzitic sandstone. On the adjacent sandstone boulder was a scatter of green and white sandstone slabs trailing off from the coursed wall to the west and making it seem probable that a wall which once continued across the passage had subsequently slipped or been pushed outwards over the underlying sandstone boulder. This was to some extent confirmed by the fact that one of the 'slipped' stones fitted onto one of those in the coursed wall (the two are joined by an arrow on fig. 20 iii). The short length of wall-face and these 'slipped' stones on the south-east side were immediately overlain by the substantial stones of the external blocking structure (described in the following section); there is therefore little doubt that the blocking of the chamber entrance was already in a disturbed condition when it was finally obscured. The top of the upper, coursed wall lay at a height of *c.* 0.36 m above the surface of the buried soil beneath the adjacent outer revetment wall.

Behind the face of the blocking wall and the underlying sandstone boulders was a mass of stones within the outer passage, some pitched, others horizontal, and composed of various sorts of stone. Some were green sandstone similar to that forming the outer cairn walls, others were weathered sandstone boulders or quarried slabs of white sandstone. The deposits here had been more heavily disturbed than those towards the outer end of the entrance passage (which were to some extent protected by the large slabs of the external blocking). The south-eastern edge of the deposit within the outer passage had been robbed away, together with the outer passage wall on this side; its depth tailed off towards the inner revetment wall, where it had been broken into by the robbing-pit which had removed

Orthostat 22 (fig. 30, F279; pl. 19*a*). A meagre trail of stones skirted the eastern side of the robbing-pit and ran on into the inner passage. At this point stones became confused with a general scatter of small slabs lying upon the buried soil, at least some of which had resulted from the decay and collapse of the tomb. Thus for reasons of uncertainty, a limit has been drawn to the passage blocking on figure 20 at the point beyond which its existence became speculative, on about the line of the inner cairn wall. By this point the deposit was very thin and no internal structure was discernible, but there seemed little reason to doubt that it was the same deposit which acted as a backing to the inserted blocking wall at the chamber entrance, where the backing stone were bonded into both the coursed wall and the underlying sandstone boulders, showing that they had clearly been built up at the same time.

It is possible from the nature of this blocking that it is the result of several different phases. The lowest stone slabs (fig. 20 ii, *a*) might be the residue of an earlier blocking wall which was intended to repair the gap through the outer revetment wall and to preserve the outer appearance of the cairn. The slabs are of a similar stone to the outer wall and although they were not bonded in on either side, this may have been done at a higher level with stones now missing. Thus, these lowest slabs are similar to the blocking within the outer passage of Chamber 1 (fig. 18 ii; p. 68), and the earlier blocking structures within the outer part of Chamber 3 (fig. 23 ii, ; p. 82). As we have seen, the lowest slabs of the outer blocking within the passage of Chamber 2 were overlain by deposits of an entirely different nature. The immediately overlying rubble might have been debris from the removal of the inserted blocking wall, separating what could be termed a 'temporary' blocking (designed to preserve the outer appearance of the cairn) from a structure which clearly shows no such consideration. Nevertheless, the wall may originally have been carried up to the full height of the outer cairn wall at this point before it was disturbed.

If, as seems likely, the outer cairn wall here was originally of about the same height as that conjectured on better evidence on the northern side (0.6-0.8 m, p. 85), the fact that the top of the surviving blocking wall lay at *c.* 0.36 m above the base of the adjacent outer cairn wall would suggest that between *c.* 0.25 m and 0.45 m was missing here. Because the sandstone slabs did not observe the outer revetment wall very closely, it seems possible that here (as in the case of the latest passage blocking in Chamber 3) the blocking structure preceded the final masking of the cairn by only a short interval. In this instance it may not have been essential to ensure that the outer appearance of the cairn was fully restored since it would itself be soon concealed by the external blocking structure. However, we have seen that the coursed wall overlying the sandstone boulders was probably disturbed before the external structure was put in place. In this case the uppermost blocking wall

may have been intended to be a temporary replacement to the underlying blocking wall, itself partly removed in order to re-enter the chamber. Both interpretations are possible.

Certain inferences can be made with some confidence, whatever the precise details of the sequence might be: that the chamber was entered upon at least two occasions (and possibly many more times that can be traced by direct evidence) and that various 'temporary' blocking structures were succeeded by an external structure upon or soon after the final closure of the chamber. The primary structure, a wall built continuously across the entrance passage, was broken through and probably replaced by one (fig. 20 ii, *a*) which may have risen to the full height of the outer revetment. This may have been subsequently removed, resulting in the accumulation of a layer of soil and stone rubble separating the lower blocking wall from an upper one (fig. 20 iii, *b*), which may or may not have been contemporary with the final blocking of the chamber. The blocking walls were almost certainly backed by a mass of stone which extended back at least as far as the line of the inner revetment wall; presumably this was the base of a structure which blocked the entire outer passage to at least the height of the lintel at the outer end of the inner passage, at a height of *c.* 0.7 m.

External blocking structure

The latest blocking in the outer passage of Chamber 2 was succeeded by an external blocking structure immediately outside, which appears to be an initial stage in the final closure of this part of the tomb (p. 85). It was necessary to excavate this structure in two stages; the southern part lay within the area of the new road, its kerb, and the drainage system, and for this reason had to be entirely excavated in 1977 without reference to the northern part and the entrance passage to Chamber 2. Although only parts of the chamber and this external structure had been revealed at this stage, it was already apparent that the chamber had been entered from this side of the cairn and there were general indications of the form and function of the mass of pitched stone outside it. Apart from the absence of a photograph showing the entire structure, and despite slight difficulties in matching detailed stone drawings made in consecutive years, little information was lost from this unfortunate division of the excavation.

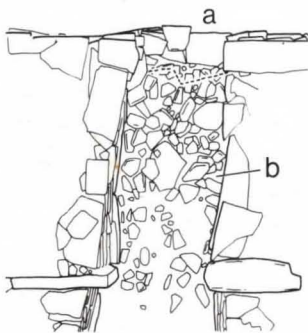
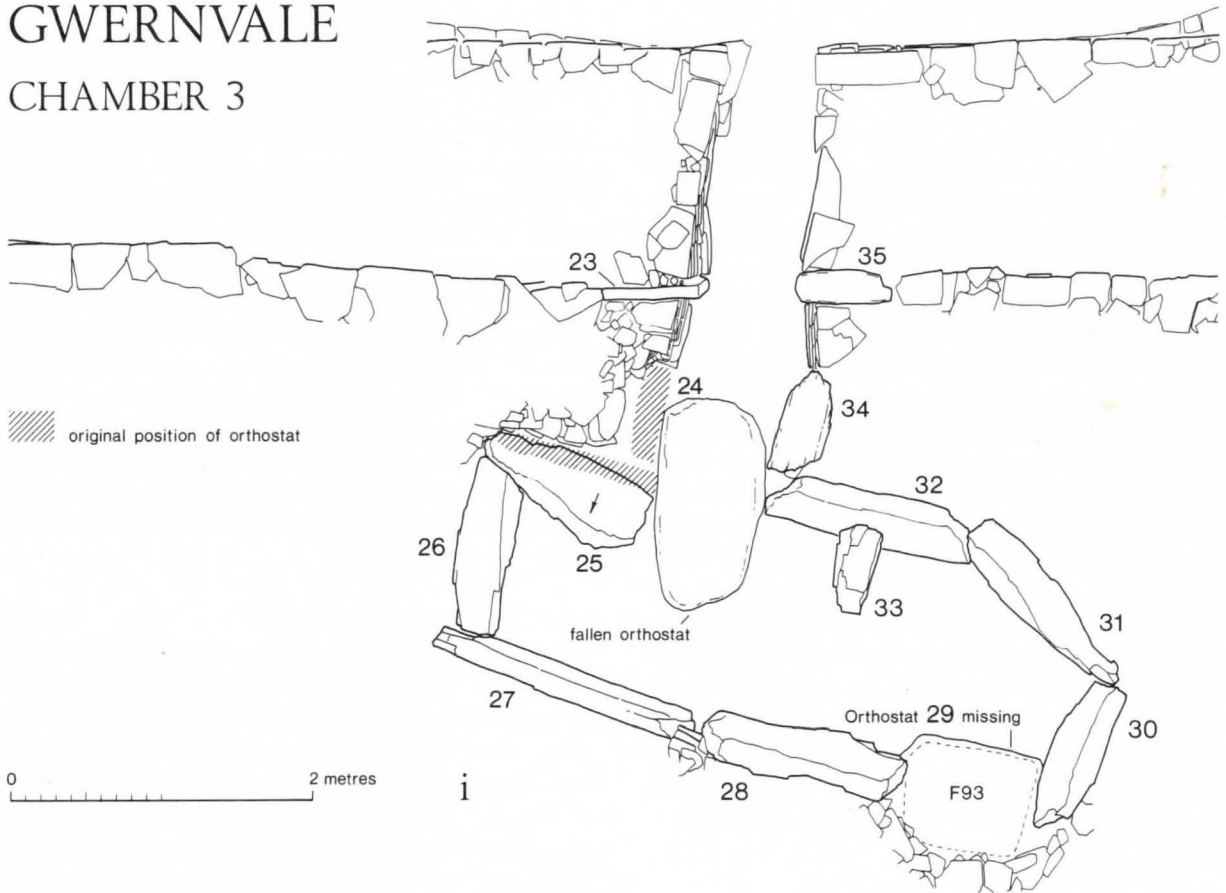
The external blocking had the form of a semi-circular mass of stone with a radius of about 2 m, composed of stone slabs and boulders, mixed with fairly clean reddish-brown soil, pitched at a steep angle and leaning against the outer revetment wall and the inserted blocking wall at the passage entrance (fig. 20 iv). The stones were up to *c.* 0.6-0.75 m long and generally between *c.* 50 mm and 130 mm thick, although some boulders were thicker. Various types of stone were present, slabs of brown weathered sandstone probably split from glacial boulders,

smaller rounded boulders, and also slabs of green sandstone. Some of the latter were similar to the stone forming the outer walls of the cairn, but of a much greater size. The structure survived to a height of *c.* 0.4 m; in places there were several courses of stone, but its upper surface had been 'planed off' to a single level by later stone-robbing. On the west side of the passage entrance it was clear that the pitched stones had been placed directly against the outer face of the cairn, but they were still pitched in the direction of the chamber entrance. To the east of the entrance the relationship had been obscured by the virtually complete robbing of the outer cairn wall. The basal stones of the structure had, like the cairn itself, become partly submerged in a reasonably well-defined buried soil, which was continuous with that below the cairn. Stones had also partly sunk down into several pre-existing pits and hollows (F67, F325, F326, Table 6, p. 152).

Finds associated with Chamber 2

The small fragments of human bone found on the surface of the buried soil within the chamber are reported in Appendix III. The chamber appears to have been the only one associated with any appreciable quantity of pottery. This can be divided into two broad groups—a poorly stratified first group, which nonetheless appears to have been contemporary with the use of the chamber, and a more securely stratified group associated with its final closure. The first group comprises six vessels, nos. 19-24, of which only two have any distinctive sherds. Sherds of vessels 19, 21, 22, and 23 were only found within disturbed contexts within and around the chamber—principally within soils filling the chamber which had accumulated since the robbing and partial collapse of the structure—and which possibly therefore represent vessels originally deposited within the chamber, which had become disturbed by later robbing. Sherds of vessel 20 were found also within this soil, but also came from the buried soil in the outer passage, and from contexts outside the chamber entrance. Likewise, sherds of vessel 24 were found on the surface of the buried soil beneath the blocking structure outside the entrance, within this structure, and also in the buried soil beneath the lowest blocking wall across the entrance to the chamber passage. Pots 20 and 24, therefore, would seem to have been broken and scattered at times when the chamber entrance was open. The second group of vessels (pots 25 and 26) which was probably contemporary with the closure of the cairn, was found exclusively outside the chamber entrance, and is discussed below in relation to this later blocking (p. 103). The only other find of any note found near the chamber was a single platform blade core with a scraper edge, found within the buried soil outside the chamber entrance (no. 1). It was the only core from the site which had been utilized in this way, and might, from its context, have been contemporary with the use of the chamber.

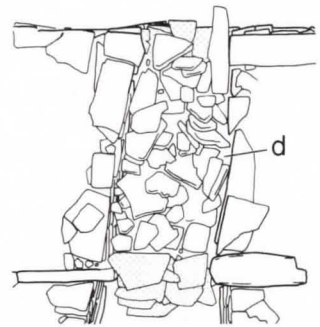
GWERNVALE CHAMBER 3



ii
Passage blocking



iii



iv



v
External blocking structure



Fig. 23

CHAMBER 3

(figs. 23-26; pls. 21-25a)

Chamber 3 seems to have been the only one entered from the northern side of the cairn. It was unknown before excavation, being overlain by the recent trunk road, the road verge, and the road-side wall, all the standing orthostats having been cut off at one level during earlier road construction. In spite of this the chamber was remarkably well preserved and the enclosing cairn and cairn walls were much better preserved than in the case of the other chambers. The chamber entrance was also well preserved at its lowest levels, although at a distance of *c.* 2 m from the outer cairn wall the hollow way of the post-medieval highway had cut down through the external deposits and into the B horizon of the buried soil, effectively creating an artificial edge to the site. Chamber 3 was excavated after Chambers 1 and 2, and because of its relatively good state of preservation answered some of the problems which had been left unsettled by the others. Although nothing survived within the chamber of direct relevance to the question of mortuary function, the clear sequence of blocking structures within the chamber passage and upon the outside of the cairn was crucial in the interpretation of the tomb's manner of use and final closure.

The chamber was approximately 4 m long and 1.4 m wide and was set up to 5 m from the northern side of the cairn, the back of the chamber being only *c.* 2 m from that of Chamber 2. The sides were formed of eight orthostats (nos. 25-32); a further orthostat on the north-eastern side (no. 33) would seem to have formed an interval division (unless it fulfilled some structural function with regard to the walls or roof of the chamber). One of the orthostats (no. 29) was entirely missing; its position lay directly below a recent gate and the orthostat had evidently been dug out in order that one of the posts might be erected (F93). The tops of all the chamber orthostats were missing, having been cut off at about 0.8 m above the ancient ground surface. The stones had been placed fairly tightly together during construction and at the levels which survived there were few gaps which had needed to be filled with dry-stone walling. However, narrow spaces between Orthostats 30 and 31 and between 31 and 32 had been stopped with small slabs, and a gap between the surviving tops of stones 27 and 28 had been filled with coursed walling which may have originally risen up to help support the capstone(s) of the roof. There is no direct evidence of the original height of the chamber, but comparison with Chamber 2 (p. 72) and consideration of possible reconstructions of the cairn's original form (p. 143) would suggest a height of at least 1.3 m above the ground surface. If so, approximately 0.5 m is missing from the tops of at least some of the orthostats of the inner part of the chamber. This reconstructed height was confirmed by the discovery within the inner passage of a complete orthostat (fig. 24, Orthostat 24) which probably rose

to a height of *c.* 1.3 m. Most of the surviving orthostats were in their original positions, although no. 25 had fallen slightly forward into the chamber, bringing down part of the cairn behind it, and Orthostat 32 had probably fallen slightly towards the north-east, together with the 'dividing' stone, Orthostat 33).

The inner passage

The inner passage was symmetrical, with an orthostat on each side forming a junction with the chamber itself (Orthostats 24 and 34) and beyond these short stretches of dry-stone walling meeting orthostats (nos. 23 and 35) on the line of the inner cairn wall. The entrance to the chamber and the inner passage was between 0.7 m and 0.8 m across, and narrowed abruptly on the line of the inner revetment wall. Orthostat 24 had fallen forward into the passage and was re-erected so that excavations might proceed. Although it was not possible to define clearly its original stone-hole (for it would appear that this had been fairly shallow, devoid of packing, and contained entirely within the A horizon of the buried soil) its former position was indicated by the 'cast' of its shape where the backing cairn and the stone walling of the north-west side of the inner passage had been brought up to meet it (fig. 24). The stone was 1.37 m long, but the manner in which it fitted the adjacent walling would suggest that it had originally stood to a height of *c.* 1.3 m above the contemporary ground surface, providing a minimum headroom for this part of the chamber passage. We have seen above that this too was the likely height of the chamber itself. The opposed orthostat (no. 34) had been cut away at the top but had presumably been of an equivalent height originally. There is less certainty about the amount missing from the two orthostats along the face of the inner cairn wall (nos. 23 and 35), for although the stones had been truncated, their shape and the slight amount of disturbance suggested that only a small proportion of each had gone. It therefore seems likely that whereas the inner part of the inner passage had been approximately the same height as the chamber, its outer end (at the inner revetment wall) was much lower, perhaps not much more than the *c.* 0.6 m of Orthostats 23 and 35. The walling within the inner passage, which survived to a height of *c.* 0.7 m, was composed predominantly of quarried stone, although the wall of the north-west side had been founded upon a larger slab of more weathered quarried stone. Both walls were placed, perhaps coincidentally, above small pits (F323 and F324, Table 4, page 151). These partly underlay the cairn behind the wall-line and were not fully excavated. A marked contrast in the appearance of the walls of the inner passage and those of the outer passage is commented upon below (p. 80).

Outer passage of Chamber 3

The outer passage extended from the inner to the outer revetment, a distance of *c.* 1.5 m. The sides of

the passage were lined with walling which still stood to a height of *c.* 0.6 m above the ancient ground surface. The walling was notably coarser than both the walling within the inner passage and the walls of the outer revetment. The passage narrowed from a width of 0.7 m on the line of the inner cairn wall to as little as 0.5 m on the outer face of the cairn, where obvious anomalies suggested that alterations had been made to the original structure of the cairn. Both of the angles formed by the junction of the outer revetment wall and the passage walls were irregular and out of keeping with the standard of 'finish' elsewhere. A low wall, only about 0.1 m high and composed of three courses of stone, was in place across the outer end of the passage. But this was not of one build with the outer walls of the cairn, for the stones were poorly fitted and slightly out of alignment (fig. 23 ii, *a*, pl. 24*b*), with every appearance of having been inserted in a gap in the outer wall. This blocking wall filled only a part of the gap in the outer revetment. In elevation from outside the cairn, the ends of the outer revetment wall were jagged; stones of one course overhung those beneath, especially on the western side, where a long (and undoubtedly original) stone in the lowest course of the outer wall projected part way across the passage entrance and underlay the inserted wall described above (see fig. 26 and pl. 24*a*). Inspection of the passage walls showed other anomalies. The inner part of the western wall, though of a coarser build than either the walling within the chamber or the outer cairn wall, nevertheless maintained a reasonably even and vertical face. However, from a point about half-way from the inner wall to the outside of the cairn the face deteriorated and other stones jugged out into the passage (pl. 23*b*), as in the elevation of the outer cairn wall. This pattern was repeated on the eastern side of the passage though it was less marked in this case and was limited to the extreme outer end of the wall.

Deposits within Chamber 3

After clearance, the chamber and the inner passage could be seen to contain apparently stone-free reddish-brown sandy soil, surviving to the same height as the chamber orthostats (pl. 21*a*). Excavation of the robbing pit which had removed Orthostat 29 at the southern corner of the chamber revealed that the filling was consistent downwards for a depth of *c.* 0.8 m, at which point it met the surface of a buried soil horizon at about the base of the orthostats. The chamber was subsequently excavated in a series of horizontal spits (leaving the stones blocking the outer passage in position). Although it was found to contain some small slabs of green sandstone, there were no dense concentrations of stone or any other evidence for a collapse of the chamber roof, like that in Chamber 2. Its removal revealed Orthostat 24, which had fallen across the chamber entrance (fig. 31; pl. 23*a*), showing that the soil had accumulated since the destruction of the chamber and chamber roof.

The fallen orthostat lay directly on the A horizon of the buried soil within the inner passage and the part of the chamber which it covered. There was very little material between the fallen stone and the surface of the buried soil, which was continuous with that throughout the passage to the chamber and the area outside the cairn. However, the original soil profile had been abruptly cut through inside the chamber from a point coinciding precisely with the south-west end of the fallen stone. Thus the upper part of the soil profile had been entirely removed from the interior of the chamber, the remaining surface consisting of a series of irregular pits and hollows which had been dug into the B horizon of the ancient soil. The only artefacts recovered were a small number of tiny flint flakes from samples of soil sieved from each spit during excavation.

It is not known whether human skeletal material had ever been deposited within the chamber, but this function is at least implied by the evidence for successive entry to the chamber through the outer wall of the cairn (p. 82). It is also unknown whether any or all of such a deposit was still intact at the stage when the chamber was sealed for the last time. Although there is no clear evidence for the date at which the soil profile in the interior was dug away, this almost certainly occurred after the collapse of Orthostat 24 and therefore probably some time after the abandonment of the tomb. The fact that the original blocking deposits in the outer passage were still intact (p. 84) shows that entry to the chamber would have been from the top of the cairn and since none or almost none of the chamber roofing had collapsed into the chamber or inner passage this would suggest that the roof of the chamber was systematically removed before Orthostat 24 had collapsed. Possibly the roof of the chamber was first revealed during stone-robbing, and in the process of removing the capstones Orthostat 24 may have been caused to fall into a chamber which was still essentially empty of soil or stone and in the state in which it had been left at the final closure of the chamber. Subsequently, the floor of the chamber and any overlying deposits may have been casually dug away, the disturbance being delimited in the inner passage by the already fallen stone. Certainly there was no surviving bone within the inner passage and no reason to suppose that this had been disturbed in the interval between the sealing of the chamber and the collapse of Orthostat 24. There is no evidence whether this also applied to the interior of the chamber. It seems probable that the chamber had been disturbed at or by the end of the eighteenth century since various accounts of the site from this date onward mention only a single chamber (without doubt Chamber 1); it would seem most unlikely that Chamber 3 had survived undetected within the body of the cairn until this late date. The most extensive stone-robbing had probably taken place during the course of road-building operations in the seventeenth or eighteenth century and this is therefore the most

GWERNVALE
CHAMBER 3 · Elevations

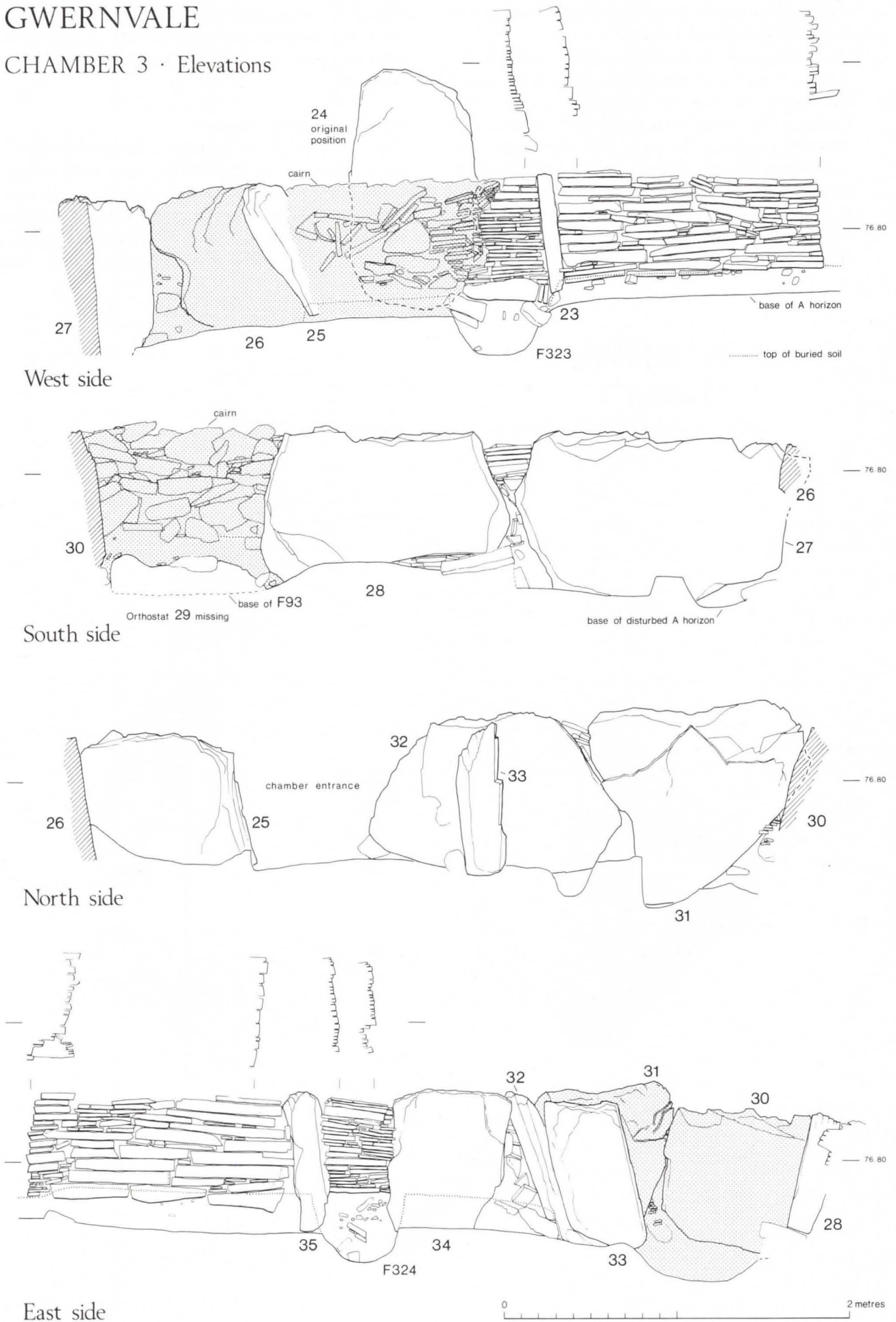


Fig. 24. Stippled portions lie behind the drawn elevation.

likely date at which disturbance to the inner part of the chamber had taken place.

The origin of the soil within the chamber is uncertain. It appeared very similar to the B horizon of the ancient soils in the vicinity of the site. The chamber may have been deliberately refilled with material quarried nearby, or the soil might have come from the upper levels of the cairn, had this originally been capped with such material. Samples of soil retained from each of the excavated spits for flotation were found to contain very few charred remains and only a small number of minute flint

flakes. The charred remains have not been analysed since the material might belong to a considerably later date than the construction or abandonment of the tomb.

Passage blocking of Chamber 3

The gap through the primary cairn wall had later been blocked by a wall standing only three courses high, slightly out of line with the outer revetment wall-face (fig. 26 ii; pl. 24b). There is a suggestion that the blocking wall may itself have been of two phases. On the eastern side of the passage entrance

GWERNVALE

CHAMBER 3

Axonometric projection · view from the North

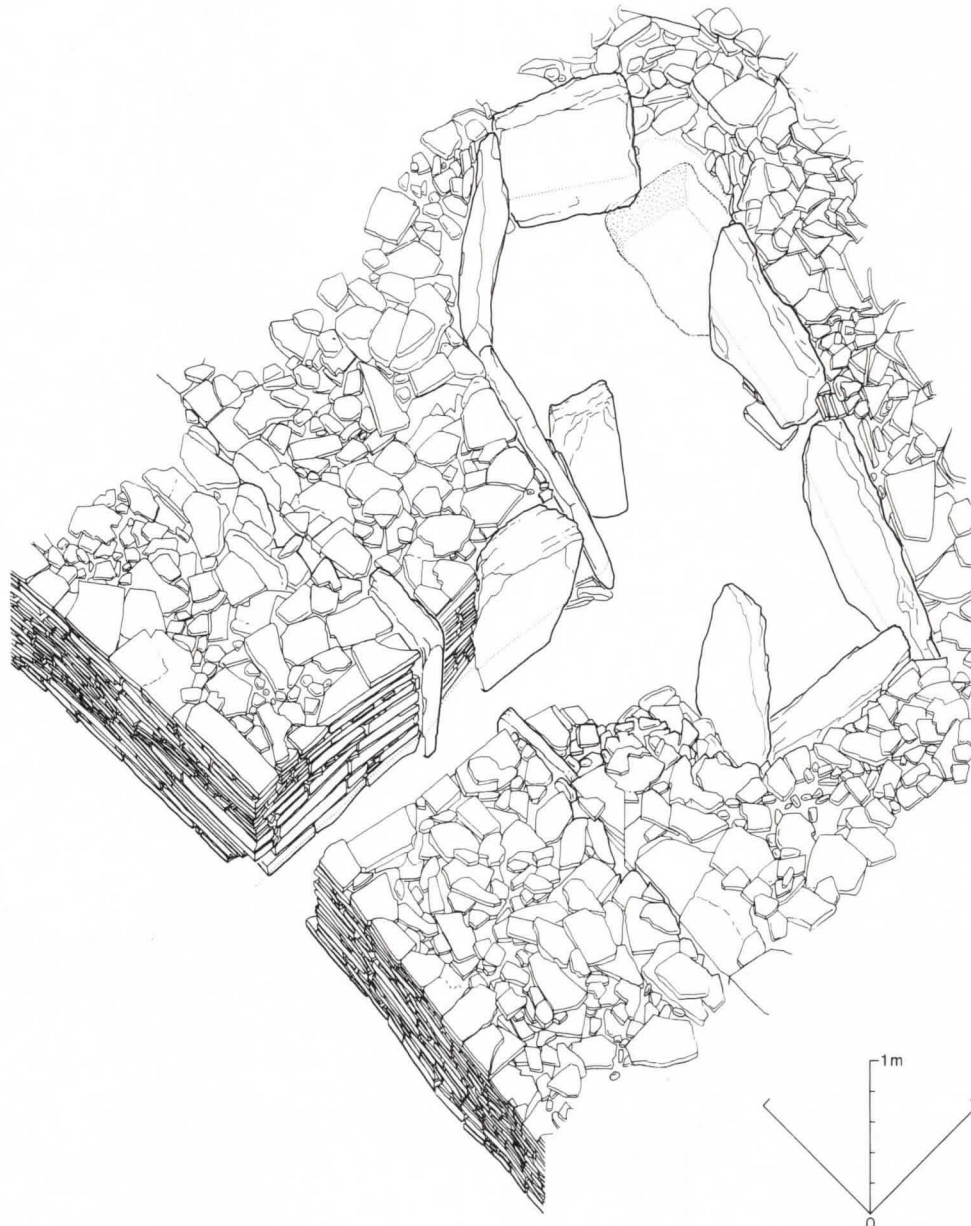


Fig. 25

the basal course of the primary wall had been undercut at the bottom and then refilled with unusually small slabs of stone. These jutted slightly forward of the three courses of stone forming the remainder of the inserted blocking wall, and were apparently of a different build, perhaps being all that remained of an earlier blocking wall which had itself been removed and subsequently replaced (fig. 23 ii; pl. 24a). If so, it will be clear that the same process could have been repeated many times without leaving any further trace of its occurrence in each case. On the observed evidence there would certainly seem to have been at least two entries and possibly at least three before the tomb was finally sealed.

The base of the blocking wall lay upon a stone-free buried soil, continuous with the ancient soil beneath the cairn. At the back of the wall lay an irregular deposit of rubble formed of small slabs of stone similar to that used in the outer cairn wall. This rose to the same height as the blocking wall (c. 0.1 m) and extended into the passage as far as the line of the inner revetment of the cairn (fig. 23 ii, b; pl. 24b). It did not have the appearance of a deliberately constructed floor or pavement, but could be most readily explained as debris from the successive

removal of the outer cairn wall and the passage blocking, though none of the stones actually fitted the broken ends of those in the outer wall.

Above the stone rubble in the lowest part of the passage and at the division between the inner and outer passages was a structure of horizontal slabs which had been carefully stacked one above the other to block the gap between the Orthostats 23 and 35 (fig. 23 iii, c; pls. 23a, 24c). This survived to a height of c. 0.55 m, but may originally have risen to the height of the passage roof. The structure had a broad base, c. 0.8 m measured along the passage, formed of several stones placed next to each other, but it tapered towards the top so that here it was only a single stone's width, c. 0.25 m across. Upon these grounds it seems unlikely that the structure had ever stood much higher. It did not form a wall in the strict sense, but acted as a revetment for the final blocking within the passage, preventing it from spilling into the chamber and inner passage and thus possibly limiting the amount of stone necessary for the blocking. The structure was built exclusively of split slabs of quarried stone, but piled against it and extending as far as the outer revetment of the cairn was a second structure composed of various types of

GWERNVALE · CHAMBER 3

Passage blocking

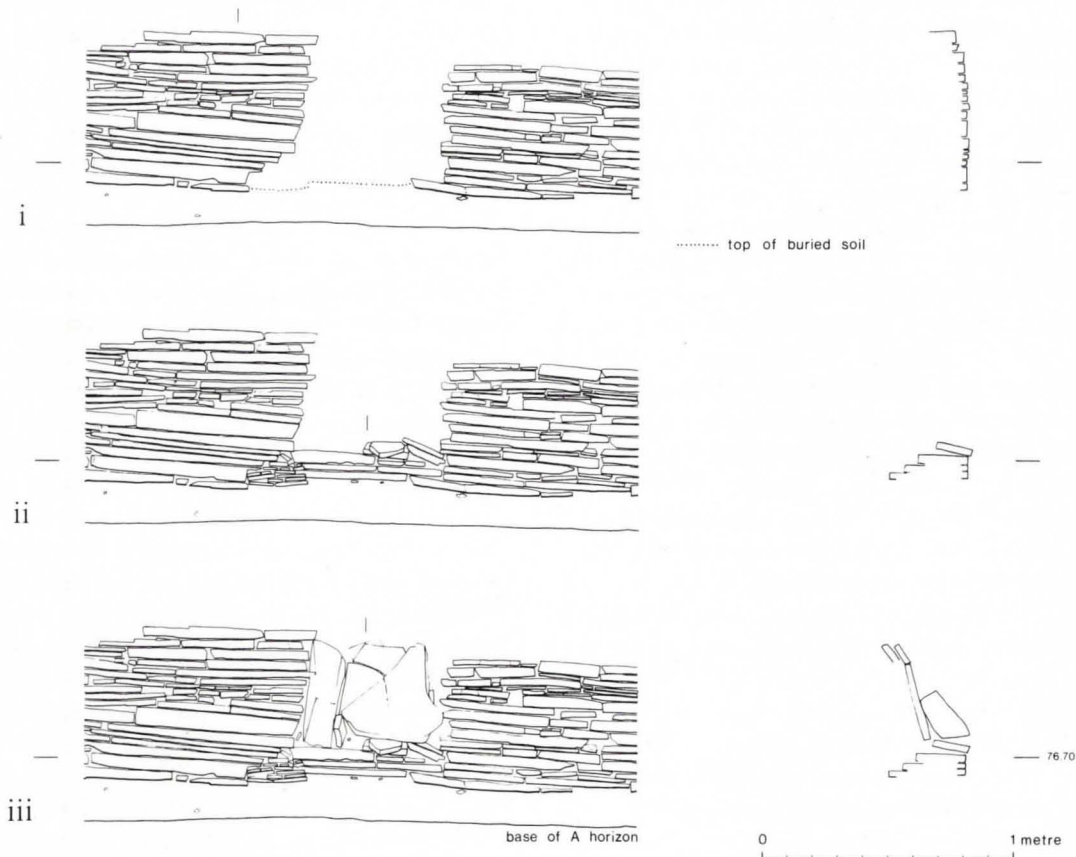


Fig. 26

stone—quarried slabs, weathered sandstone boulders, and pebbles (fig. 23 iv, *d*; fig. 26 iii; pls. 22*b*, 24*a*). Within the inner part of the outer passage there were several layers of stone, the upper ones pitched upward in the direction of the chamber; but towards the outer end only a single tier of stones survived, ending in a large pitched slab on the western side and a long upright slab against the eastern wall, both of which overlay the base of the blocking wall inserted in the outer end of the passage. Neither stone lay flush with the face of the outer cairn wall and they were in turn succeeded by a sequence of external blocking structures which are described below.

External blocking of Chamber 3

Although the deposits outside the cairn were reasonably well preserved (but not of course to their full height) they had been cut away entirely at a distance of *c.* 2 m from the cairn wall by the post-medieval hollow way (fig. 33). The full extent of these deposits to the north of the cairn is therefore unknown. The external blocking here presented a sequence of overlapping deposits. Each was planned in detail in the reverse order of their deposition, but in this report it has been necessary to present a composite plan which does not show the full extent of each deposit (fig. 23 v; additional detail is shown in plates 21 and 22).

After the removal of recent deposits, the area immediately outside Chamber 3 appeared to be predominantly composed of reddish-brown sandy soil (pl. 21*a*). This was cut away to the north by the hollow way and delimited on the east and west by dense stone deposits which ran up to the cairn walls *c.* 3–4 m from each side of the passage entrance (fig. 23 v, *g*, and some of the vertical stones within *e*). At this stage it almost appeared as though the outer cairn wall had been constructed to curve in towards the chamber to form a shallow forecourt, whose outer ends corresponded to the stone deposits against the outer revetment wall upon either side of the soil area. However, it was already clear that the dense stone masses were secondary to the soil because slabs of stone were pitched upwards in the direction of the chamber entrance and were overlying the soil which continued beneath them. Stones within the soil were also pitched up in the same direction. Subsequently the area within the dense stone masses was reduced in height by the removal of a spit of soil about 50 mm thick, and it became clear that this inner area was composed of a sequence of alternate and overlapping soil and stone deposits which focussed upon the chamber entrance (fig. 23 v, *e-k*; pl. 21*b* and *c*). It also emerged that the apparent forecourt was an illusion, caused by the partial collapse of the outer revetment wall, whose upper courses at a distance from the chamber entrance were tipping outwards. A section was then laid out *c.* 7 m to the east of the chamber entrance and the entire external deposit from this point to the western end of the cairn was fully excavated by removing each deposit in turn.

The detailed description, however, will be most intelligible if each deposit is noted in the order in which it was laid down. There is no evidence of any great interval of time having elapsed between the deposition of any of the deposits.

Beneath the entire blocking sequence was a well-defined buried soil, continuous with that beneath the cairn. The outer cairn wall had sunk down slightly into this and part had to be removed to reveal the lowest courses. Relatively few artefacts and little charred organic remains were found within the buried soil, and even fewer were necessarily contemporary with any period of the tomb (p. 50, and below). Several features were found within this area during the removal of the buried soil including two small stone surfaces, one upon either side of the chamber entrance which from their position may have been associated with the chamber, but their function is unknown (F309-10, Table 6, p. 152; fig. 30). The buried soil was similar to that beneath the cairn and apart from a slight greyness at the surface in places there was no discernible turf-line. Thus there is little evidence of any activities outside the entrance to Chamber 3 before its final closure. It is possible that a small amount of stone debris found upon the surface of the buried soil could have accumulated during the use of the cairn, but it was difficult to distinguish this from the base of the overlying stone and soil blocking structures, if indeed a distinction should be made.

The first element of the external blocking placed against the chamber entrance had an overall radius of between 1.6 m and 1.8 m from the chamber entrance (fig. 23 v, *e*; pl. 22*a*; the full extent of the structure is not shown on the drawing because its outward edge lies below deposits numbered *f* and *g*). Lying immediately against the stones within the passage entrance was a mixture of reddish-brown sandy soil and small thin slabs of stone, clearly placed at the same time, for the small slabs were pitched in a variety of directions and could never have stood independently. To either side of the passage entrance large thin slabs had been placed almost upright against the wall-face, and leaning against this was the bulk of the deposit, consisting of slabs and boulders. The basal stones simply lay upon the buried soil and the upper ones were stacked on edge and tilted towards the passage entrance at angles of between 25° and 40° above the horizontal, the more steeply sloping stones being confined to the inner part of the structure. The less steeply pitched stones towards the outside lay about on the same angle as the overall structure (about 25° to the horizontal). There seems little reason to believe that much of this primary structure was missing, for its full basal extent was preserved beneath overlying layers of blocking; moreover, at an early stage of excavation much of the stone of the upper part was concealed by an overlying layer of soil (fig. 23 v, *f*; pl. 21*a*; possibly part of layer *f* above). Only the innermost part of the primary structure (soil mixed with thin slabs of stone)

was visible at first and we may suppose that only here was any of the original material missing. By using the angle at which stones within the structure were pitched it is possible to suggest that it may only have been *c.* 0.2 m higher originally, giving a total height of *c.* 0.8 m against the outer revetment wall.

This primary external blocking was later enveloped in a dump of reddish-brown sandy soil (fig. 23 v, f), approximately 0.2 m to 0.3 m thick and extending to a radius of 1.4 m from the passage entrance (beneath the inner edges of the stone deposits *g* and *k* as shown on figure 23). To the east was an isolated dump of stones, largely consisting of green micaceous sandstone (fig. 23 v, g); its southern side came round to meet the outer wall of the cairn, but its northern end had been cut away by the hollow way of the post-medieval road. It seemed likely that the stones had originally been concentric with the inner deposits, to become mixed with another group of stones on the western side of the entrance (fig. 23 v, k). Layer *g* was fairly insubstantial, appearing as a layer of stone placed over the inner dumps of stone and soil, the stones here being pitched between 15° and 50° above the horizontal. Its maximum radius was *c.* 3 m (its eastern limit underlying layers *h* and *j*). On its eastern side was a further dump of reddish-brown soil (layer *h*, again not clearly represented on the western side of the entrance), which extended up to *c.* 3.2 m from the entrance passage and clearly separated deposit *g* from an overlying mass of stone (layer *j*) which continued along the entire north-eastern side of the cairn (see also fig. 33). The outermost stone deposit to the west of the passage entrance (layer *k*) continued westwards along the outer revetment wall in the manner of layer *j*, and may originally have been joined to it north of the cairn. Stones on the inner edges of layers *j* and *k* were again pitched up towards the chamber entrance, but at some greater distance from the entrance (especially on the eastern side where the deposits were better preserved), it was apparent that the focus had shifted away from the earlier dumps of material outside the chamber entrance and towards the outer revetment wall itself (fig. 32, cairn blocking).

There is every reason to suppose that all these outer deposits were deliberate constructions, and not merely formed by the natural decay of the cairn. Thus we can see that outside Chamber 3 at least (and this might apply equally to other parts of the cairn), there is a sequence which began with structures specifically related to the chamber entrance and culminated in the concealment of the outer walls of the cairn to either side. These outermost structures (termed cairn blocking) are discussed more fully elsewhere (p. 90).

Finds associated with Chamber 3

The only finds from within the chamber and the passage comprised several small flakes of flint sieved from samples of soil taken from the upper filling of the chamber. It seems probable that no finds were left

within the passage at least at the time when the chamber was finally sealed, but as we have seen there is some uncertainty as to whether the chamber itself had contained any finds at this stage. There were no recent finds. Sherds representing three different vessels (nos. 28-30), including fragments of an Ebbsfleet bowl, were found scattered through various layers of the blocking material outside the chamber entrance; there is some uncertainty about their relationship with the chamber, and they are discussed elsewhere (p. 105).

CHAMBER 4

(fig. 27, pl. 25)

A possible fourth lateral chamber, placed towards the western end of the cairn and provided with what seems to be an entrance passage leading to the southern side of the cairn, was identified from juxtapositions of elements which can be found elsewhere only in the chambers. The evidence is poorly preserved, and little can be said about the chamber's original form, size and manner of use.

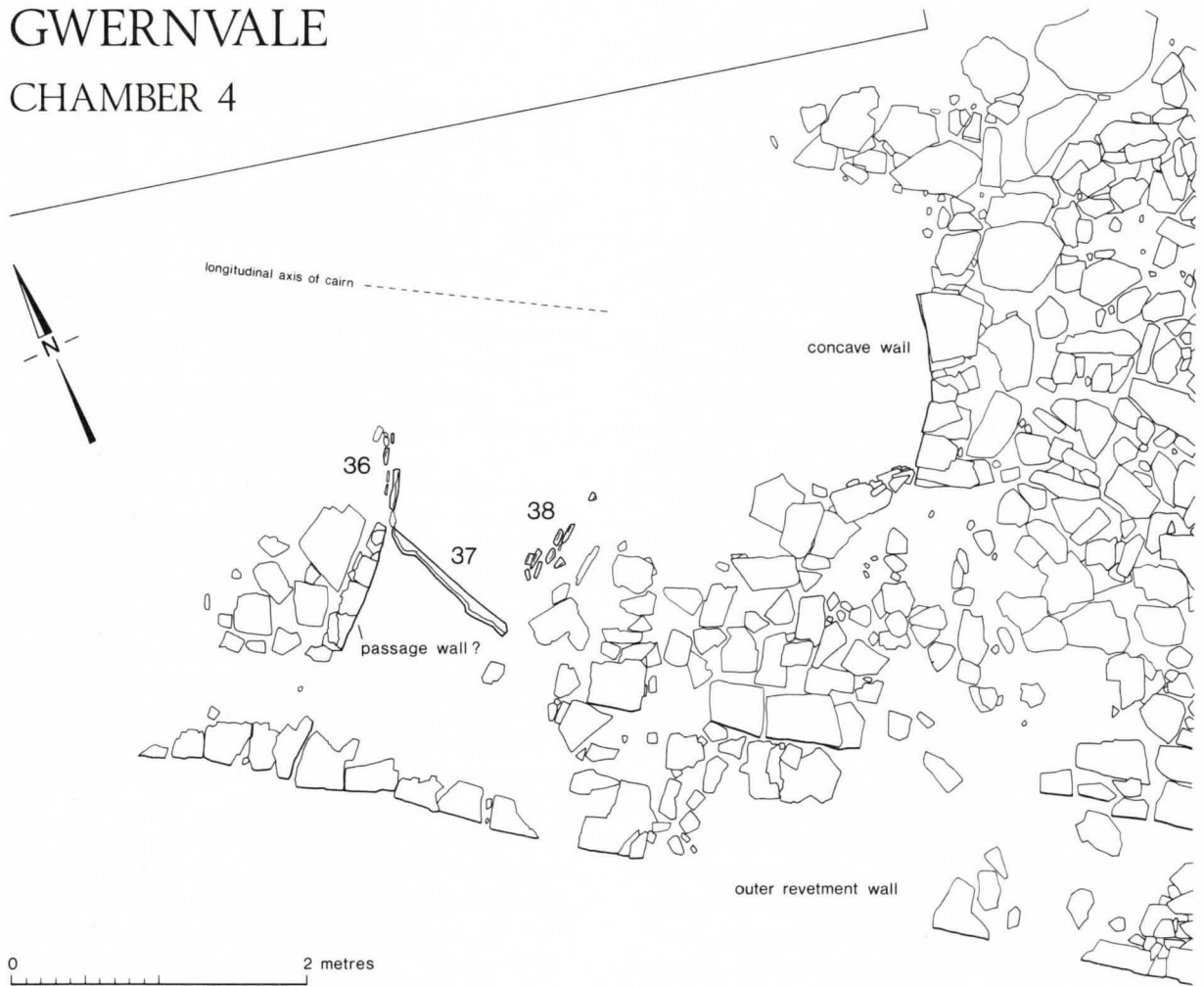
The cairn has been almost entirely robbed away at this point and the western end was totally missing. The outer revetment wall only survived beneath the verge and the edge of the modern road as a single course of very fragmented slabs. The soils at this end of the site had been so heavily compressed by the weight of traffic passing above that it was barely possible to distinguish difference between the A and B horizons of the buried soil. Sherds of pottery had been reduced to vague smears and it was difficult to be certain which of the stone structures were of any antiquity.

The inner cairn wall could be traced with reasonable certainty as a rough line of large weathered boulders a single course high, ending just short of a long, heavily fragmented upright slab (Orthostat 37). The stone was out of line with both the inner and outer cairn walls, and survived to a height of only 0.18 m altogether. Beyond this again and almost joined to its western end was the base of a wall almost 1 m long and practically at right-angles to the line of the outside of the cairn. About five courses of stone survived, to a height of only 80 mm. The wall and a group of flat slabs immediately to the west of it were of green micaceous sandstone, similar to the material which elsewhere formed the outer revetment walls and the walling within the chambers. Just to the north were other upright stones, apparently either the remains of orthostats or packing-stones for such, lying at either end of and almost at right-angles to Orthostat 37 (Orthostats 36 and 38). Orthostat 36 was a thin sandstone slab *c.* 0.3 m long and only 0.19 m high. Orthostat 38 consisted of a nest of loosely connected thin upright sandstone slabs which it appeared might be the shattered remains of an orthostat, which like others at the site had laminated along bedding-planes within the rock. Although un-

certainties shroud each of the elements—a break in the inner revetment wall, the bases of three upright stones, and a stretch of walling—their configuration in relation to the outer revetment wall affords a certain limited interpretation. The upright stones may

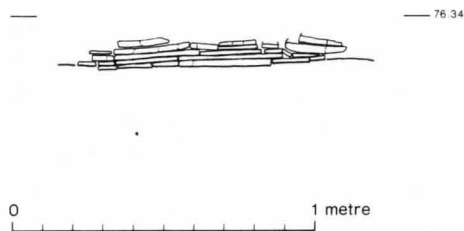
partly define a chamber or cist, confined within the inner part of the cairn in the manner of Chambers 1-3 and approached by a walled passage of which only part of one side has survived. In the other chambers at Gwernvale the walled passage is contained within

GWERNVALE CHAMBER 4



Elevations

Passage wall ?



Concave wall

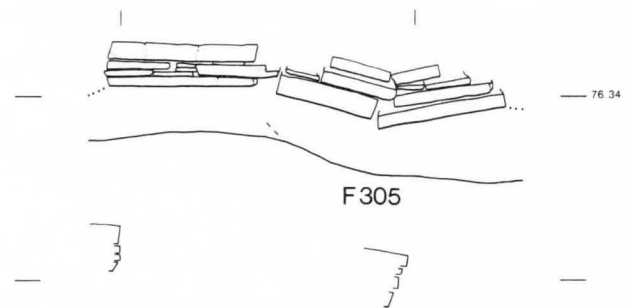


Fig. 27

the depth of the outer revetment wall and meets the first orthostatic elements of the inner passage upon the line of the inner wall on the western side. The surviving dimensions of the upright stones suggest that they were not of any great height, even assuming they were all orthostats rather than packing-stones. Orthostat 37 may have been a sill, like that in the passage of Chamber 1 (fig. 18), although it is somewhat longer. Alternatively, the chamber may have formed a completely enclosed cist. However, there was a discontinuity in the line of the disturbed outer revetment wall, and a joint between stones on the projected line of the putative passage suggested that there might once have been a gap through the outer wall at this point.

The shape of the conjectured chamber is unknown, but it was perhaps much smaller than the others at Gwernvale. Since there is no direct evidence to the contrary we may perhaps most reasonably assume that the chamber was contemporary with the primary construction of the cairn. It appears that the other chambers were laid out to one side or other of the long axis of the cairn; if this applied to Chamber 4, it would not have exceeded *c.* 3.5 m in total length from the outside of the cairn, barely the length of the inner and outer passage of Chamber 3. It is not known whether the chamber was ever used; although no skeletal material was found, in the circumstances this absence is meaningless. Relatively few artefacts were found within the vicinity of the chamber, and it is impossible to prove whether any of them are contemporary with the cairn.

The concave wall

For ease of reference, an adjacent concave stretch of walling is described here. There is little apparent association between this and Chamber 4, but little other interpretation can be offered.

Whatever the original design at the western end of the cairn, there is reason to believe that it accommodated a fourth lateral chamber whose elements have been described above. We have seen that the inner revetment wall was brought up to meet its eastern side, and (as in the case of the other chambers) this stopped short on one side of the passage. Upon clearance of the overlying road it was found that to the north and north-east of the presumed chamber the place of the inner body of the cairn (normally constructed of weathered sandstone boulders) had been taken by a mass of pitched green micaceous sandstone slabs (fig. 33; pl. 25*b*), similar to those which formed the outer cairn revetment and the chamber walling. At a point where stones characteristic of the body of the cairn stopped was a stretch of concave walling, *c.* 1.3 m long, transverse to the axis of the cairn and more or less central to it, and itself constructed of slabs of green micaceous sandstone.

The wall stood to the same height as the surviving cairn at this point, *c.* 0.15 m, and had apparently sunk down slightly at its southern end into an earlier feature (F305, Table 4). The wall and the cairn behind it were left in position at the end of the excavation, so that it is difficult to be certain whether the two were contemporary, though they certainly appeared to be so. Immediately to the west of the wall was the mass of green stones referred to above, some of which were pitched against the wall-face (fig. 33). To the north and south of the concave wall the stones more characteristic of the inner cairn trailed off towards the west; on the south they were contained within a zone behind the vestigial inner revetment wall, and on the north behind the assumed line of the inner wall. This created the impression of an 'open space' within the body of the cairn partially filled with finer stones and defined on its eastern end by the concave wall.

The stone within this space was excavated in advance of the elements belonging to Chamber 4, in the belief that it was secondary to the cairn. The A horizon of the buried soil could not be clearly defined here (as elsewhere at the western end of the site) and many of the slabs lay partly within a maze of irregular intercutting pits, hollows, and gullies (fig. 30) which themselves contained very few artefacts. It was thought that these features, together with the pitched stones, were the result of later cairn robbing and that the only parts of the original structure which had survived were those belonging to Chamber 4, the concave wall, and the adjacent parts of the inner cairn (as shown on fig. 31); since there was no necessary relationship between these features it is possible that the concave wall was all that had survived of an additional internal structure. Whilst this interpretation cannot be entirely discounted, and there was certainly no artefactual or other evidence in support of it, similar irregular features in the subsoil were found to run beneath what was clearly undisturbed cairn material. Alternatively, it seemed possible that the pitched stones were part of some original blocking placed against the wall, stones of which had sunk down into or partly filled pre-existing features. This interpretation would satisfactorily explain the presence of stone types uncharacteristic of the body of the cairn. A major drawback to any interpretation is that it was unclear whether the concave wall had even been more extensive or had been attached to any other structural elements. Linked to its southern end were several courses of green stone running off to the west, but these did not form a distinct wall-face. Whilst it is possible that the concave wall might have formed part of a fairly lengthy axial chamber, together with the orthostats identified as Chamber 4, it may equally have been completely isolated within the cairn. It seemed unlikely to have ever formed part of the eastern end of the cairn.

CONTEMPORARY ACTIVITIES NEAR THE CAIRN

(fig. 28)

As we have seen above, there is good reason to suppose that Chambers 1-3 at least were entered upon various occasions during the life of the cairn, resulting in alterations to the primary structure of the passage entrances. Too little human bone has survived (assuming that it was once present in greater quantity) for a detailed analysis of the precise function of the different chambers. Equally, the amount of animal bone surviving is too slight to know what part livestock may have played in contemporary activities.

Only a relatively small number of pottery sherds has been found even indirectly associated with the chambers (vessels 18-24, p. 102). Some of these were found in disturbed contexts and consequently there is some doubt about their dating in all cases, and there is inadequate information about their function. Sherds of vessels 19, 21, and 23 were found in Chamber 2, but within soils which had accumulated since the partial collapse and robbing of the structure. It is possible, however, that they represent vessels placed within the chamber. Sherds of vessels 20 and 24 were found on the surface of the buried soil within the outer passage of the chamber, and also beyond the southern side of the cairn, and the vessels were probably therefore contemporary with the use of the chamber. There is less certainty about the dating of vessel 18, sherds of which were found widely scattered outside the entrance to Chamber 1. The vessel might belong to any period before the closure of the tomb.

These vessels are distinguished from a further series (nos. 25-31), of which sherds were found exclusively outside the chambers and either beneath or within chamber and cairn blocking material. Some of these vessels, and features in which they were found, might immediately pre-date the final closure of the tomb. Outside the entrance to Chamber 2 was a complex of irregular shallow scoops (F67, F325-26, Table 6; fig. 30) which underlay the western side of the external blocking structure. It is uncertain whether they were dug upon different occasions, or were part of the same irregular feature. Fragments of the same Peterborough bowl (no. 26) were found upon the surface of the buried soil beneath the blocking and within F325, the fragment from the pit joining sherds from two other pits, F47 and F58, which lay a little further to the west (Table 6). Fragments of a second, grass-wiped, bowl (no. 25) were also found scattered on the buried soil beneath the blocking structure, within the underlying scoops F67 and F326 and in pit F47 to the west. A single sherd from a third vessel of indeterminate form (no. 27) was found within pit F58, again to the west. The fragments of vessels 25 and 26 are sufficiently large in some cases to suggest that they were broken when the features beneath the external blocking structure and those further west were open, or soon before.

Radiocarbon dates of *c.* 2440 bc and 2640 bc (Appendix II) from charcoal found within pits F58 and F47 respectively, provide some independent dating for this activity. The presence of the charcoal was unexplained, and it was uncertain whether the charcoal had burnt *in situ*, but the occurrence of significant concentrations strongly suggests a close association with the pits themselves. At the highest level, charcoal within pit F47 coalesced with that within F58, suggesting that the two were part of the same amorphous feature. In each case charcoal samples from various levels within each pit were amalgamated, and submitted for dating, upon the assumption that the activities represented had taken place at the same time. The two dates are statistically distinguishable, however (p. 152), and the pits could therefore have been dug at different times, depending on whether the size of the burnt pieces of wood were comparable (a factor which was not determined).

Both groups of pits outside the entrance to Chamber 2 were filled with reddish-brown sandy soil and in some instances there were fragments of green sandstone (similar to the stone forming the outer revetment walls). The bases of the large slabs forming the blocking structure which overlay pits F67, and F325-26, were found at a slightly lower level, but it could not be determined whether this had been caused by sinkage or whether the features had been left open or partly open. Pit F325 had been dug close to the outer revetment wall of the cairn, and even slightly undercut the wall in one place, clearly confirming the contemporaneity of the features and the cairn. The purpose of the group of features is unknown; they may have provided small quantities of soil or have been dug in order to procure natural stones (*eg* the weathered sandstone boulders underlying the disturbed wall blocking the entrance to Chamber 2 (fig. 20 iii *b*; p. 60). The associated pottery, although clearly related to the chamber, was only found outside it and would suggest that these various activities had taken place while the chamber itself was closed. Because the features may otherwise have formed an obstacle outside the chamber entrance, and because the sherds from the buried soil appeared un-abraded it is suggested that these activities were associated with the final closure of the chamber, or took place soon before.

Other similar events may be represented outside Chambers 1 and 4. A small pit (F277) which partly underlay the outer revetment wall at the western end of the site (possibly undercutting the outer revetment wall in a similar manner to F325 outside Chamber 2) contained a sherd ascribed to vessel no. 31, other sherds of which were found in blocking material near the assumed entrance to Chamber 4. A group of irregular pits and hollows outside the entrance to Chamber 1 (nos. F46 and F60) underlay what is now assumed to be deliberate blocking material, and may also have pre-dated the closure of the cairn. This group of features was overlain and partly filled by a mass of irregularly pitched green sandstone slabs

and was at first thought to have been caused by stone-robbing. The total absence of recent finds and the subsequent discovery of securely stratified features of a similar form outside Chamber 3 have suggested that they too might be contemporary with the cairn. One end of F46 was noted cutting through the A horizon of the buried soil in the area of the outer revetment wall, and had originally been interpreted as being the partial cause of the removal of the basal course of the wall at this point. In retrospect it can be seen that like pit F325, this feature may have partly undercut the wall: the feature in this instance may have been over-excavated, confusion being made between similarly-coloured sandy soils, excavated in dry weather. The contemporaneity of at least some of this group of features and the cairn is also suggested by one trench (F60), running from the south-west to north-east, which terminated abruptly at one end immediately next to the blocking wall inserted across the passage entrance. For similar reasons, this complex of features may have been open, or left open, immediately before the closure of the chamber and cairn. The features included some pre-cairn finds, including sherds ascribed to vessels 13 and possibly 11. A single sherd of vessel 18 was also found in F46; this pot is not closely dated, but might be contemporary with the cairn.

About 4 metres to the east of the entrance to Chamber 1 was a large shallow pit (F54), which contained many split sandstone slabs (similar to those forming the outer revetment) mixed with reddish-brown sandy soil. It had been dug up against the outer revetment wall, the basal courses of which had slumped into the side of the pit. It seems probable that the pit was open immediately before the final

closure of the tomb, being partly filled with stone which was apparently continuous with cairn blocking material, here pitched up along the wall towards the eastern end of the pit.

There were no similar pits on the northern side of the cairn outside Chamber 3, but two small areas surfaced with chips of green sandstone were found (F309-10) which lay on the surface of the buried soil below the blocking and might therefore be contemporary with the cairn. Some other features in this area including a group of possible postholes (F313-16) are less closely dated (see Table 7). Very few finds were found on the surface of the buried soil here and none could, with any certainty, be said to be contemporary with the cairn. Sherds from three different vessels (nos. 28-30) were found scattered within the various elements of the blocking structure erected outside the chamber, including some belonging to an Ebbsfleet bowl (no. 28). The sherds of each vessel were generally small and could have been residual; their precise association with the chamber is therefore uncertain. They may have been derived from a deposit which had built up during the life of the cairn.

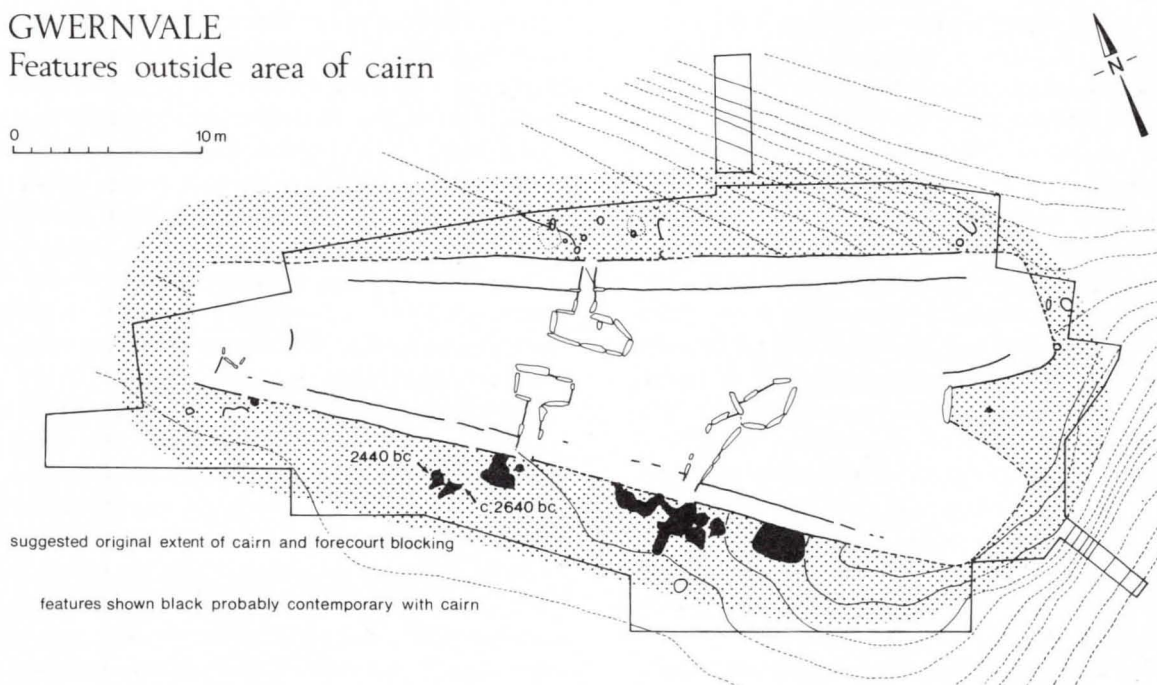
Some activity had taken place within the forecourt, resulting in disturbances to and deepening of the pre-existing soil profile (p. 57). Only a single small feature appears to have been dug after the construction of the cairn (F271, Table 6). It was sealed below the forecourt blocking and contained several small fragments of green sandstone. The remaining pits in this area were postholes belonging to the pre-cairn six-poster (Table 2), or were later than the cairn.

In conclusion it may be seen that if many of the

GWERNVALE

Features outside area of cairn

0 10m



suggested original extent of cairn and forecourt blocking

features shown black probably contemporary with cairn

Fig. 28

contemporary finds and features *do* belong to the period immediately preceding the closure of the cairn, during most of the cairn's life, a period of possibly as much as 600 years, discernible activities were limited to the entries and subsequent closure of its various chambers. There is a marked difference in the number and range of artefacts attributable to the pre-cairn Neolithic period and the period of the cairn itself, which implies marked differences in the function of the immediate area and the relative proximity to intensive human activity. It is also of interest to note the marked disparity in the number of vessels associated with the individual chambers. These differences are not fully explained by the degree of later disturbance (for instance the sealed areas immediately outside Chambers 2 and 3 are directly comparable in this respect), and might suggest differences in function, ownership, or possibly the range of time over which the chambers were employed. There is no direct explanation of the pits and trenches found outside Chambers 1 and 2, but it is possible that since they were apparently in some cases still left open when the chambers and adjacent parts of the cairn were finally sealed, they were more or less contemporary with this late activity, and used as sources of soil or stone to aid the blocking processes.

Unphased features outside the area of the cairn

Certain features which lay outside the area of the cairn and which were sealed beneath cairn blocking material must pre-date the closure of the cairn, but might be either earlier than the cairn or have been contemporary with it. Other features which are considered here lay beyond the extent of the cairn blocking, or were sited in places where this had no longer survived; their dating is therefore less precise, but none of those shown in Table 7 had the appearance of modern intrusions. Some features contained diagnostic Mesolithic flint artefacts, but in view of the residual nature of many of the finds at the site they cannot be reliably used to date the features themselves.

A small group of features which lay just below the modern road at the eastern end of the site may have been contemporary with the Neolithic timber features beneath the northern horn of the cairn (p. 51). Two pits (F221 and F228) had the dimensions of postholes and lay in line with various elements of the supposed timber structure, but were entirely without any packing stones or other indications that they had held posts. An elongated hollow (F223) contained some tightly packed stones and charcoally soil, especially at its deeper northern end, and was similar in appearance to several other adjacent features (p. 52). Neither of the two pits, F234 and F260, which lay to the north of the cairn in this area, was securely sealed, although F234 was overlain by a small group of pitched stones which may have formed part of the cairn blocking.

Outside the entrance to Chamber 3 was a further group of features which in this instance were all sealed beneath cairn blocking but which are not otherwise closely dated. It included four steep-sided pits (F313-16) between 0.17 and 0.4 m in diameter and 0.2 to 0.25 m deep, which might have been postholes. Several of them contained small slabs of weathered sandstone but there were no definite indications that the pits had ever held posts. Two shallow hollows, F312 and F318, lay partly beneath stone surfaces on the surface of the buried soil which are assumed to be contemporary with the cairn (F306-07, Table 6). Three other features in this area were equally undated (F320-22).

A group of irregular, charcoal-filled 'pipes' beyond the western end of the cairn (F291-94) are thought to be burnt tree roots, resulting from vegetation clearance. These features and several pits (F290, F306-07) were found beneath the modern road, the verge and roadside wall, and cannot be closely dated. A single undated pit, F73, lay to the south of the cairn beyond the limits of the certain cairn blocking.

CAIRN BLOCKING

(figs. 29, 33; pls. 12, 14a)

During the life of the cairn the entrances to Chambers 1-3 had normally been 'concealed' by the reinstatement of the outer revetment wall. Finally Chambers 2 and 3 at least were closed by piles of earth and stone heaped up outside the entrances. The excavation of the better-preserved deposits outside Chamber 3 suggests this was done soon after the chamber had been entered for the last time, and may have been quickly followed by the concealment of the outer revetment wall on the entire northern side of the cairn. This is possibly matched at Chamber 2, but it is not known whether the events took place at the same time. Greater uncertainties exist in the case of Chambers 1 and 4, but there is perhaps sufficient evidence to suggest that the events represent a final remodelling of the entire cairn. Only relatively limited areas were fully excavated outside the cairn, and the relevant deposits within some of these had either been totally robbed away or were very insubstantial. In these instances the evidence will not 'speak for itself', for without reference to better-preserved portions of the site the surviving evidence is almost meaningless.

A small amount of blocking survived in part of the forecourt (p. 64), but both the northern and southern horns of the cairn had been heavily robbed and it is not known whether (as one might suppose) this was originally continuous with the blocking which survived on the sides of the cairn. On the north, from about the point where the revetment walls of the cairn had survived at the eastern end of the site, there were external masses of stone which had been truncated on the north by the post-medieval hollow way. The hollow way had also removed the deposit from a point

about 8 m to the west of Chamber 3. The western end of the cairn was missing entirely. A mass of pitched stone against a concave wall at one end of an 'open space' within the body of the cairn is shown on figure 33, but it is uncertain whether this is part of the original structure (p. 87). The surviving forecourt blocking was fully excavated, but only a proportion of that on the northern side of the cairn was examined—a small area at the eastern end where the deposits were really too slight to be very meaningful, and a more substantial area from *c.* 4 m to the east of the entrance to Chamber 3 to the western end of the site. Within the remaining area the deposits were relatively well preserved, but were only examined superficially. The surface of the external stone masses was carefully cleaned of soil and recorded without the removal of any stone.

On the southern side of the cairn, an area adjacent to the outer revetment wall, from *c.* 3 m west of the entrance to Chamber 2 to the western end of the site, was recorded in a similar way without further excavation. At the western end of the cairn on this side the junction between the outer deposit and the revetment wall had been removed by the recent construction trench of the roadside wall. The area to the south of this incompletely excavated portion of the site (see fig. 30) was fully excavated in 1977 in advance of the construction of the new road. Some stone undoubtedly continued beyond the limit of excavation at this point, but the main density had given way to a mere scatter of stone, and it seems unlikely that much evidence of this kind was lost in the area to the south and south-west that was bulldozed during the construction of the new road. Further east the deposits were not well preserved, with the exception of the area immediately outside Chamber 2; through circumstance this had to be excavated in two stages, in 1977 and 1978. The area outside the cairn between the entrances to Chambers 2 and 1 was fairly heavily damaged (like the cairn itself), but there was a marked concentration of stone outside the entrance to Chamber 1, and some deposits survived outside the cairn between the entrance to Chamber 1 and the missing southern horn of the cairn, where once again any external deposits had been entirely removed.

The distribution of the external masses of stone recorded during excavation need not accurately reflect their former extent because like the cairn itself they have probably been greatly affected by stone-robbing. The shape of the robbed cairn is recognisable by virtue of its regular plan and revetment walls; the external masses of stone may also originally have formed a coherent pattern, though less well defined because of the nature of the material. Several broad conclusions may be drawn from its generalized distribution (fig. 33); firstly the outer mass of stone may originally have encircled the entire cairn and secondly it appears to have been confined to a zone which extended up to 5 m from the outer walls of the cairn (see the suggested original extent on fig. 28).

Blocking on the northern side of the cairn

The excavation of part of the stone deposits to the north of the cairn adjacent to Chamber 3 strongly suggests a sequence leading directly from the final blocking of the chamber passage and the erection of an external blocking structure directly outside it, to the eventual concealment or masking of adjacent stretches of the outer revetment wall of the cairn. To the east of the chamber the outermost layer of the structure blocking the passage entrance (fig. 23 v, *h*) was partially overlain by the edge of the cairn blocking which lay along the remainder of the northern side of the cairn (fig. 23 v, *j*; pl. 21*c*). Towards the chamber there was a general trend within the cairn blocking of stones pitched up in the direction of the entrance, whereas further to the east (from a point *c.* 4 m from the entrance) stones gradually turned and became pitched instead towards the outer revetment wall, and in places merged almost imperceptibly into the outer revetment wall where this was markedly overhanging. This general pattern continued along the northern side of the cairn to a point where all the deposits had been truncated, just short of the northern horn. However, other small stone structures were visible within the unexcavated parts of the cairn blocking. From a point *c.* 7-8 m from the chamber and 2 m from the side of the cairn were several nests of stone slabs pitched away from the cairn but resting against others which were pitched in its direction (shown diagrammatically on fig. 32).

After initial clearing of this area it appeared that the cairn blocking immediately to the east of Chamber 3 could be divided into several different layers, distinguishable by variations in the stone types. This was confirmed by excavation when a sequence of three stone layers was found, intermixed with reddish-brown soil, each beginning approximately the same distance from the chamber (fig. 29, *j1-j3*; pl. 23*c*). The upper two layers had been truncated, but the lowest survived to its full extent at this point.

The lowest layer (*j1*) was wedge-shaped in section and composed of green sandstone slabs together with weathered brown sandstone pebbles and small boulders. The layer was up to 0.3 m high against the outer revetment wall and tapered away to nothing about 1.4 m from the wall. The stones nearest the wall were here either pitched towards the revetment wall or pitched in the direction of the entrance to Chamber 3, whereas those further out lay mostly flat on the ground. It seemed unlikely that the stones forming this layer had been derived from the outer revetment wall of the cairn, for the green sandstone slabs were generally thicker and larger than those remaining in the wall, and brown sandstone pebbles were rarely present in that part of the cairn's structure.

By contrast, the layer above this (fig. 29, *j2*) was composed almost exclusively of thinnish slabs of green sandstone, which formed a band about 0.3 m

GWERNVALE · CAIRN BLOCKING

Section to the East of Chamber 3 entrance

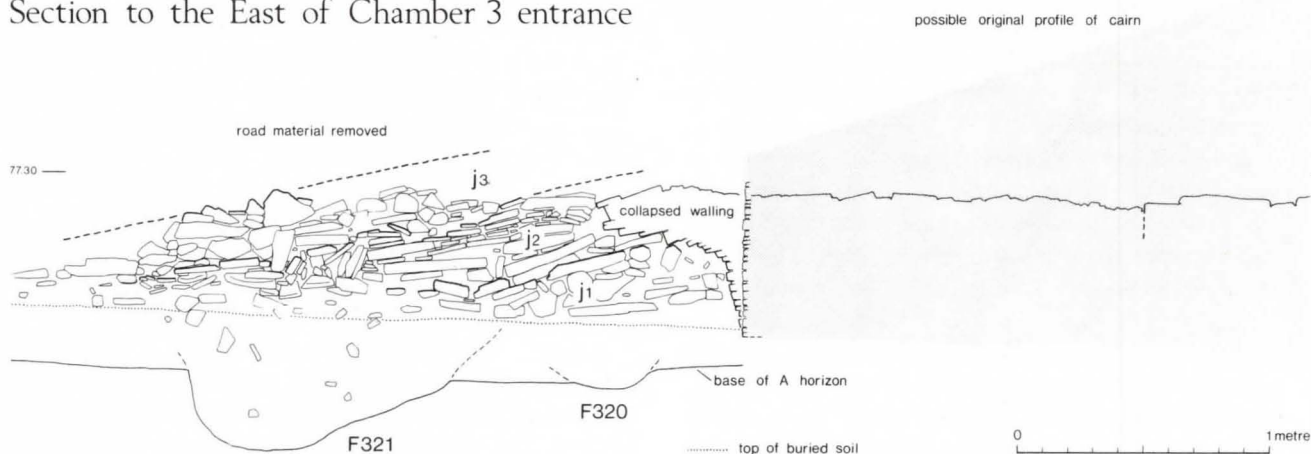


Fig. 29

thick which extended up to 2.5 m from the outer revetment wall. The stones of this deposit were interleaved with those belonging to the outer revetment at a point *c.* 3.5 m away from the passage entrance where the wall was markedly overhanging, and the layer certainly had every appearance of having been formed by the collapse of the outer wall. As in the case of the underlying layer, the stones towards the chamber were pitched in the direction of the passage entrance, whereas further away they were generally pitched towards the revetment wall itself. The uppermost layer, surviving to a thickness of *c.* 0.25 m, was composed predominantly of boulders and pebbles of weathered sandstone. Many of the stones being rounded, few could be said to be pitched in any particular direction. The stones were similar in appearance to those forming the core of the cairn, but there are reasons for thinking that they may not have been derived from that source (p. 150).

In summary, the excavation of the cairn blocking adjacent to Chamber 3 showed that the external blocking structure immediately outside the passage entrance was overlain and extended by a sequence of three layers, the lowest of which was composed of material which may have been brought in specially, a middle layer possibly formed by the collapse of the outer revetment wall, and an uppermost layer of stones of uncertain origin.

Blocking on the southern side of the cairn

The most informative area of the cairn blocking excavated on the southern side of the cairn was that immediately outside the entrance to Chamber 2, because like the area outside Chamber 3 on the northern side of the cairn there was a sequence of deposits which began while the chamber was being used. We have seen that the chamber was probably entered on several occasions before being finally sealed by an external blocking structure composed of

large sandstone slabs (fig. 20 iv, p. 77). Deposits overlying the north-east side of this blocking structure were poorly preserved as a result of stone-robbing, but on the south and west sides it was apparent that the structure was overlain by a layer composed of green sandstone slabs and clean reddish-brown soil. There was little discernible structure within the stonework next to the chamber blocking but further towards the north-west, where the density of stone increased, some stones were stacked above each other and were pitched up in the direction of the cairn.

Outside Chamber 1 the stonework was again composed almost exclusively of green sandstone slabs and although little structure was noted within the deposit there was a general tendency for stones to be pitched up towards the cairn. Much of the stone directly outside the entrance to Chamber 1 lay above and within a series of trenches and hollows (fig. 30, F60) which at the time of excavation were thought to have been caused by later robbing. However, in the absence of later finds from these features and in view of the presence of similar pits and trenches outside Chamber 2 which were probably dug at some time during the life of the cairn (fig. 30, F67, F325-26), they might also have been contemporaneous with the cairn. The concentrations of sandstone slabs above them might, therefore, have been the residue of an external blocking structure similar to those outside Chambers 2 and 3. Further to the east a large shallow pit had been dug against the outer revetment wall (F54, Table 6; fig. 30), causing the basal courses to slump forward. This pit too was filled with green sandstone slabs, many of which were pitched up towards the east. It seems likely that the pit was open immediately before the closure of the cairn, and was subsequently overlain by cairn blocking material. In this sense the pit is similar to the extraordinary 'buttress pit' at Penywyrlod, Talgarth (p. 24), although the interpretation placed upon it is quite

GWERNVALE

OVERALL FEATURE PLAN · ALL PERIODS



Fig. 30

GWERNVALE LONG CAIRN
 CRICKHOWELL · POWYS



Fig. 31

GWERNVALE

STRUCTURAL DETAILS OF CAIRN AND BLOCKING



- M natural monolith
- ⊖ stone-hole
- upright stones
- stones pitched upwards (in direction of arrows)
- - - structural divisions within cairn and blocking
- surviving stone shown white

Fig. 32

GWERNVALE CHAMBER AND CAIRN BLOCKING

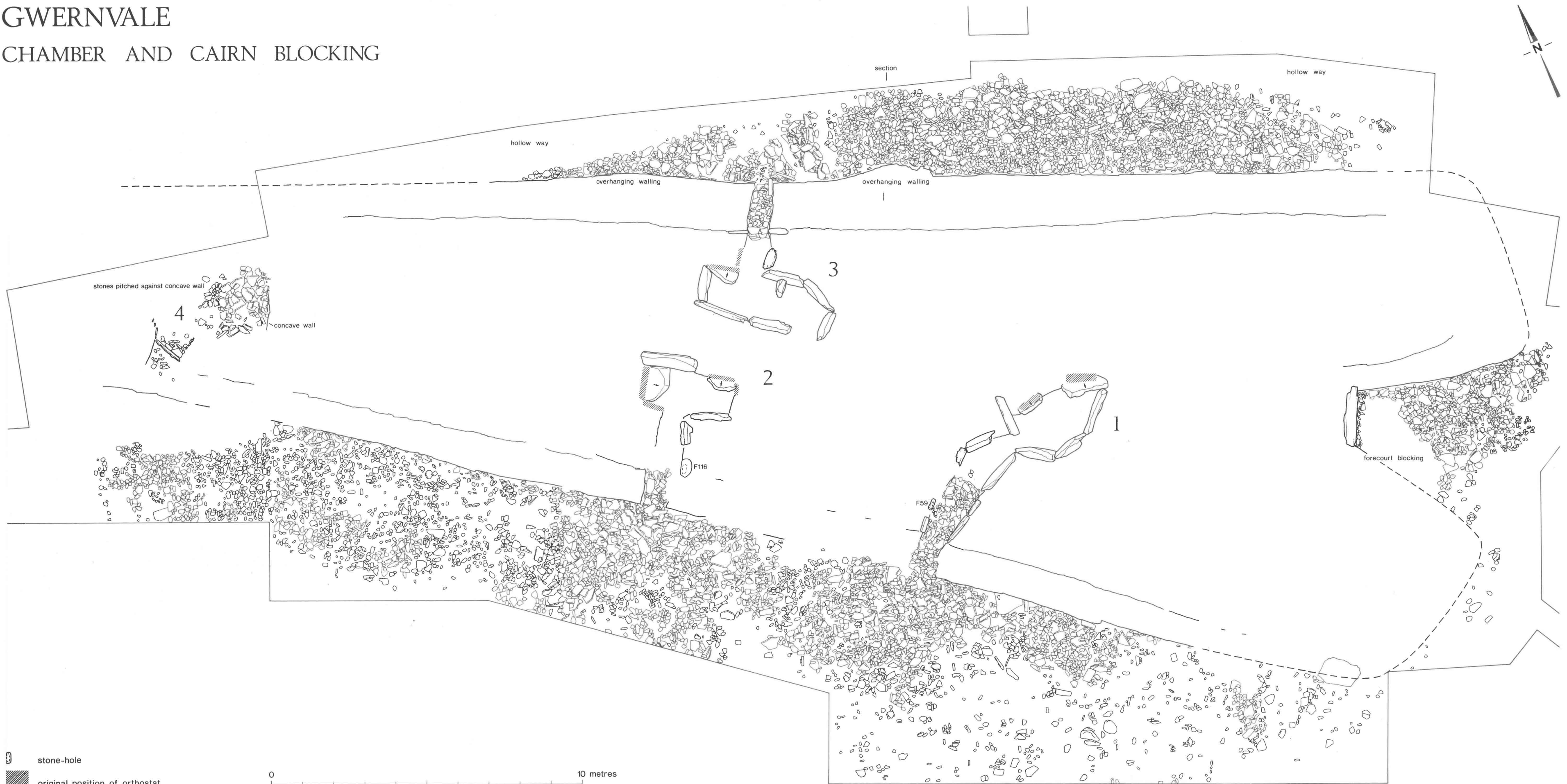


Fig. 33

different. It seems possible that this pit, and possibly some of the others which belong to a similar stratigraphic horizon, acted as a quarry for material used in chamber and passage blocking.

Finds associated with the cairn blocking

Apart from the pottery vessels associated with the external blocking structures outside Chambers 2 and 3, noted above, the only find of any note found within the cairn blocking was a single ogival leaf arrowhead (no. 206), found at the western end of the cairn. This was found in a position above the buried ground surface in material which would originally have lain immediately against the face of the outer revetment wall; the wall itself had been robbed away at this point, thus revealing the inner face of the blocking which contained the arrowhead (see pl. 14a). It is one of only three fragments of this form found during the excavation, and although it may have been associated with the closing ceremonies at the tomb, there is also the possibility that it may have been residual within this context.

SUBSEQUENT HISTORY OF THE SITE

(figs. 34, 35)

Later finds

Later prehistoric finds from the site include a possible oblique transverse arrowhead (fig. 55, no. 221), two barbed-and-tanged arrowheads of Beaker/Early Bronze Age date (nos. 222-23), and a

decorated glass bead of Iron Age type (fig. 61). All three of the arrowheads were found within recent ploughsoil, and the bead was found within the base of a robbing hollow to the east of Chamber 1. Although the presence of the finds may indicate some activity at the site during the later prehistoric period, there is no other evidence to suggest what this may have been.

A small number of sherds of medieval pottery was found in the ploughsoil and in cairn robbing hollows, which Mr Jeremy Knight has dated to the thirteenth and fourteenth centuries; these, together with several late medieval to sixteenth century sherds are all fairly small and may have been from general surface scatters rather than necessarily associated with cairn robbing. The large quantities of post-medieval finds from the site appear to have been deposited as litter, and have not been studied in any detail.

Roadbuilding and landscaping

The present poor condition of the site is undoubtedly a consequence of its proximity to one of the main highways leading into Wales. Parts of the cairn have been eaten away during the course of various improvements to the road from at least the middle of the eighteenth century, but wall-building, landscaping, and agricultural clearance have also played a part. Much of the cairn had probably been already robbed away by the end of the eighteenth century—the earliest accounts of the site at that date suggesting that only part of Chamber 1 was clearly visible above ground (p. 45). It seems that after the investigation undertaken by Colt Hoare at the beginning of the

GWERNVALE

Later features

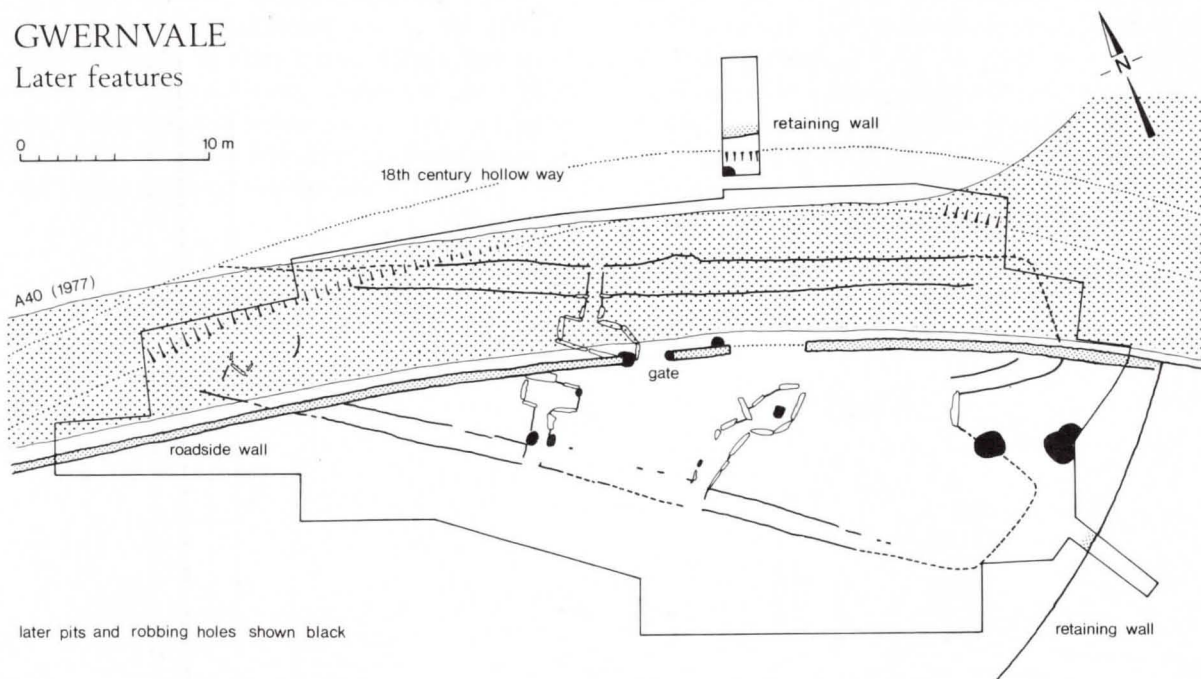


Fig. 34

GWERNVALE

Post-medieval and modern road-building

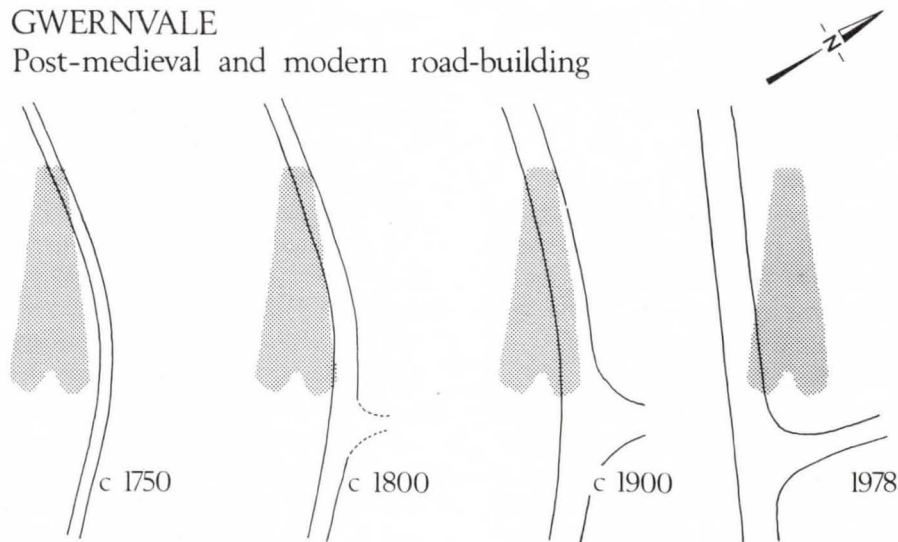


Fig. 35

nineteenth century, the small allotment enclosing the extant chamber may have formed a landscaped feature within the estate of Mr Tristram Everest (p. 47). The revetment wall enclosing the southern side of the site appears to have been built at about this time, and the area of ground inside it levelled out.

No less than six road surfaces were identified during excavation. The earlier ones took a sharp bend around the northern side of the cairn, presumably following a course that had once been dictated by the upstanding cairn. Successive roads had gradually encroached more and more upon the cairn to flatten out the bend, the process culminating in the most recent improvement.

It had been supposed that the recent highway had followed the course of a Roman road (Margary 1967, 332-34) but no trace of this was discovered. It is possible, however, that earlier roads were worn away during the gradual formation of a hollow way, about 1.8 m wide, which had cut down to a depth of c. 0.6 m below the Neolithic land surface at both ends of the site. At the base of the hollow way lay one

cobbled surface and slightly above it a second. A third surface had been made after the refilling of the hollow, apparently with stone quarried from the cairn. These various surfaces probably represent improvements that were made to the turnpike from at least the end of the eighteenth century (p. 47). The earliest surface is undated, but from the make-up of the second came a sherd which Mr Jeremy Knight has identified as manganese glazed white ware, made in Bristol in the eighteenth or early nineteenth century. From the infilling of the hollow way came freshly broken fragments of a handled bottle in manganese glazed red ware from North Herefordshire or possibly Buckley dating to the late eighteenth or early nineteenth century. A worn halfpenny of William III was also found in the foundation of this third road surface. Above this lay the first crowned road, of limestone water-binding construction, probably dating to no earlier than the middle of the nineteenth century, followed by two of tarmacadam, the first of which was constructed in the earlier part of this century.

CHAPTER II

The Finds

Introduction

In view of the importance of the finds not only for dating, but also because of the assumptions which have been drawn from their assumed association with the structures concerned, some general explanation is necessary of the problems regarding their stratification, and of the general assumptions which have been made during post-excavation study. Clearly the tomb itself and the various periods of its use provide the most important means of establishing a chronological framework. The primary construction allows a proportion of the finds to be separated stratigraphically, but difficulties arise even here: although several distinct pre-cairn periods are represented by the objects themselves, it has not proved possible to separate them stratigraphically even where they are sealed beneath it; it is evident that the areas occupied during the pre-cairn phase and the area covered by the cairn are not coincident, thereby allowing earlier finds to occur beyond its margins; parts of the cairn have been robbed away, exposing areas of buried soil which were formerly sealed by it and allowing varying degrees of disturbance; finds within the construction of the cairn include those which might belong to either the pre-cairn period or to the period of construction.

Changes which took place during the use of the tomb—notably the periodic modifications to each of the chamber entrances, and alterations to the soil profile within the forecourt—provide a second group of contexts which may contain finds contemporary with the cairn. An even later series is potentially provided by deposits sealed by or forming the final closure of the tomb, but in the case of the blocking on the southern side of the tomb this was generally too disturbed to be certain of the stratification. The subsequent destruction of the cairn has in some instances also affected these contemporary deposits, by revealing areas of soil which were originally sealed by the blocking for example, and has also formed the latest group of contexts. Running parallel with this sequence are deposits lying beyond the margins of the cairn and cairn blocking—the lower soil profile and earlier features away from the tomb—which have been ‘open’ from the earliest times up to the recent past.

The later the date of the deposit, the greater the chance that it will contain residual finds derived from earlier periods, and the simple sub-division of the

finds on the basis of their stratification has generally proved neither satisfactory nor meaningful. For this reason it has seemed necessary to approach the problems of dating some finds on a more subjective basis. In some instances the typology of the artefacts themselves is helpful: at a simple level, for instance, flintwork characteristic of the Mesolithic can be assigned unequivocally to that period regardless of its context, a vessel of which only a proportion of sherds is securely stratified beneath the cairn can be assigned to the pre-cairn period. The greatest problems concern those finds which are not closely datable on typological grounds, and whose context allows no positive assessment to be made of their phasing. Examples of this are types of flint implement from beneath the cairn which could be the products of either Mesolithic or Neolithic industries, or Neolithic pottery from contexts which suggest that it could belong to either the pre-cairn phase or to a period contemporary with the tomb. Whereas it has neither been feasible nor necessary to resolve these difficulties in all cases, in attempting to phase as great a proportion of the distinctive finds as possible, it has been necessary to make certain judgements concerning the contexts from which the finds have come, and what this is most likely to signify about their dating.

Some of the assumptions which have been made require explanation. With regard to finds from soils where the cairn has been robbed away, it has normally been assumed that the finds belong to the pre-cairn period; in many places where this occurred, only minimal disturbance appeared to have taken place, and on occasion even the impressions of the basal course of stone were visible. Where undated features occur in this situation, a pre-cairn date has seemed probable for the same reasons, and phasing to the pre-cairn Neolithic period has been assumed where pottery is present, since there is no evidence that the structure was robbed during the Neolithic period itself. It has been assumed, whether rightly or wrongly, that none of the pre-cairn Neolithic features are likely to belong to the period of cairn construction. Some finds were attributed to the base of the cairn during the course of excavation, but in view of the extreme paucity of finds from the cairn in general, and the subsequent realization that the cairn had partly sunk into the buried soil, they are now

considered to belong to the buried soil instead. In several instances there are reasonable grounds for supposing that finds from contexts beyond the margins of the cairn or within the chambers are actually more likely to be of pre-cairn date than to be contemporary with it; into this category come finds from *within* buried soils in the chambers and the lower soil levels within the forecourt, although it has normally been assumed that finds from the surface of these same layers are more likely to be contemporary with the cairn or its closure. In practice it has normally been assumed that prehistoric finds coming from disturbed positions within the chambers are contemporary with the tomb.

As a general observation it appears that a major proportion of the Neolithic finds belongs to the pre-cairn phase, and in some instances quantitative arguments have been advanced on this basis: where many more of one type of artefact have been found in pre-cairn contexts than are stratified elsewhere, a similar phasing would seem most appropriate to most of the unstratified or poorly stratified examples of that type.

Some caution must be taken in the interpretation of the finds distributions accompanying both the pottery and the flintwork reports since there is little question that they are greatly influenced by the extent

of the fully excavated area, the methods of recovery employed, and the degree of preservation at different parts of the site (fig 36). Wet sieving was largely only carried out on a restricted area of the buried soil beneath the eastern end of the cairn and within the forecourt, both for the recovery of artefacts and for the retrieval of carbonized plant remains by flotation (report by G. Hillman, forthcoming). But although this has undoubtedly led to the much higher recovery of finds here, it has probably only served to emphasise a real concentration at this point. In areas where excavation was limited to simply revealing the extent of the prehistoric structures, finds nevertheless came from ploughsoil, disturbed cairn material, or occasionally from within undisturbed cairn material. Buried soils were preserved at various points beneath the cairn and beneath the cairn blocking, although in some places the stone had been robbed away (fig. 36). To the south of the cairn and in the area to the east of the forecourt a deep soil level was preserved beneath the modern ploughsoil, although the finds themselves are strictly unstratified. The entire soil profile had been truncated by ploughing, however, in the area of the southern horn of the cairn, and by the post-medieval hollow way along parts of the northern side of the site.

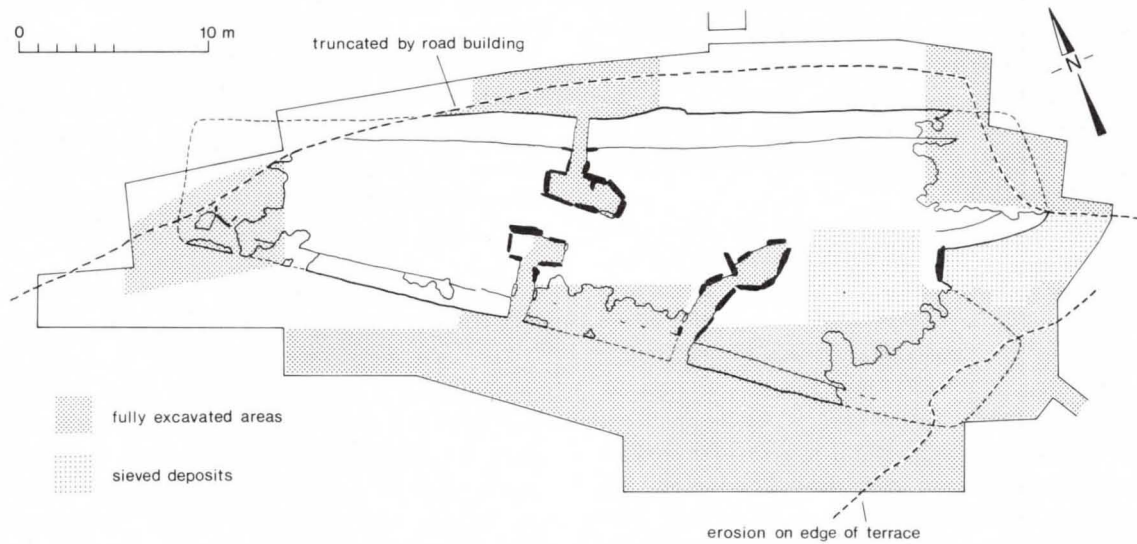


Fig. 36. Simplified plan showing extent of fully excavated soil areas, major areas of truncated soils, and approximate limits of sieved deposits.

THE NEOLITHIC POTTERY

Introduction

A total of more than 600 sherds of Neolithic pottery were found during excavation, weighing 3.8 kg. About 440 sherds weighing 3.3 kg are sufficiently distinctive and of a sufficient size for classification. From these, a minimum of thirty-one vessels have been distinguished, some by body-sherds alone. Seventeen vessels have been attributed to the pre-cairn period, seven to the period of the tomb's use, and a further seven to the period of its closure. The sherds have come from a wide variety of contexts—some well stratified and others only poorly so. In addition there has been a problem of distinguishing earlier residual finds found in later contexts. Consequently it has seemed necessary to adopt what may appear to be a somewhat subjective approach firstly in distinguishing individual vessels, and secondly in attributing them to particular phases of the site. However, it seems unlikely that the assumptions which have been made seriously distort

any of the main conclusions which can be drawn from the assemblage as a whole, and without adopting this approach the material would be much more poorly described. An attempt has been made in the following catalogue to give some indication of the provenance of sherds ascribed to a particular vessel, and to introduce a note of caution where there may be some uncertainty about whether they do in fact represent a single vessel or where the phasing is equivocal.

Since undertaking the initial sorting and description of the material, the pottery has been examined by Tim Darvill from the point of view of the fabrics represented. The results of this are presented in Part 3 of this pottery report and have been used in both the catalogue and discussion which follow. Some preliminary petrological analysis of the pottery was undertaken by Dr David Jenkins, University College, Bangor, which has been of great value during the preparation of this report.

1. Catalogue

Pre-cairn pottery (nos. 1-17, figs. 37-39)

A minimum of seventeen vessels is represented by 289 sherds weighing 1725 g. Most of the sherds came from the buried soil beneath the cairn or from features stratified beneath it, but some are less securely dated—coming, for instance, from places where the cairn had been robbed away or from soils outside its limits. Most of the vessels identified, however, have a majority of sherds which are firmly located stratigraphically; the exceptions are nos. 4-6, 16-17. Even though much of the buried soil beneath the cairn remains unexamined, as with the Neolithic flintwork, there is a clear concentration of sherds below the eastern end of the cairn in the vicinity of

the pre-cairn timber structures. Some of the vessels were associated with these structures and with Neolithic flintwork, and whether or not by accident, there were occasional associations with Mesolithic flint types.

The illustrated vessels are represented by rim-sherds and the remainder by body-sherds alone. Similarity of shape and fabric has meant that in some instances the ascription of sherds to particular pots cannot be made with great confidence (especially between sherds of pots 9-13), but no potentially misleading conclusions hang upon any possible confusion.

1. Hemispherical bowl about 260 mm in diameter in a well-smoothed vesicular fabric between 7-12 mm thick containing angular quartz grains (Fabric 1). The outer surfaces are generally brown to dark brown (7.5YR 4/2 to 7.5YR 3/2) although some are red (2.5YR 5/6); internal surfaces are black. Twelve sherds, all found within a radius of about 5 m, are confidently ascribed to this vessel.

The rim-sherds all came from the north-south bedding-trench of the structure beneath the northern horn of the cairn (F229); one sherd came from the east-west trench thought to belong to the same structure (F133); five sherds are from pre-cairn soils; two sherds are from the later (but pre-blocking) soil accumulation within the forecourt. Some of the sherds from the bedding-trenches are sufficiently large and unabraded to suggest that they belong to a period

not far removed from the erection of the structure. Total weight 135 g.

2. Rolled rim of a vessel about 260 mm in diameter. The fabric is smoothed, and thins from 16 mm at the rim to 9 mm beneath it, and contains angular quartz grains (Fabric 1). The outer surfaces are brown and dark brown (7.5YR 4/2) to black, and the internal surfaces are a reddish-brown (5YR 4/4) to black. The two joining rim sherds and two body-sherds are ascribed to the same vessel with reasonable confidence, and were found within a radius of 4 m, three sherds within the buried soil and one body-sherd from the filling of the east-west bedding-trench beneath the northern horn of the cairn (F133D). Total weight 45 g.

GWERNVALE



Fig. 37. Pre-cairn pottery (nos. 1-6). ($\frac{1}{3}$)

3. Thin, slightly everted rim 6-8 mm thick in a fabric containing some quartz grains (Fabric 1). The external surface is reddish-yellow (5YR 6/6) to red (2.5YR 5/6) and the internal surfaces have the same range but leading to black. Total weight 135 g. Three rim-sherds and sixteen body-sherds are ascribed to the vessel with moderate confidence, and nine others may possibly also belong.

All were found within a radius of about 12 m. Six sherds come from the pre-cairn soil; one is from a pre-cairn feature (F167); three are from the lower soil levels within the forecourt; three are from the later soil accumulation within the forecourt; two sherds, including one rim, are from the north-south bedding-trench beneath the northern horn of the cairn (F229); four sherds are from soils outside the limits of the cairn. Of the remaining sherds which might belong to the same vessel, five are probably from pre-cairn contexts, and two are from soils outside the limits of the cairn.

4. Lug or boss in a hard vesicular fabric 3-6 mm thick containing quartz grains and having a lightly tooled surface

(Fabric 1). The external surface is black and the internal surface is a dark reddish-brown (5YR 3/2). Total weight 10 g.

This is a single sherd from a not entirely secure context—an area of the buried soil where the cairn itself had been robbed away.

5. One fragmentary rim-sherd and seven other sherds in a fabric 6-7 mm thick containing small quartz grains (Fabric 1). The original shape of the vessel is uncertain, although several of the sherds which have concave outer faces would suggest a shouldered form. The rim itself may have been fairly thin and only slightly everted. The external and internal surfaces range between dark reddish-brown (5YR 3/2) and black.

There is little certainty that all the sherds, which were found widely scattered over a distance of 44 m, were all from the same vessel. One sherd was from disturbed cairn material; two are from soils outside the cairn; one sherd was within the buried soil within the outer passage of Chamber 1, but within the same horizon as that sealed below the

cairn; four sherds are possibly from the pre-cairn soil. Total weight 45 g. Not illustrated.

6. Four small thin body-sherds about 6 mm thick with reddish-brown (5YR 5/3) to black external surfaces and black internal surfaces containing some quartz grains (Fabric 1). Total weight 10 g. Not illustrated.

The sherds were found within a radius of about 3.5 m on the north-west side of the cairn within soils sealed by the cairn blocking and forming a continuous horizon with that sealed below the cairn. It is possible that the sherds are of pre-cairn origin, but there is a possibility that they were contemporary with the use of the cairn.

7. Thick rolled rim in a smoothed vesicular fabric (Fabric 2), which is a dark reddish-brown (5YR 3/2) to black in colour, and which is probably from a vessel at least 240 mm in diameter. The rim itself is 14 mm thick and the vessel body beneath thins to 7 mm. Weight 15 g.

This single sherd is from the buried soil beneath the cairn.

8. Two rim-sherds and one body-sherd from a vessel with a thickened rolled rim. The sherds are 10-12 mm thick and are in a vesicular fabric (Fabric 2) which is a light brown (7.5YR 6/4) to reddish-brown (5YR 5/4) in colour. Total weight 35 g.

The sherds were found within a radius of 4 m and are confidently ascribed to the same vessel. One rim-sherd and body-sherd are from within the buried soil beneath the cairn; the other rim was found within buried soils in the passage of Chamber 1. The soil profile here was continuous with that beneath the adjacent parts of the cairn and it would appear that these sherds were residual from the pre-cairn period.

9. Thick everted rim in a smooth, vesicular fabric 6-10 mm thick (Fabric 2). The other sherds which have been ascribed to the same vessel with reasonable confidence comprise five body-sherds, two sherds from the shoulder and one sherd from the neck, and together suggest a form similar in general outline to nos. 10 and 11. The external surfaces are reddish-brown (5YR 5/4) to dark reddish-

GWERNVALE

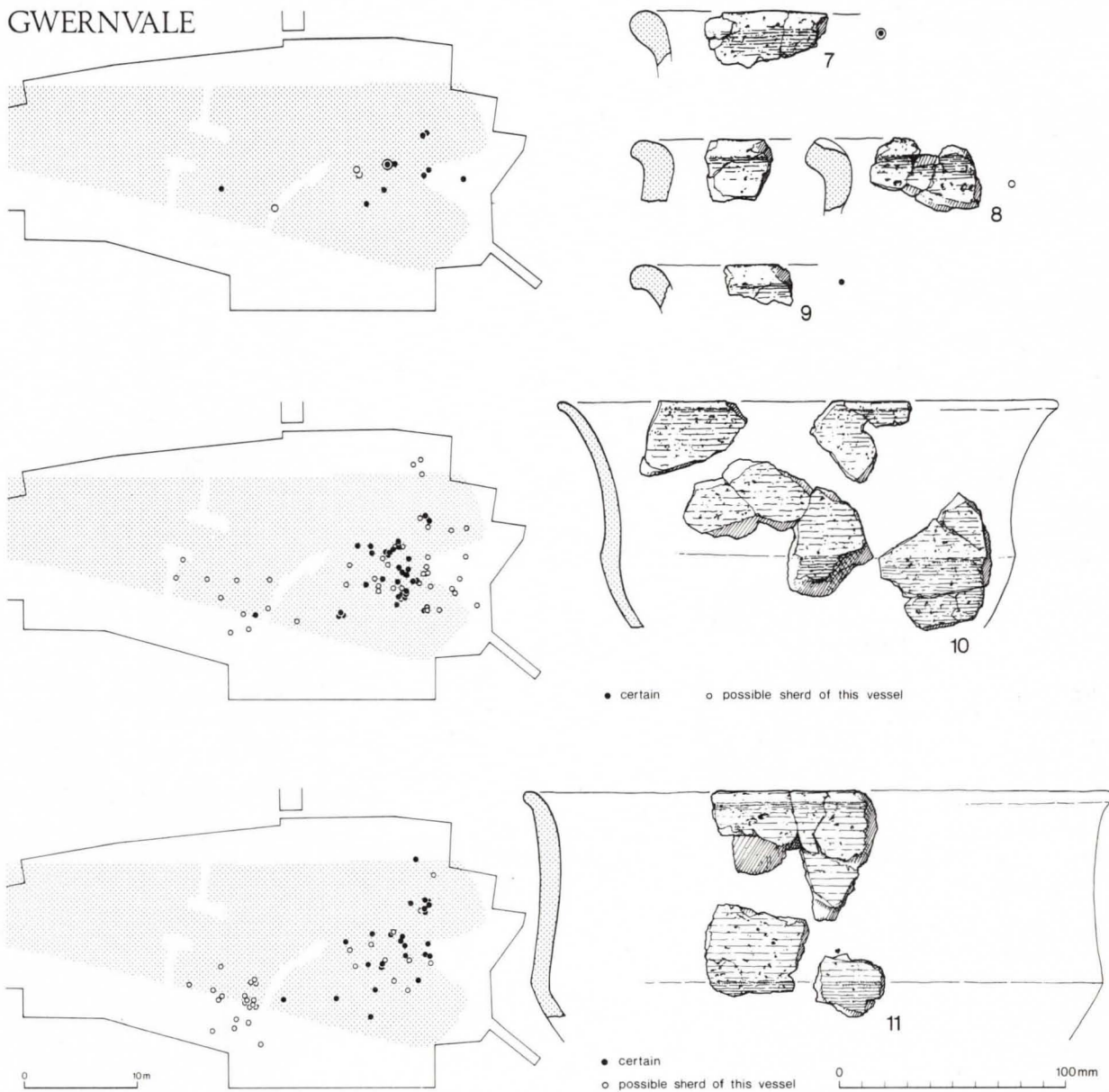


Fig. 38. Pre-cairn pottery (nos. 7-11). ($\frac{1}{3}$)

brown (5YR 3/2) and black; the internal surfaces are black.

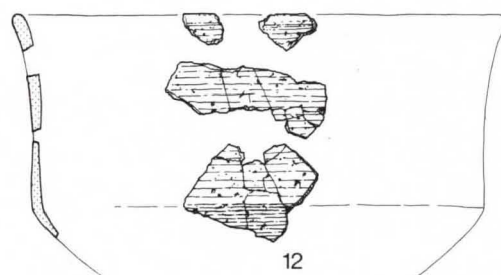
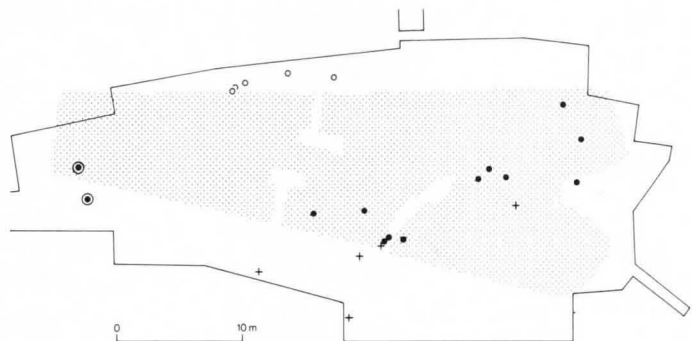
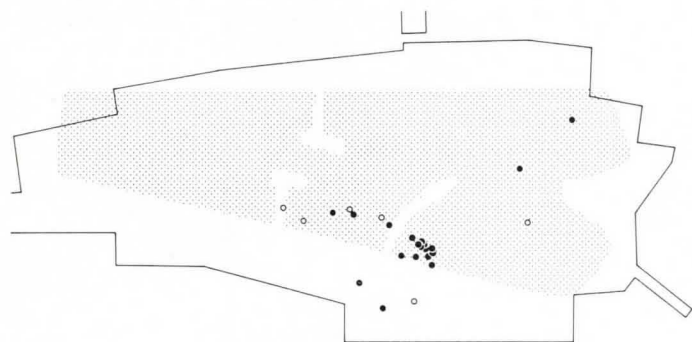
The sherds were found within a radius of about 10 m and all are from reasonably secure pre-cairn contexts. Five sherds, including the rim and sherds from the neck and shoulders were found within the pre-cairn soil; one sherd came from the posthole at the western end of the east-west bedding-trench beneath the northern horn of the cairn (F133E); two sherds, including one from the neck, are from the lower soil profile within the forecourt; one shoulder-sherd is from the stonehole of Orthostat 1 within the forecourt. Total weight 75 g.

10. Shouldered bowl about 220 mm in diameter with everted rim in a smoothed vesicular fabric 4-9 mm thick (Fabric 3). The outer surfaces are red (2.5YR 5/6) to brown (7.5YR 5/4) and dark brown (7.5YR 3/2); internal surfaces are black. Of the sherds which are confidently ascribed to this vessel, four are rim sherds, six are from the shoulder, three are from the neck and nineteen others are body-

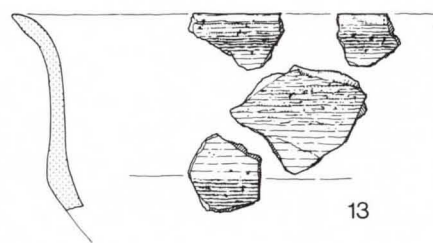
sherds. A further forty-nine sherds are less certainly from the same vessel; of these one is from the shoulder and three are from the neck.

All the confidently ascribed sherds are from reasonably secure pre-cairn contexts: twenty-eight sherds, including those from the rim, are from the pre-cairn soil; a single sherd came from each of the pre-cairn features F149-51 and F163. Of the less certain sherds twenty-eight are from the pre-cairn soil; four are from the lower soil levels in the forecourt; four are from the later soil levels in the forecourt; one is from the post-position of one of the postholes of the six-poster within the forecourt (F211); one is from the buried soil in the outer passage of Chamber 2, and one is from the later soil accumulation within this chamber; two sherds are from the buried soil in the outer passage of Chamber 1; one is from the pre-cairn feature F259. The more certain sherds belonging to the vessel all came from a radius of about 9 m, and the others from a radius of about 13 m. Total weight 440 g.

GWERNVALE



12



13

• certain ○ possible sherd of this vessel

0 100 mm

• 14

● 15

○ 16

+ 17

Fig. 39. Pre-cairn pottery (nos. 12-17). ($\frac{1}{3}$)

11. Shouldered bowl about 260 mm in diameter in a smoothed vesicular fabric 5-8 mm thick (Fabric 3). The external surfaces are a dark brown (7.5YR 4/2 to 7.5YR 3/2) to black in colour, and the internal surfaces are all black. Of the twenty-five sherds which are more confidently ascribed to this vessel and which were found within a radius of about 9 m, eight are rim-sherds, two are from the shoulder, three are from the neck and twelve are body-sherds. Of a further thirty-four sherds which possibly belong to the same vessel and which were found within a radius of 12 m, one is a rim, two are from the neck and one from the shoulder.

The majority of sherds came from secure pre-cairn contexts: twenty sherds, including six from the rim and one from the shoulder, came from the pre-cairn soil; one sherd came from the post-pit at the eastern end of the east-west bedding-trench beneath the northern horn of the cairn (F133E); one rim-sherd came from pit F162 beneath the cairn; two sherds are from the earlier soil levels within the forecourt. Of the less certain sherds, twenty-three probably came from the pre-cairn soil, two sherds, including one rim, came from pre-cairn feature F287; one sherd came from the later soil levels within the forecourt; two sherds were from features beyond the southern side of the cairn, possibly associated with cairn blocking (F46, F60). Total weight 470 g.

12. Shouldered bowl about 180 mm in diameter in a thin vesicular fabric only 3-5 mm thick (Fabric 3). The external surfaces are reddish-brown (5YR 5/3) to black in colour, and the internal surfaces are black. Twenty-nine sherds have been ascribed to this vessel with reasonable confidence, and all were found within a radius of about 10 m. Two are rims, four are from the shoulder and the remainder are body sherds. The illustrated form is somewhat conjectural.

The majority of sherds are from secure pre-cairn contexts: twenty sherds, including two rims and four from the shoulder, came from the pre-cairn soil; one sherd came from the buried soil in the outer passage of Chamber 1, beneath the base of the inserted blocking wall; one sherd came from the earlier soil levels within the forecourt, and one from the later levels; one sherd came from each of features F162 and F167 sealed beneath the cairn; one sherd was from soils outside the area of the cairn. Total weight 80 g.

13. Shouldered bowl with a diameter of probably at least 260 mm in a smoothed vesicular fabric 4-9 mm thick (Fabric 3). The external surfaces are brown (7.5YR 5/4) to dark brown and black, and the internal surfaces are black. Twenty-two sherds have been attributed to this vessel with some confidence. These comprise four rim-sherds, two from the shoulder, one from the neck and fifteen body-sherds. Six other sherds might also belong to the same vessel.

All were found within a radius of 12 m, and a majority are from secure pre-cairn contexts. Nine sherds, including one rim and sherds from the neck and shoulder came from

the pre-cairn soil; nine sherds, including ones from the rim and shoulder came from pre-cairn pit F68; one sherd was found within the north-south bedding-trench beneath the northern horn of the cairn (F229); two sherds, including a rim, are from soils outside the cairn; one sherd is from F60 beyond the southern side of the cairn. Of the six sherds which possibly belong to the vessel, four are from soils beneath the cairn, one is from soils beyond the southern side of the cairn, and one is from disturbed levels within Chamber 2. The illustrated profile is partly conjectural. Total weight 170 g.

14. Eleven body-sherds in a smoothed, black and vesicular fabric about 5-8 mm thick (Fabric 3). Several of the sherds have concave outer faces and would suggest a shouldered form. Total weight 15 g. Not illustrated.

A good proportion of the sherds are from pre-cairn contexts; eight are either certainly or probably from the buried soil beneath the cairn; one sherd is from the buried soil in the outer passage of Chamber 1 (the soil here being continuous with that sealed beneath adjacent parts of the cairn); one sherd is from the later (but pre-blocking) soil accumulation within the forecourt.

15. Two body-sherds in a smoothed vesicular fabric about 5 mm thick (Fabric 3). The external surfaces are dark brown (7.5YR 4/2) to brown (10YR 5/3) in colour and the internal surfaces are black. Total weight 10 g. Not illustrated.

The two sherds were found within 3 m of each other, one coming from the soil buried beneath the cairn and the other in soils beyond the southern side of the cairn.

16. Five sherds including a small rim fragment and a slightly concave piece probably from the neck in a vesicular fabric about 6 mm thick (Fabric 3). The external surfaces are brown (7.5YR 5/4) to black in colour and the internal surfaces are black. Total weight 10 g. Not illustrated.

All the sherds were found within a radius of about 4 m. Three were in soils to the north of the cairn (here continuous with the profile sealed beneath it); one was found within the base of one of the layers blocking the entrance to Chamber 3, and one sherd was found within a stony feature at the surface of the buried soil to the north of the cairn (F309). The sherds are probably pre-cairn, but might possibly be contemporary with its use.

17. Five body-sherds in a slightly gritty and micaceous fabric 6-8 mm thick (Fabric 4). The external surfaces are reddish-brown (5YR 5/3) to dark reddish-brown (5YR 2.5/2) in colour and the internal surfaces are black. Total weight 25 g. Not illustrated.

The sherds, which were all found within a radius of 11 m, are ascribed to the same vessel with moderate confidence. Only one of the sherds is from a secure pre-cairn context, being from the buried soil beneath the cairn; three more are from soils outside the cairn, and the remaining one was found in buried soils in the outer passage of Chamber 1.

Pottery contemporary with the use of the cairn

(nos. 18-24, fig. 40)

Seven pots have been identified in this group, represented by forty-four sherds weighing a total of 375 g. Because all the chambers had been disturbed this group is the least satisfactory from the point of view of stratigraphic definition. Pottery survived only in Chamber 2: some sherds were found on the surface of the buried soil within the chamber and passage and others were found scattered outside this and other chamber entrances. A number of the other sherds considered here, however, were found within soils which had accumulated since the robbing and partial collapse of Chamber 2, but it is thought that they might represent vessels which had originally been contained within it.

All the sherds which were found *within* the buried soil in Chambers 1 and 2 have been ascribed to pre-cairn vessels (nos. 5, 8, 10?, 12, 14, 17), and the robbed levels within Chamber 2 have also produced sherds which might belong to earlier vessels (nos. 10? and 13?). In addition, one of the sherds ascribed to the pre-cairn vessel no. 16 came from within the base of one of the layers blocking the entrance to Chamber 3. Although there is some uncertainty about the precise phasing of some of these sherds, their attribution to the pre-cairn period is unlikely to affect the general conclusions which can be drawn from the assemblage as a whole.

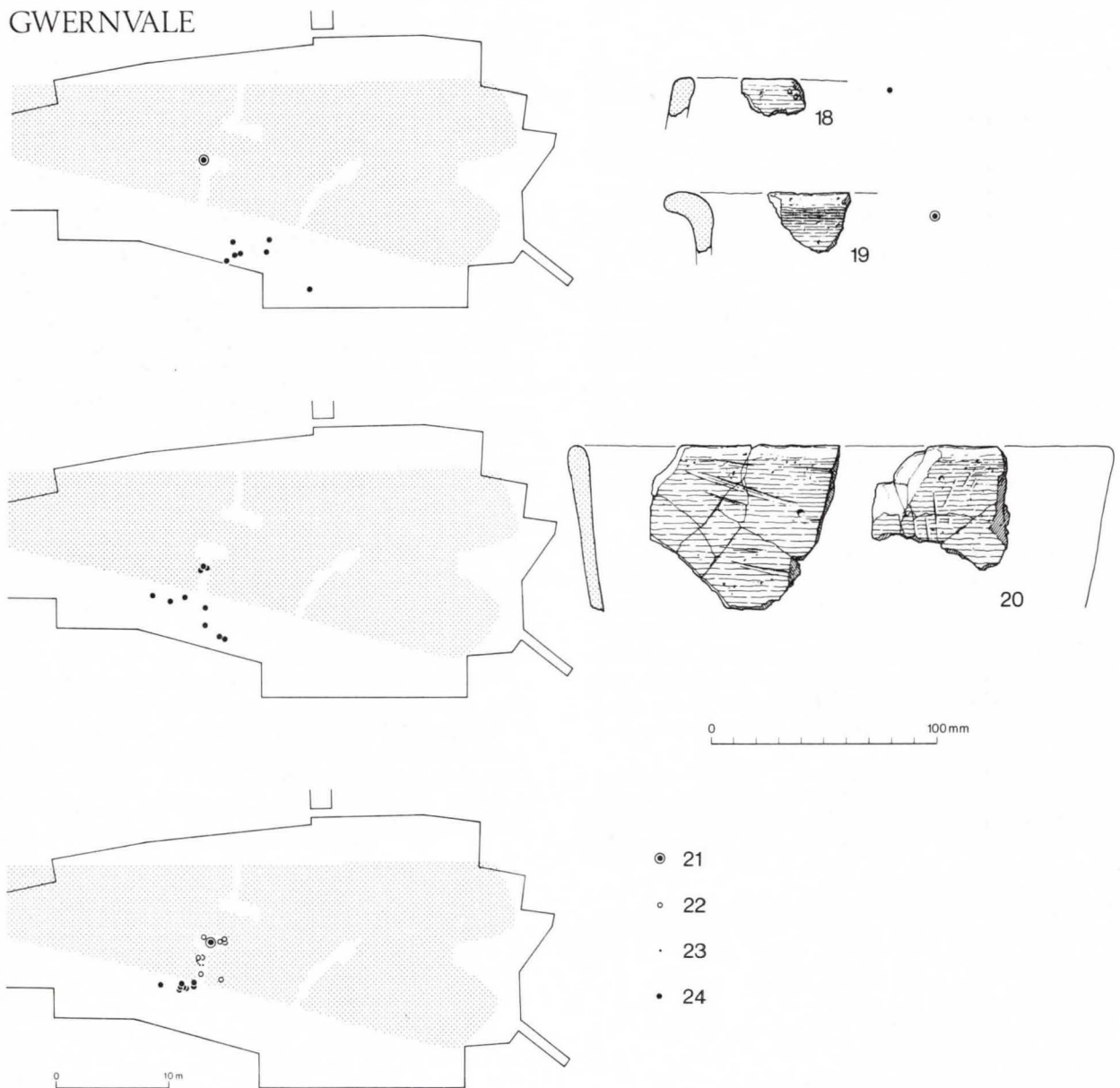


Fig. 40. Pottery contemporary with the use of the tomb (nos. 18-24). ($\frac{1}{3}$)

18. Vessel with slightly inturned rim with flattened top in a hard fabric 6-8 mm thick containing small chert fragments (Fabric 5). Eight sherds, including one rim, which were found within a radius of 4 m, are ascribed to this vessel with some confidence. The internal and external surfaces are generally black although the rim is partly a yellowish-red (5YR 5/6). Total weight 60 g.

Five sherds are from soils to the south of the cairn, one is from feature F46, and one sherd is from ploughsoil. The precise phasing of the vessel is uncertain.

19. Wide hooked rim in a smoothed, thick vesicular fabric 6-10 mm thick and dark brown to black in colour (Fabric 3). Weight 10 g.

This single sherd was found within disturbed material within Chamber 2 which had accumulated after robbing and partial collapse of the chamber's structure. It is therefore possible that the sherd is of a vessel contemporary with the use of the chamber, reaching its position as a result of later disturbance.

20. Simple hemispherical bowl 240 mm in diameter, in a vesicular fabric 6-8 mm thick and having a smooth, tooled external surface (Fabric 3). Ten sherds are confidently ascribed to this vessel and all were found within a radius of about 4 m. Total weight 140 g.

They comprise one sherd from ploughsoil, six (including two rims) from soils beyond the southern side of the cairn, three within Chamber 2 (two from the buried soil in the outer passage, and one from disturbed soils within it). From the general location of the sherds it seems most reasonable to suppose that the vessel was contemporary with the use of the chamber.

21. Single sherd in a smoothed hard fabric 5-7 mm thick and dark brown to black in colour (Fabric 5). Weight 5 g.

The sherd was found within disturbed soils which had accumulated after the partial destruction of Chamber 2. Possibly contemporary with use of Chamber 2. Not illustrated.

22. Ten body-sherds in a thick vesicular fabric (Fabric 3), 7-10 mm thick, all found within a radius of 2 m. The

external surfaces are a reddish-brown (5YR 5/4) and the internal surfaces are black. Total weight 50 g. Not illustrated.

All the sherds were found in close proximity to Chamber 2, but were all in disturbed contexts. Those actually within the chamber were found in soils which had accumulated after some robbing had taken place. One was found within disturbed cairn material near the chamber. It is possible that the sherds are of a vessel contemporary with the use of the chamber.

23. Six body-sherds in a coarse vesicular fabric about 12 mm thick (Fabric 2). The external surfaces are light brown (7.5YR 6/4) and the internal surfaces are black. Total weight 60 g. Not illustrated.

The sherds were found within a radius of less than 0.5 m within disturbed soils in Chamber 2, and therefore possibly belong to a vessel contemporary with the use of the chamber.

24. Eight body-sherds in a thin fabric 5-6 mm thick containing abundant quartz grains (Fabric 6). The external surfaces are dark reddish-brown (5YR 3/2) and the internal surfaces are a dark greyish-brown (10YR 4/2). Total weight 50 g. Not illustrated.

The sherds are confidently ascribed to the same vessel, which from the curvature of the sherds apparently had a small diameter. All the sherds were found within a radius of about 1.5 m. One sherd was found within the external blocking structure outside the entrance to Chamber 2 and six sherds were found upon the surface of the buried soil beneath it immediately outside the chamber entrance. One sherd, however, was found on the surface of the buried soil within the outer passage of the chamber and sealed below the lowest course of the inserted blocking wall. It appeared that these stones represented the residue of a 'temporary' blocking wall which had not been entirely removed when the chamber was last entered, and it would therefore appear that this vessel was broken at a time when the chamber was still in use. In this respect the vessel differs from nos. 25 and 26, sherds of which were found exclusively outside the chamber and beyond the southern side of the cairn.

Pottery associated with the blocking of the chambers (nos. 25-31, figs. 41-42)

A minimum number of seven vessels is represented in this latest group by 109 sherds weighing 1220 g. Some of the sherds belonging to each vessel are securely stratified in contexts associated with the final closure of the tomb, although there is a possibility in

several instances that the vessels might either be residual from the pre-cairn period (*eg* no. 27) or were derived from deposits which accumulated before the blocking took place (*eg* no. 28).

25. Round-bottomed bowl about 280 mm in diameter with a flattened out-turned rim in a coarse, black, vesicular fabric 7-8 mm thick with 'grass-wiped' outer surfaces (Fabric 2). Thirty-eight fragments, including five rim sherds, have been confidently ascribed to this vessel. Total weight 460 g.

All the sherds were found within a radius of about 4 m outside the entrance to Chamber 2. A majority of the sherds (twenty-nine) were found within soils on the southern side of the cairn, some beneath cairn blocking material. Four sherds (including one large rim) were found within pit F47 (which also contained parts of pot 26). Three sherds (including one rim) were found in pit F67. One rim was found in pit F326, and one sherd was found on the surface of the buried soil beneath the external blocking structure

outside the chamber entrance. Since none of the sherds was found in soils beneath the cairn or within the chamber it seems probable that the vessel was associated with activity outside the chamber entrance at a time when the chamber was closed, although it should be noted that in the case of pot 24 a similar interpretation would have been made had not a single sherd been found within the passage itself. Although the vessel may have been broken at any time during the use of the tomb, the large size and unabraded character of the sherds, and their presence in features thought to be contemporary with the final closure, strongly suggest that the vessel belonged to the latest history of the cairn and that it was involved with ceremonies associated with the final blocking of the chamber and cairn.

GWERNVALE

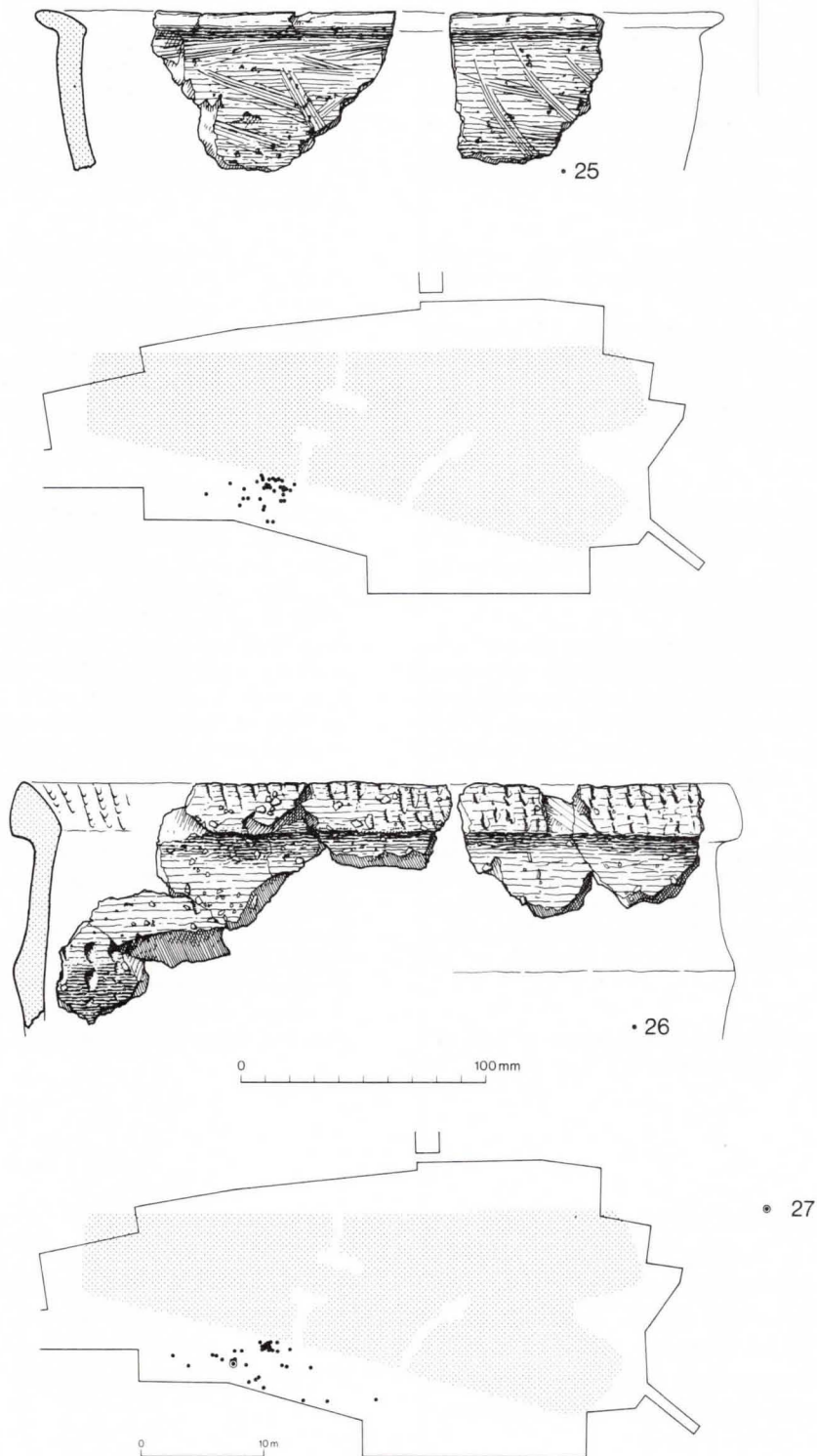


Fig. 41. Pottery associated with the blocking of the chambers (nos. 25-27). ($\frac{1}{3}$)

26. Decorated 'Peterborough' bowl about 300 mm in diameter in a coarse thick fabric with abundant quartz grains (Fabric 6). The inner and outer surfaces are an oxidized yellowish-red (5YR 5/6) to predominantly black. Decoration is by impression on the shoulder by some angular instrument and by stab-and-drag marks inside and outside the rim. Thirty-five sherds have been confidently ascribed to this vessel, which include six rim sherds, two from the neck, one from the shoulder, and twenty-six body-sherds. Total weight 510 g.

All the sherds were found within a radius of less than 9 m beyond the southern side of the cairn and in the vicinity of the entrance to Chamber 2. A majority of the sherds were found within soil and stone on the southern side of the cairn, and a proportion were found on the surface of the buried soil sealed beneath the external blocking structure outside the chamber entrance. A decorated sherd from the shoulder was found within pit F47; a sherd which joins another from the rim came from pit F325, and two joining rim-sherds came from pit F58. The considerations on

dating discussed for pot 25 apply equally with this pot.

27. Fragmentary rim-sherd in a hard black fabric containing quartz grains (Fabric 1). The rim is about 11 mm thick and appears to belong to a simple thickened rim. Weight 5 g. Not illustrated.

Found within pit F58 which was sealed below cairn blocking material and also contained fragments of pot 26. Although the sherd is within a feature thought to belong to the period when Chamber 2 was finally sealed it could belong to an earlier period.

28. Fragments of an Ebbsfleet bowl, probably of small diameter, in a dense flaky fabric about 8 mm thick containing sparse quartz grains (Fabric 7). Decoration is by whipped cord impressions on the outside of the rim and on the slight shoulder. The nine sherds which are confidently ascribed to this vessel were all found within a radius of about 3 m near the entrance to Chamber 3 and within layers of material forming the final blocking of the chamber and cairn.

In detail, these contexts are as follows: three sherds were found within the layer of soil immediately overlying the initial external stone stack outside the entrance (fig. 23); one sherd was found within the layer of soil to the east of the entrance representing the outermost element of the *chamber* blocking sequence; one decorated sherd was found within stones and soil representing the base of the external blocking structure to the west of the entrance to the chamber; three sherds (including the rim and shoulder) were found within the upper part of the *cairn* blocking deposits to the west of the entrance; one sherd was found in the upper part of the outer pitched stone layer of the *chamber* blocking to the east of the entrance. The precise phasing of the vessel is open to some doubt, since it would seem that the vessel had already been broken into small fragments before the chamber and cairn blocking took place and possibly became incorporated in them by accident.

29. Two body-sherds in a thin vesicular fabric (Fabric 3) 6 mm thick, with brown (7.5YR 5/4) external surfaces and black internal surfaces. Weight 10 g. Not illustrated.

The sherds were found within 1 m of each other within the soil layer on the eastern side of the entrance to Chamber 3 representing the outermost element of the chamber blocking. Like 28, the relationship between this vessel and the chamber is uncertain.

30. Single small rim-sherd, apparently part of a large rolled rim, and seven body-sherds in a fabric 6-7 mm thick containing a moderate amount of angular quartz grains (Fabric 6). The internal and external surfaces are reddish-yellow (5YR 6/6) to black in colour. Weight 50 g. Not illustrated.

The sherds were all found within a radius of about 2 m near the entrance to Chamber 3 within layers belonging to the final blocking of both the chamber and cairn. Five sherds were found within the layer of soil immediately overlying the initial stone stack outside the chamber entrance; one sherd was found within the base of the outer stone stack of the chamber blocking to the east of the entrance; two sherds came from the soil layer representing the outermost element of the chamber blocking on this side of the entrance. Like no. 28 the sherds may have been residual finds incorporated within the blocking material.

31. Fifteen body-sherds in a smoothed fabric 6-10 mm thick containing sparse large angular quartz grains (Fabric 1). Total weight 135 g. Not illustrated.

The sherds were all found within about 1 m of each other at the surface of the surviving cairn blocking in the vicinity of the assumed entrance to Chamber 4. Only the surface of this deposit was examined at this point, and consequently the overall distribution of sherds of this vessel is unknown. In view of the number of sherds within such a restricted area it seems possible that the vessel was only broken at a time when the blocking material was laid down.

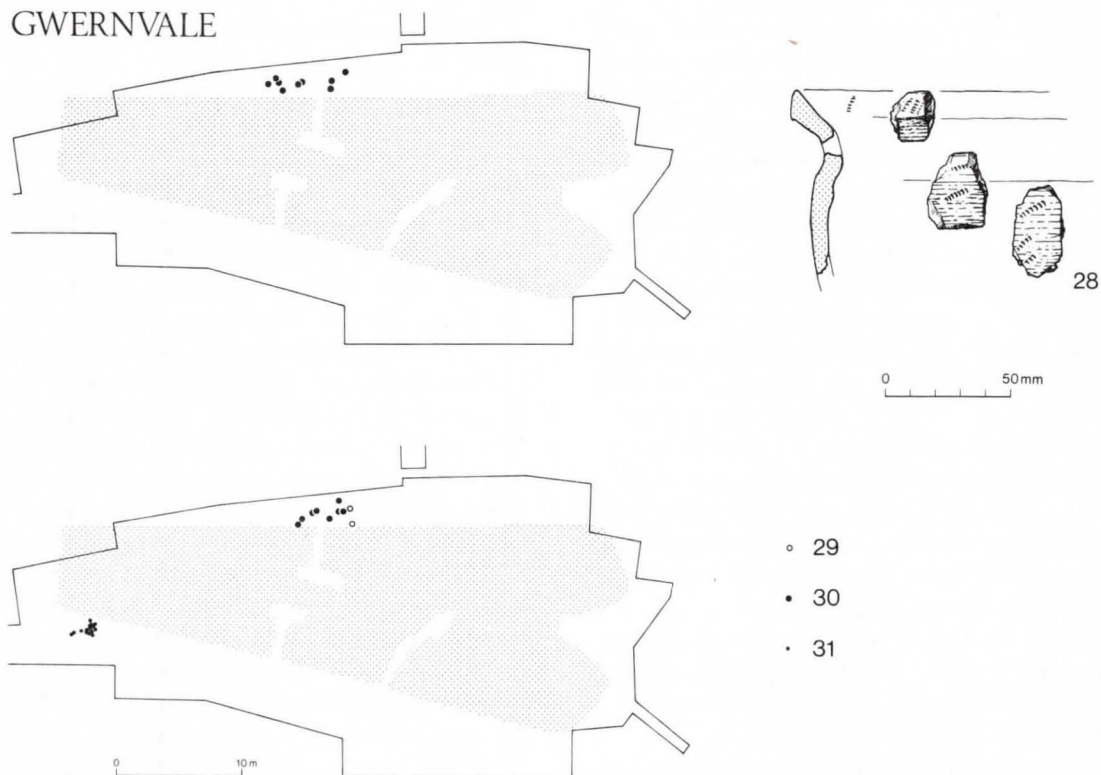


Fig. 42. Pottery associated with the blocking of the chambers (nos. 28-31). (1/3)

2. Discussion

by *Frances Lynch*

The pottery from Gwernvale is an important addition to the Neolithic material from Wales for a number of reasons. Firstly the stratigraphic distinctions allow comparisons to be made between three phases of ceramic use at the site which associated radiocarbon dates enable us to locate fairly precisely in time. Secondly the quantity of material found means that one can speak with some confidence about the preferred styles and fabrics and thirdly, the association of the pottery with a megalithic tomb of distinctive design with well-known analogues in both Wales and England gives cultural depth to the discussion. All the vessels which can be even tentatively reconstructed on paper are shown in figure 43.

The pre-cairn pottery (nos. 1-17) represents the largest proportion of the total assemblage from the site both in the number of vessels and by weight of sherds. There are two basic shapes—shouldered bowls with everted rims and unshouldered bowls with heavy rims—and there are three main fabric groups (Fabrics 1-3, see p. 111). The two most common fabrics present are a hard, sparsely gritted ware (Fabric 1) and an almost equally hard, compact vesicular ware without visible grits (Fabric 3). Both are predominantly dark in colour, are fairly thin-walled, well fired and have neatly smoothed surfaces, though none can be described as truly burnished. Altogether the standard of manufacture is high. The compact vesicular ware (Fabric 3) is predominant in terms of both the weight of sherds and in the number of pots represented (nos. 10-16). It varies in thickness, hardness and colour, but all the pots are without visible grits and have very small vesicles on the surface. Breaks show this aerated texture very clearly and the compactness of the clay distinguishes this almost coke-like fabric from the looser 'corky' material which is normally associated with the term 'vesicular'. Fabric 2, which is less plentiful than the others, is looser in texture and is closer to vesicular wares elsewhere. Pots 7-9 belong to this group; their shape is rather uncertain, but they were probably shouldered though the rims are uncharacteristically heavy. The gritted wares (Fabric 1) all contain well-crushed quartz grits. The quantity of stone varies a good deal—from pot 5 which has much and consequently an abrasive surface, to pot 1 where the grits are very sparse and the smoothed surface is partly vesicular like that of the gritless wares.

The shapes of the pots show a similar dichotomy. The shouldered bowls are made in the vesicular fabric, while the gritted ware is used for the deep hemispherical bowls with heavier rims. In Fabric 1 only pot 5 includes concave sherds which might suggest a shouldered form with a simple, everted and unthickened rim, though no shoulder sherds are

present. A distinction in rim form is noticeable but less sharp. The rims on the unshouldered bowls in Fabric 1 are consistently heavier than those on the shouldered ones and some are obviously rolled—a technique which might be considered diagnostic of this 'Abingdon' style in southern Wales. In contrast the shouldered bowls in Fabric 3 all have simple everted rims, though that on pot 13 might be described as 'developed'. In the small Fabric 2 group the rims are heavier and that on pot 17 is actually rolled, using the technique which is so marked in pots 1-3. As mentioned above, it is probable that these Fabric 2 pots were shouldered and they seem to underline the contemporaneity, argued below, of the two main types of pre-cairn pottery.

Since two styles may be recognised within the pre-cairn group it is legitimate to ask whether or not it is possible to separate them stratigraphically. Within the thin buried soil it was not possible to identify any subsidiary layers, but it can be said that both wares are associated with the bedding-trenches of the building beneath the northern horn of the cairn. Sherds from pots 1 and 13 were found within the north-south bedding-trench, and sherds from pots 2, 9, and 11 came from the east-west trench and its postholes. There is no reason to suggest therefore, that the two pottery styles and the three fabrics are not contemporary, though it is possible to argue that they might have belonged to separate cultural strands. Sherds of pot 13 are the only ones which are directly associated with the radiocarbon date of c. 3100 bc from charcoal within pit F68 (see Table 3, page 151, and Appendix II).

The open shouldered bowls in a vesicular, gritless ware are characteristic of the pottery styles established in Ireland and on the western coasts of Wales where it is exemplified by the pots from the Portal Dolmen at Dyffryn Ardudwy in Caernarvonshire, and may be designated the 'Irish Sea Group' (Lynch 1976, 64), a component of what has been called in a wider context the Grimston/Lyles Hill series (Smith 1974, 112). The rims are normally light and simple and the shoulders are marked by a fairly sharp carination. However, a rather slacker profile with a heavier rim may also be found within the style at a relatively early date, for the material from Llandegai, Caernarvonshire, was associated with a rectangular building with a radiocarbon date of c. 3290 bc (Lynch 1976, 65). In shape, therefore, pots 8 to 16 belong to this western family. The fabric, however, distinguishes them from the Dyffryn/Llandegai series because the texture is very much more compact. The pots from north-west Wales have a loose corky appearance (especially in a freshly broken section) which is approached only by pot 8 in Fabric 2. At Clegyr Boia, Pembrokeshire (Williams 1952) the clay is rather more compact than at Dyffryn

GWERNVALE

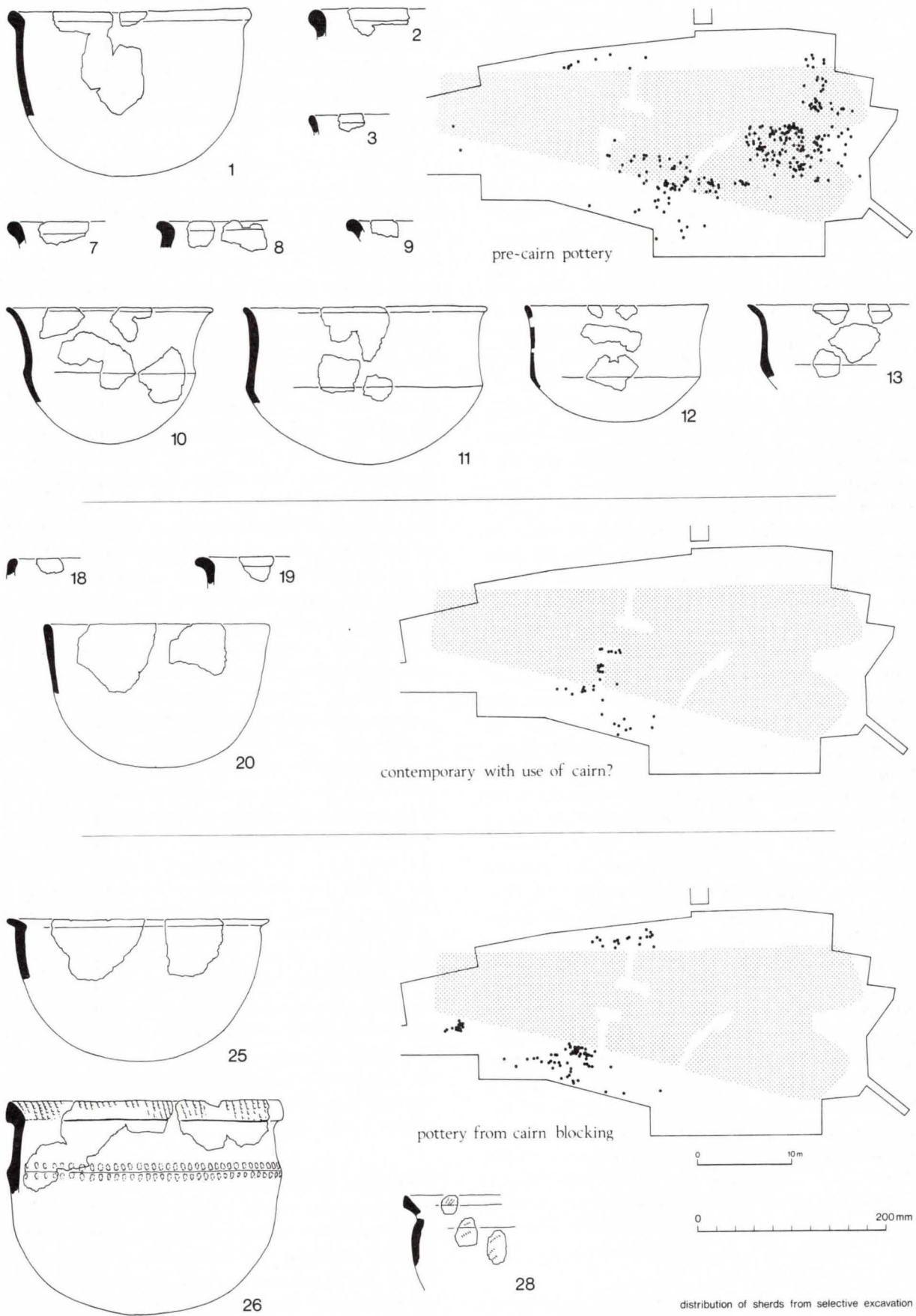


Fig. 43. Summary of pottery phasing. ($\frac{1}{8}$)

Ardudwy but does not have the aerated, coke-like texture of Gwernvale. This compact vesicular ware with small surface holes is found on several sites in Breconshire and in Glamorgan where it is often used to make deep hemispherical bowls which at Gwernvale have added grits. This ware (approximating to Fabric 3) is found at the nearby Severn-Cotswold tomb of Ty-isaf (Grimes 1939) and Penywylod, Talgarth (present volume), and in non-funerary contexts at Llanelwedd (excavations by C. J. Spurgeon) and Y Gaer, Gwernyfed (Savory 1958, 66-67), both also in Breconshire. The Severn-Cotswold tomb on the Gower, Parc le Breos Cwm, has produced rims in this fabric (Lynch 1976, 73), which has also been found at the settlement beneath the Bronze Age barrow at Nottage, Glamorgan, there used in pots with broad Abingdon-style rims (Savory 1952).

The heavy rim, especially the truly rolled rim, is the distinguishing feature of the second stylistic strand which can be recognized amongst the pre-cairn pottery from Gwernvale. Pot 1 is very characteristic, a deep, unshouldered bowl with a prominent thick rim. The fabric (Fabric 1) is smooth and partly vesicular, but is sparsely tempered with quartz grit. There are no shoulder sherds in this ware, nor in the other gritted fabrics, so it is probable that pots 1-6 all shared this simple bag-like shape. The best comparison for these simple bowls is to be found amongst pottery from the chambers at Ty-isaf where this shape is predominant (there is only one shouldered sherd in the collection) and where the rolled rim may be matched in detail (Grimes 1939). The form is also found at Tinkinswood (Ward 1915 and 1916), a Severn-Cotswold tomb in Glamorgan, and again at Parc le Breos Cwm and Llanelwedd where the fabric is more akin to the Gwernvale shouldered bowls. This style, which has notable associations with Severn-Cotswold tombs in Wales, has been linked with the southern English Abingdon Ware (Lynch 1969, 171) and the material from Gwernvale would tend to reinforce, rather than diminish, this suggestion. Moreover, new finds from south-west Wales are now revealing that this 'English' style was rather more significant in the region than was previously imagined (Carreg Coitan excavated by Sian Rees, and Stackpole Warren by D. Benson). In England plain bowls such as these have been found at Windmill Hill, Wiltshire, in early enclosure contexts (Smith 1965, 53) and a vessel with a slightly more developed rim comes from Eyford Long Barrow (Crawford 1925, 196). Maiden Castle, Dorset, also has several very similar forms (Wheeler 1943, especially fig. 26, 7), emphasising the wide distribution of the style.

The fact that at Ty-isaf, Llanelwedd, and Parc le Breos Cwm these bag-shaped pots are made in the compact vesicular ware that at Gwernvale is predominantly used for shouldered bowls, and that Gwernvale pot 7 has a well-rolled rim, though it is made in a vesicular fabric, suggests that the two

strands, eastern and western in origin, had by 3000 bc become comfortably entwined in this part of south-eastern Wales, easily accessible along its river valleys from either direction. This duality is reflected also in the structures—the rectangular building with its analogues in west and north Wales and Ireland, and the stone tomb with its counterparts lying to the south-east.

The interval between the abandonment of the settlement and the construction of the tomb is not established by radiocarbon dating, but the stratigraphic sequence of timber structures beneath the northern horn of the cairn and within the forecourt would suggest that it was not a very long one. The comparisons which can be drawn between the unshouldered bowls amongst the pre-cairn pottery at Gwernvale and the material inside the chambers (period of use) at Ty-isaf and other tombs of this class (Lynch 1976, 73) would tend to support this view. It has already been shown that the predominance of shouldered bowls in the pre-cairn material at Gwernvale can have little or no chronological significance, but it might be possible to argue that their presence in direct association with unshouldered bowls is indicative of a settlement, since the two forms are rarely found together in funerary contexts. Where the unshouldered bowls are common, as at Ty-isaf and Tinkinswood for instance, there are only two or three sherds indicating the presence of shouldered bowls. This observation, for which I have to thank Mr Darvill, might be relevant to the interpretation of the structures beneath the cairn.

The absence of certain evidence for shouldered bowls amongst the pottery associated with the use and subsequent blocking of the Gwernvale tomb is the most notable difference between the two assemblages. Fabrics 1 and 3, predominant in the earlier groups, are rare later, and new fabrics (nos. 5-7) were introduced. The material from the final blocking, as might be expected, shows the most marked contrast, in that it includes decorated ware in the Ebbsfleet and Peterborough styles. These differences, however, may be attributed to the passing of time and the changing of fashion, rather than any replacement of communities. The earlier changes are certainly those that might be expected within a stable group; the introduction of decorated pottery (and perhaps the impetus to close the tomb) might indicate a stronger influence from outside.

The pottery associated with the use of the tomb (nos. 18-24) as we have seen above is the least satisfactory from the point of view of its stratification, largely because of later disturbance to the chambers. Chamber 2 was alone in containing any surviving pottery contemporary with the use of the tomb. Some sherds were found on the surface of the buried soil within the chamber and passage, but a high proportion of those thought to belong to this phase was found mixed throughout an earthen fill whose origin is obscure. Some of the sherds from outside the cairn have been

placed in this group because of their similarity to those from inside the chamber, but because of disturbance they can provide no firm information about the way in which pottery was used in the funerary rituals.

The sherds attributed to this phase form the smallest group by weight and although seven vessels have been identified, only one pot (no. 20) can be reconstructed with confidence and the majority have no distinctive features at all. Only pot 19 is really similar to the earlier material; it has the compact vesicular fabric (Fabric 3) and a wide everted rim. It would not be out of place amongst the pre-cairn pottery. On the other hand it is closely comparable in both shape and fabric to pots from the chambers at Ty-isaf and one from Eyford Long Barrow (Crawford 1925, 196). The most complete pot from this context, pot 20, is made of a rather soft, gritless ware which can also be matched at Ty-isaf and has been placed by Mr Darvill in fabric group 3. It has a well-tooled outer surface which has tended to flake off. This tooling is the nearest thing to burnishing found in Gwernvale and a similar tendency to flake longitudinally can be seen on some of the well-tooled sherds at Ty-isaf. The fabric of pot 26 (Fabric 6) may also be compared with that at Ty-isaf where this hard, thin ware with medium grits just breaking the surface is very common. The other fabrics are less easy to parallel; pot 22 from the filling of Chamber 2 might conceivably be Bronze Age, but it is a bit soft for an urn; pot 23 is more definitely Neolithic. Pot 18 and the fragment of pot 21 are in a distinctive but unusual fabric (Fabric 5), and neither is very securely stratified. The fabric is a very compact grey ware containing a lot of very small chert grits which produce a smooth but abrasive surface. The rim of pot 18 is simple and the body-sherds suggest a plain hemispherical bowl. This hard compact fabric is unusual in a Neolithic context, but is not unknown. It may be found, for instance, at Llanelwedd (excavations by C. J. Spurgeon) where it is associated with pottery like that from the pre-cairn settlement at Gwernvale. It might also be compared to some less closely dated material from Lligwy tomb, Anglesey (Lynch 1969, 157-59), and from the settlement beneath the barrow at Sant-y-Nyll, Glamorgan (Savory 1960).

Pot 20 is the only vessel in this group of which an appreciable quantity survives. This might suggest that it should more properly be associated with the blocking processes since quite large sections of pots 25 and 26, which were certainly involved with those rituals, have been found. Although the fabric may be compared with some found at Ty-isaf and to Gwernvale Fabric 3, the shape is unusual. Such a very plain pot is rare except amongst Hembury Ware, and in Wales the shape is known only at Clegyr Boia (Williams 1952), there in a corky fabric of Irish Sea type. However it may be that pots of this shape are difficult to recognize where only small sherds survive.

The pottery from Chamber 2 and its associated sherds has little internal consistency and cannot be usefully discussed as a group. It is possible to find parallels within the local Neolithic material and none of it calls for elaborate comment. The Breconshire tombs at Pipton (Savory 1956), Penywyrld, Talgarth (present volume) and Pen-y-wyrld, Llanigon (Vulliamy 1922*a*), Ffostill North and South (Vulliamy 1921 and 1923) and Little Lodge (Vulliamy 1929) produced very little pottery; only one or two sherds at most were found with the bones in the chambers. The chambers at Ty-isaf, on the other hand, contained quite a lot of pottery, at least thirteen pots being represented, some by quite large pieces (Grimes 1939). Since Chambers 1 and 3 at Gwernvale had been completely cleared one cannot know the original quantity, though Gwernvale would seem to be closer to Ty-isaf in this respect than to other tombs in the group.

The pottery associated with the blocking of the chambers (nos. 25-31) comprises seven pots which may be divided into three groups—each of which appear to be associated with a separate chamber blocking. Pots 25 and 26 survive in some quantity and were found on the surface and in pits directly outside the entrance to Chamber 2 and beneath the blocking. The quantity and size of the sherds suggests a deliberate deposition in the course of closing ceremonies. Pot 27, a single rim-sherd, comes from a context shared by pot 26 but may be residual since it is made in Fabric 1. Pots 28 to 30 were found amongst the various layers of blocking in front of the entrance to Chamber 3. All the sherds are very small and little of each pot survives and it could be suggested that their presence here is accidental, being incorporated in soils brought in for the blocking. Pot 31 was found outside the assumed entrance to Chamber 4.

This later pottery shows some marked contrasts in fabric, shape, and decoration to the earlier material. This applies to all three contexts although they may not be strictly contemporary. Sherds of pots 26 and 27 are associated with a radiocarbon date of *c.* 2440 bc, and pots 25 and again pot 26 with a date of *c.* 2640 bc (see Table 6 on page 152 and Appendix II). In spite of the fact that the two dates are just statistically distinguishable, it is considered that the pottery and the activity they represent could have been contemporary (p. 88). The blocking of the other chambers, however, could have slightly predated or post-dated this horizon.

Pot 25, which is stratigraphically closely related to pot 26, is the least remarkable. It is made in a hard gritless ware (Fabric 2), not unlike much of the material from under the cairn, though more loosely corky. It may be distinguished, however, by its surface treatment, having been wiped both inside and out by something that looks like grass. The rim form cannot be exactly matched, but it is not remarkable and the general shape is obviously similar to that of much earlier pots.

The other main pots in this group (pots 26, 28, 30, 31) are all fairly sparsely tempered with relatively large quartz grits which break the surface. Mineralogically the components of the clay and temper are similar to Fabric 1, but the size of the quartz grains varies. The difference between Fabric 6 and 7 (pots 26 *etc* and pot 28) lies in the use of unmetamorphosed quartz in Fabric 7, but all have a variable red/black colour which suggests a method of firing different from that of the earlier vessels. Pots 26 and 28 are also decorated, a feature not seen before. Pot 26, with a heavy overhanging rim and a shoulder cordon, is decorated in a stab-and-drag technique, while 28, a lighter pot with a slightly club-shaped rim, is decorated with whipped-cord maggot impressions.

Both fabric and decoration are typical of the Ebbsfleet/Peterborough series. The shape of pot 28 can be matched several times amongst the Ebbsfleet Ware of southern England. Pots from Windmill Hill (Smith 1965, fig. 31), West Kennet (Piggott 1962, fig. 11), and Burn Ground (Grimes 1960, fig. 30) are particularly close. Pot 26, however, is rather less typical of the Peterborough family in shape, though the stab-and-drag decoration is very characteristic. In shape it is more reminiscent of some of the well-known pots from Abingdon (Leeds 1927). Peterborough Ware in Wales, as in other regions peripheral to its main distribution, is often more consistent in decoration and fabric than in shape. It is not common in Wales but its distribution in the northern coastal area and Anglesey, in the Severn Valley and in south-east Wales and along the southern coast, is echoed in several later Neolithic trends which seem to have an 'English' or eastern origin. Peterborough series pottery has been found in Anglesey at Trefignath (recent excavations by Dr C. A. Smith), Bryn yr Hen Bobl (Hemp 1935*a*, figs. 2 and 3) and Castell Bryn Gwyn (Wainwright 1962, fig. 16), a possible henge. Along the north coast, similar material has come from Llandudno, Rhuddlan (unpublished) and Gop Cave (Dawkins 1901) where it was associated with flint and a jet slider of the northern English type. In the Marches it has been discovered at the Breiddin (excavations by C. R. Musson), Abergavenny (Probert *et al.*, 1968, 170-71), and now at Gwernvale, while it has been found along the south coast as far west as Caldey (Lacaille and Grimes 1961, 38-39).

At Gwernvale, a laterally-chambered Severn-

Cotswold tomb, this pottery is associated with the final blocking, thus marking a *terminus ante quem* for the monument. In the Cotswolds it is interesting to note, as Mr Darvill points out in a study to be published shortly (Darvill 1982, 22-25, and forthcoming), that pottery of this family is closely associated with primary contexts in the transepted tombs. For instance, at Nympsfield (Clifford 1938) an early Ebbsfleet bowl (Smith and Childe 1954, 227; Smith 1968, 27) actually came from among the stonework of the cairn; a rather similar situation was found at Burn Ground (Grimes 1960, 48), though the pot is more developed than those from Nympsfield and Gwernvale. The association of this pottery with the end of Gwernvale and the early stages of Nympsfield tends to support the view originally advanced by Corcoran (1969), that laterally-chambered tombs should not be considered a late development from the terminally transepted group, but may rather be an early element in that complex tradition.

The overall pattern of pottery use at Gwernvale, therefore, conforms well to the model already established for tombs of this laterally-chambered class—the construction and use of the tombs belonging to a time when Abingdon Ware was the prevailing style, and its closure to a period when decorated vessels of the Peterborough family were in use. The pottery from beneath the cairn is of particular interest because it reveals a duality of influence in the make-up of the Breconshire Neolithic community, with strands from both east and west already well integrated by 3000 bc. The main similarities which can be drawn between this pottery and that from Ty-isaf is in no way surprising, but the recent recognition of the typical heavy-rimmed unshouldered bowl here and at Llanellwedd to the north and as far west as Pembrokeshire is beginning to show the extent of the 'English' influence in the less immediately accessible parts of South Wales during the Middle Neolithic. The comparison with Llanellwedd also demonstrates a cultural uniformity in pottery which links the Black Mountains area with its conspicuous monumental burial traditions to a region further north where such practices are unknown—another indication of the multiplicity of independent cultural strands which may contribute to any prehistoric community even at a relatively early date in the Neolithic period.

3. A study of the Neolithic pottery fabrics from Gwernvale

by *T. C. Darvill*

Fabric groups and descriptions

A macroscopic examination of all the Neolithic pottery from Gwernvale was carried out in order to identify and quantify the range of fabrics present.

Since the sherds had already been placed into groups representing putative vessels, this system was followed. A check was made to ensure that all the

fragments assigned to a particular pot could legitimately belong to it—within the latitude of variability that is expected with Neolithic ceramics. All the vessel groups were accepted, and a total of seven fabric types were defined. The following table briefly describes each of these in terms of their most distinctive components.

In order to characterize each fabric in more detail, and to assess the likely sources of the clays used, a representative sherd from each of the fabric groups was thin sectioned for examination under a conventional petrological microscope (slides now housed in the Department of Archaeology, Southampton

Fabric 1 (slide no. N252). Very fine-grained anisotropic clay matrix containing the following component minerals; angular and sub-angular quartz grains commonly less than 0.3 mm across, but ranging up to about 0.7 mm across; large pieces of orthoclase feldspar, one fragment of which is 0.7 mm across; a light scatter of muscovite mica flecks up to 0.08 mm long; several small opaque fragments of iron ore. Set in this matrix is a sparse scatter of angular metamorphosed quartz fragments up to 1.5 mm long and probably added to the clay to improve its quality for potting.

During macroscopic examination of the sherd from which the slide was made a small piece of carbonized material, possibly chaff, was noted protruding from a void in the fabric core. Since the pot surfaces have a slightly pitted appearance it is likely that similar material had also been present in the outer zones of the fabric as well. The presence of fragments of grog noted during the macroscopic examination of this group was confirmed in the thin section, although its fabric is similar to that of the rest of the sample.

Fabric 2 (slide no. N253). Fine-grained anisotropic clay matrix containing numerous flecks of colourless mica up to 0.18 mm long, and occasional slightly rounded quartz grains up to 0.2 mm across. Tempering added to the matrix had entirely disappeared since the pot was made, leaving behind an extremely vesicular fabric. The voids can be seen quite clearly in a fresh break and are frequently ingot or rhomboid in shape and up to 0.75 mm long. They are visible in thin section as white angular shapes.

It is impossible to be certain what this tempering was; although crushed calcareous rock such as calcite is one possibility, the absence of any traces of decomposed rock may suggest that organic material is more likely. In general the fabric is friable and laminated and shows differential firing conditions over the surface and through the core.

Fabric 3 (slide no. N256). This fabric resembles Fabric 2 in many ways, but it contains significantly fewer voids, which are also less regularly shaped and much smaller in size (being only rarely greater than 0.5 mm long). The material used for tempering was probably the same, however. The clay matrix also differs in respect of the quartz grains which are greater in density, angularity, and size (up to 0.75 mm across). The surface pitting is greater in Fabric 2, as might be expected, and taking all the attributes into account, a separate origin should be thought of.

University; vessels from which sherds were selected are indicated in the tables above, and details of slide numbers are given below). The following fabric descriptions provide a summary of the salient features noted in thin section, although an attempt has also been made to select distinctive features which can be seen with the aid of a hand lens as well. It must be emphasised that in all cases analysis proceeded on the assumption that the sherds used were totally representative of the fabric groups as a whole. Macroscopic descriptions of colour and texture of each group have not been attempted because of the wide variations displayed.

Fabric 4 (slide no. N251). This is a fine-grained fabric containing fragments of finely-crushed grog (rarely exceeding 1.5 mm across), which have an even finer fabric. A sandstone fragment 2 mm long was noted in thin section, which from the size and angularity of the quartz grains and the thick 'cement' surrounding them is probably Old Red Sandstone. Small fragments of metamorphosed quartz up to 0.6 mm across also occur, but whether these and the sandstone fragments were deliberately added to the clay or whether they occur in it naturally is unknown. The clay matrix contains a scatter of small ground quartz grains mostly under 0.09 mm across, together with flecks of colourless mica up to 0.9 mm long (but mostly less than 0.1 mm), and occasional garnet minerals.

Fabric 5 (slide no. N250). The dominant feature of this fabric are the chips of chert which are evenly distributed through the matrix and which can be easily seen macroscopically. They are visually up to 1.5 mm long and often have slightly rounded edges. The clay matrix contains a high density of quartz grains (*c.* 20%) up to 0.6 mm across, and occasional small fragments of plagioclase feldspar, biotite mica and fine flecks of colourless mica. In hand specimen this fabric is very distinctive because of its hard grainy texture and grey colour.

Fabric 6 (slide no. N255). This is a very hard black fabric distinguished by an abundance of metamorphosed quartz fragments as much as 3.5 mm across, which dominate the field of view in thin section, and were clearly added to the clay. The fine-grained anisotropic clay matrix contains small quartz grains up to 0.09 mm across and colourless mica flecks up to 0.03 mm long. A small rock fragment composed of several plagioclase feldspars was also noted, but is too small for accurate classification.

Fabric 7 (slide no. N254). This fabric is characterized by a light scatter of large quartz fragments occasionally up to 5 mm across, but predominantly in the range 0.9 mm–2 mm. The fragments do not seem to be metamorphosed, and are generally slightly rounded and occasionally heat crazed. Quartz also occurs as a light scatter in the ground-mass, but these grains are only up to 0.08 mm across, and there is a clear break in the size distribution between those grains which are present naturally in the clay and the larger ones which have been added. The matrix also contains a heavy scatter of colourless mica flecks which give the fabric a golden colour in thin section when between crossed polars.

FABRIC GROUPS AND THE VESSELS ASSIGNED TO THEM

<i>Fabric</i>	<i>Description</i>	<i>Vessel nos.</i>
1	fine metamorphosed quartz tempering	1, 2*, 3, 4, 5, 6, 27, 31
2	coarse organic/calcareous tempering	7, 8, 9*, 23, 25
3	sparse organic/calcareous tempering	10*, 11, 12, 13, 14, 15, 16, 19, 20, 22, 29
4	sandstone and grog tempering	17*
5	chert tempering	18*, 21
6	large metamorphosed quartz tempering	24*, 26, 30
7	sparse, large quartz tempering	28*

* denotes thin-section from sherd attributed to this vessel

Correlation between fabric groups, phases, and vessel forms

Allowing that there is some uncertainty in the precise phasing of several of the vessels (particularly in the case of those considered to be contemporary with the use of the tomb), an analysis of the pots attributed to each phase and the fabric groups to which they belong nevertheless reveals some interesting correlations between the fabric groups, the site phases, and vessel types. The first of the following tables shows what proportion of the total weight of each fabric group is present in the main site phase, and the second shows what proportion they form of the total weight of sherds in each phase.

PERCENTAGE OF TOTAL FABRIC WEIGHT PRESENT IN EACH PHASE

<i>Period</i>	<i>Fabric Groups</i>						
	1	2	3	4	5	6	7
<i>Pre-cairn</i>	73	20	85	100			
<i>Use of cairn</i>		9	14		100	8	
<i>Blocking</i>	27	71	1			92	100
Total %	100	100	100	100	100	100	100

PERCENTAGE OF FABRIC AS PART OF THE TOTAL WEIGHT OF SHERDS IN EACH PHASE

<i>Period</i>	<i>Fabric Groups</i>							<i>Total %</i>
	1	2	3	4	5	6	7	
<i>Pre-cairn</i>	22	7	69	2				100
<i>Use of cairn</i>		16	53		17	14		100
<i>Blocking</i>	11	38	1			46	4	100

It is clear that there is some variation in the fabric types present in each of the three stratigraphic groups of pottery, although there may also be some evidence for the continuity of potting traditions between the different phases. There is also some correspondence between fabric types and vessel forms. Thus in the pre-cairn assemblage, the simple bowls with heavy rims (pots 1-6), which as Frances Lynch has shown have general affinities with the Abingdon style, are

predominantly in Fabric 1 (containing fine metamorphosed quartz tempering), whereas the carinated vessels (pots 10-16) are in the finer vesicular fabric, Fabric 3. Interestingly, between the two fall a series of vessels in Fabric 2—a coarser version of Fabric 3—which have heavier and more elaborate rims reminiscent of the simple hemispherical bowls (pots 7-9), but which may all belong instead to shouldered vessels. Fabric 4 (with grog tempering) is restricted to the pre-cairn phase, where it forms the smallest proportion by weight, and is only represented by one vessel of uncertain form (pot 17). Fabric 3 is the most predominant fabric group in the pre-cairn phase, which together with Fabric 1 is found predominantly in that phase.

Fabrics 2 and 3 are again represented in the assemblage considered to be contemporary with the cairn, together with the chert tempered Fabric 5, and Fabric 6 which has large metamorphosed quartz tempering. Fabric 3 again dominates in this phase by total weight, followed respectively by Fabrics 5 and 2. The only sherds of Fabric 2 belong to pot 23, which cannot be reconstructed. Fabric 3 is represented by pots 19 and 20 which are both probably simple round-bottomed bowls—the use of this fabric perhaps suggesting that they were the products of potters who previously (or contemporaneously) made the shouldered vessels of Grimston/Lyles Hill type in the pre-cairn phase. The sherds of pot 22 which are also in this fabric cannot be reconstructed. The second heaviest group of sherds in this phase are the distinctive ones belonging to pots 18 and 21 in Fabric 5, a chert tempered fabric which is confined to this phase. The lightest group of sherds in this phase is from pot 24 in Fabric 6, a small vessel of uncertain shape.

Fabrics 1-3 and 6-7 are found in the latest assemblage. Fabric 6 predominates over the other fabric groups here by the weight of sherds, followed by Fabric 2. Both of these groups also predominate in this phase over any other in terms of the total weight—probably because of the large surviving bulk of pots 25 and 26. Fabric 1 is represented by pots 27 and 31, neither of which can be reconstructed. Fabric 2 is represented by pot 25—a round-bottomed bowl with a heavy rim which has affinities with the pre-cairn pottery at the site. Fabric 3 is represented by pot 29 which is of unknown form. The predominant group, Fabric 6 (containing large metamorphosed quartz tempering), is represented by pots 26 and 30. The shape of the latter is uncertain, but pot 26 is the distinctive 'Peterborough' vessel. Fabric 7 (containing unmetamorphosed quartz tempering) is interestingly not only confined to this phase but also to pot 28, the Ebbsfleet bowl.

Possible sources and affinities of the fabrics

The range of minerals and rock fragments present in the fabrics from Gwernvale are neither very great nor very distinctive, but it is probable that a number of different sources of clay were used. Most of the

inclusions are present in the Devonian rocks in the Crickhowell area, but since these outcrop over an extensive area of South Wales and the Borderland it does not necessarily preclude the transportation of pottery from some distance away. Minor inclusions such as the garnets in Fabric 4 and plagioclase in Fabric 6 are probably unhelpful in narrowing the source areas due to the possibility that isolated grains and chips of rock could become accidentally incorporated in the potting clay during manufacture. The presence of chert in Fabric 5 may also be misleading in view of the fact that chert and flint-working debris could have been used for tempering (*cf* Darvill in Saville 1979, 78).

The use of metamorphosed quartz as a deliberate additive to the clay is clearly a major trait of the Gwernvale pottery and may suggest the use of local clays. As we have seen above, however, the use of larger grains in greater quantity is confined to the later assemblages, and even though pot 26 may be of local character the tempering must be taken as evidence of familiarity with Peterborough traditions elsewhere in Britain. The use of *un*metamorphosed quartz in Fabric 7 is significantly restricted to pot 28, typical of the Ebbsfleet style in England, suggesting perhaps that it alone may have been brought to the site from a more distant source.

The vesicular fabrics, 2 and 3, are also found in each of the main site phases, suggesting some continuity in potting over the whole period, regardless of the styles of pottery currently being manufactured. It has been suggested that organic material might have been added to the clay—possibly

chopped straw, chaff, or even dung—since although calcareous rock fragments are another possibility, the soil conditions were evidently not too acidic for the preservation of some human and animal bone at the site. Whereas the natural components of the clay itself may again be of local origin the technique of applying organic tempering to clays can be found much further afield. Sherds with organic tempering have been recognized at several sites of the Early and Middle Neolithic in Britain: at Fengate, for instance, most of the Early Neolithic pottery seems to fall into this class (Pryor 1974, 8), while at Windmill Hill (*pers. comm.* I. F. Smith) and at Hambledon (Darvill, manuscript report) smaller proportions are present. Organic tempered pottery was used extensively in the Linear Pottery cultures in Europe, in ceramic traditions which are most probably ancestral to those in Britain, and where Hulthen (1977, 49) has stressed its importance from the point of view of pot technology.

Thus as well as reflecting purely cultural traditions, it should be borne in mind that the fabrics adopted for different pottery styles may be due to wider functional and technological considerations. A cooking-pot for instance which has to withstand rapid and continuous changes in temperature may require a different fabric to a vessel intended to keep liquids cool by allowing just the right degree of evaporation through the vessel walls. Since not all clays are of equal quality for potting it may be necessary to add some substances or to remove some existing components to achieve these results, and to render them more usable for potting.

THE LITHIC INDUSTRIES

by Elizabeth Healey and H. Stephen Green²⁷

Introduction

The lithic assemblage from the site is essentially a mixed one, incorporating the products of various distinct industries over a period of about 8,000 years from the Late Upper Palaeolithic to the Bronze Age. The great majority of finds were recovered from the buried soil beneath the cairn, but the absence of any stratigraphic separation between the waste material and tools belonging to different ages imposes great

difficulty in analysing each of the industries in detail. In this report, therefore, following a brief survey of the types of artefact present, an attempt is made to isolate those components belonging to each of the periods represented. One point which is particularly noteworthy is that only a very small proportion of the material is seen to be contemporary with either the construction or use of the chambered tomb itself.

²⁷ We would like to acknowledge the assistance given by R. Bevins, P. Berridge, S. Briggs, C. Clayton and R. M. Jacobi during the preparation of this report.

The following types of artefact are represented:

<i>Cores</i>	79
<i>Un-retouched flakes, blades, etc</i>	950
<i>Backed blades</i>	7
<i>Microliths</i>	56
<i>Unfinished microliths</i>	2
<i>Microburins</i>	10
<i>Notched flakes and blades</i>	5
<i>Burins</i>	23
<i>Truncated blades</i>	10
<i>Scrapers</i>	53
<i>Knives</i>	13
<i>Axe fragments</i>	9
<i>Leaf arrowheads</i>	24
<i>? Oblique arrowhead</i>	1
<i>Barbed-and-tanged arrowheads</i>	2
<i>Awls and piercers</i>	10
<i>Ground-edge pieces</i>	12
<i>Fabricator</i>	1
<i>Splintered stone</i>	1
<i>Bifacially flaked implements</i>	2
<i>Miscellaneous retouched flakes and blades</i>	210

The use of wet-sieving upon deposits within a restricted area beneath the cairn and within the forecourt (fig. 36), has clearly resulted in the much higher recovery rate of certain forms—notably microliths (64% from wet-sieving), leaf arrowheads (66%), and small spalls and chips of flint (of which there are over 12,000)—and has clearly had a marked influence on both the size and content of the overall assemblage. Although the distribution of certain types (fig. 58), does in some instances suggest different focuses of activity, it should be borne in mind that these too have been influenced by the state of preservation in different parts of the site, which is clearly not uniformly stratified, and by the different means of recovery adopted in these different areas.

Raw materials

Flint, chalcedonic chert, black ?Carboniferous chert, igneous rock, and possibly quartzite and quartz, have all been exploited.

Flint. All the flint artefacts are in a fresh, unrolled condition, although much is patinated (the most heavily patinated pieces being the backed blades, nos. 18-24), and a large proportion is burnt. At least three different kinds of flint are distinguishable on the basis of quality, colour, and type of cortex. It is difficult to quantify the amounts of each type present, but they can be listed in their relative frequency as follows:

- 1 *Blue-black or grey in colour* (covering a great range), often mottled, and with fresh cortex. By far the most abundant type of flint present.
- 2 *Light grey or whitish in colour*, often stained, and with water-rolled cortex. Only used for a small number of artefacts.

- 3 *Light brown or brown-grey in colour*, flint of high quality, with fresh cortex. Only used for a small number of artefacts.

The general quality of the flint and its relatively small size indicates that most of it was obtained from secondary sources: the condition of *type 1* suggests an origin in boulder clay, and that of *type 2* in gravel deposits. Much more study and fieldwork needs to be undertaken before a proper appraisal can be made of the sources available for lithic industries in Wales, but amongst the nearest documented ones must be ranked coastal and inland gravel desposits in the Cardiff area and in the Vale of Glamorgan (Dutton 1903, 111), and that from boulder clay in the northern Cotswolds (Tyler 1976, 4; Charlesworth 1957, 77). Flint of the better quality *type 3* (similar to flint from Beer Head in Devon) is significantly very largely restricted to some specialized Neolithic implement types, including three polished axe fragments (nos. 196-98), and fragments of three ogival leaf-shaped arrowheads (nos. 206-08); other tools include a burin (no. 108), presumably of Mesolithic date, and a scraper (no. 170). No cores of this type of flint were recovered, and it seems probable that, in contrast to much of the other flintwork from the site, these items at least were imported as finished tools. There are a small number of other flakes of a similar material, but like the polished fragments, these may have resulted from the re-working of axes. No other certain chronological distinctions in the use of different types of flint can be made.

Chalcedonic chert. A relatively small amount of this material is present at the site. Artefacts made from it include a Late Upper Palaeolithic penknife point (no. 18) and other blades which might belong to a similar industry (nos. 25-27), a microlith (no. 55) and a microburin (no. 87). In addition there are a further ten blades and ninety-four spalls (*eg* no. 28) weighing a total of 62 g. The use of this chert in Wales appears to be very limited: similar material, sometimes referred to as 'Cretaceous chert', is present in Upper Palaeolithic industries from Nanna's Cave on Caldey Island and at Cathole on the Gower peninsular, and in Mesolithic industries at Barry and Welsh St Donats in the Vale of Glamorgan (Healey 1982), at Frainslake on the Pembrokeshire coast and at Craigy-Llyn in the Glamorgan uplands (Jacobi 1980*b*, 175, 195). There is no certain Neolithic use of the material in Wales. No specific source is known (and, anyway, several discrete types of raw material may be involved), although Jacobi has suggested that its origins are coastal (Jacobi 1980*b*, 195).

Black ?Carboniferous chert. The use of this material is confined to two microliths (nos. 40 and 64), although it is not certain that the origin of the material is the same.

Igneous rock. One axe fragment and two flakes (nos. 199-201) are the only items of igneous rock; no. 199

has been thin-sectioned, and this is described as a fine-grained siliceous crystal tuff, of undetermined provenance (Appendix IV). The two smaller flakes appear to be of a similar rock.

Quartzite. A single burin, no. 100, appears to be made of quartzite.

Quartz is present as flakes and chips. The material is a component of the local Old Red Sandstone, and the pieces present may be simply the result of natural fracture.

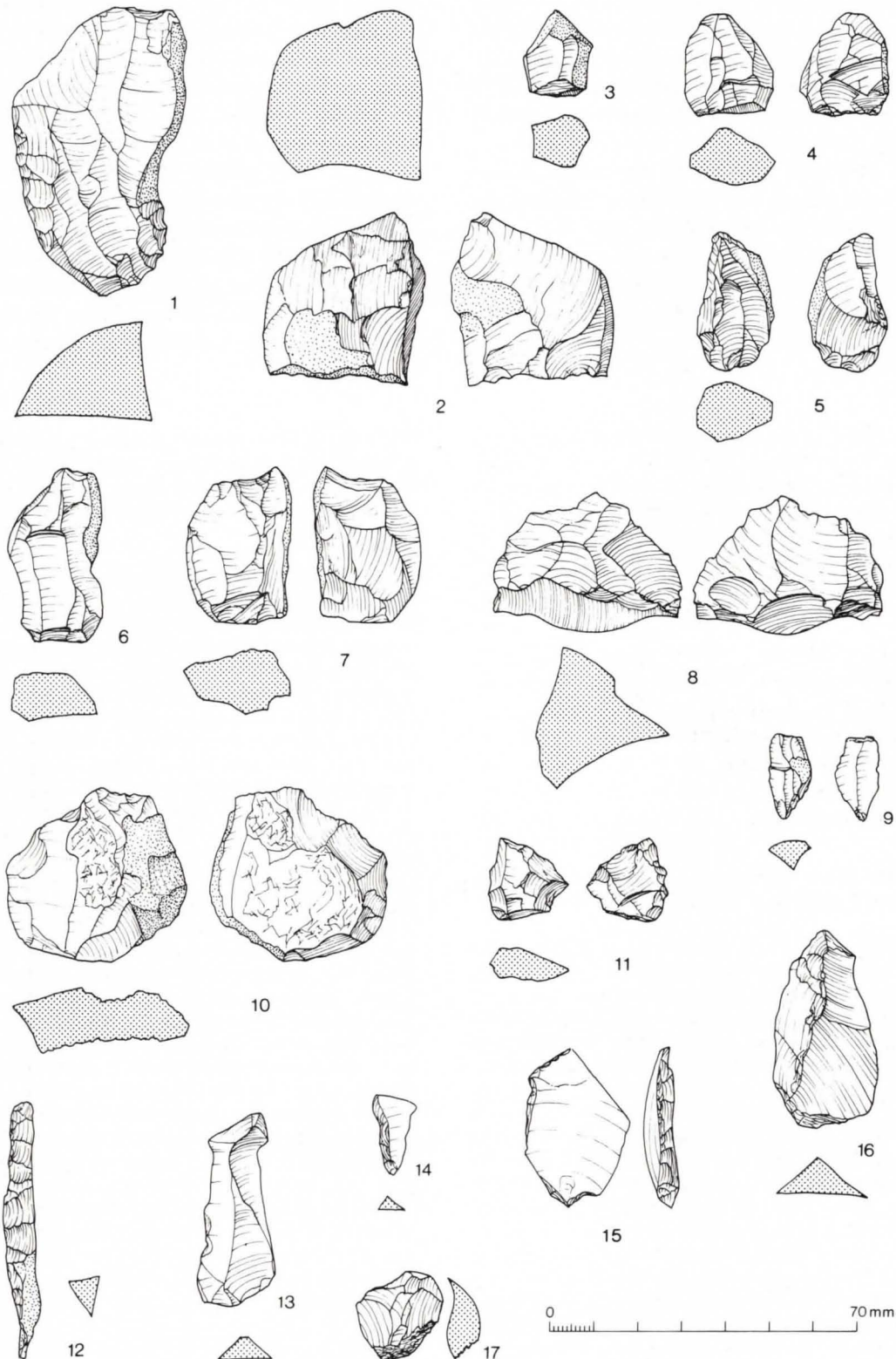


Fig. 44. Cores (nos. 1-11), core rejuvenation flakes (nos. 12, 14-16), plunging or *outré passé* flake (no. 13), 'trimming' flake (no. 17). ($\frac{2}{3}$)

Technology

In spite of the mixed assemblage evident at the site, rather than simply adopting the conventional approach of considering cores, 'waste material', and tools as isolated categories, an attempt is made to take all the evidence from each category as a whole into account in order to achieve a broader understanding of the technology of the industries represented (*cf* Tixier *et al* 1980, 41).

All the raw materials appear to have been worked by flaking, at least initially. Although no flaking tools were found, the use of hard hammers is suggested by wide striking-platforms and prominent bulbs of percussion, and the use of soft hammers by shattered butts and punctiform and linear platforms—especially some with lipped edges and small, diffuse bulbs of percussion as well as feathered edges to the flakes (*cf* Newcomer 1971, 88-90, figs. 8-12). Six flakes, and a single blade core have evidence of grinding on the platform edge, which may represent a device used to prevent a punch or pressure flaking tool from slipping.

Cores (fig. 44, nos. 1-11). The seventy-nine cores from the site, all of flint, show a considerable range of form. Complete examples are classified as follows, primarily on the type of flake removed, and secondly on the form of the core—thus combining the quasi-geometric approach of Clark (Clark *et al* 1960, 216), and the more functional approach of Green (1974, 84):

platform type and position	Removal types			flakes
	blades	blades and flakes	flakes	
<i>single platform</i> (Clark A1)	1		5	6
<i>platforms at right-angles</i> (Clark B3)	1?		1	2
<i>opposed platforms</i> (Clark B1)	5	9	2	16
<i>globular or amorphous</i> (Clark C)	1?	9	18*	28
	8	18	26	52

* includes 2 sub-discoidal cores; a further 27 cores are unclassifiable

Most of the cores are of globular form, with very few belonging to Green's class of specialized cores (Green 1974, 84). Geometric blade cores are very rare, nos. 1, 6, and 9 (fig. 44) being exceptional examples. About a third of the cores produced relatively long narrow flakes and have been worked in a regular geometric way. A similar picture of the industry is given by the removals (fig. 44, nos. 12-17, fig. 45). Of the fifty-two complete cores, forty-three have been flaked on three or more surfaces, while only three have flakes detached from only one face. Most of the cores are exhausted and small in size: over 80% are less than 17 g in weight, and about 50% are less than 10 g, with a range overall of 2-128 g. Maximum dimensions (taken along the flaking axis) vary between 13-64 mm, with a mean of about 30 mm, but the presence of larger removals retouched as tools, and larger core rejuvenation flakes (*eg* fig. 44, nos. 12, 15-16), indicates that some were originally larger. Some cortex remains on nearly 70% of the cores, reflecting their small original size. In only two instances were the cores utilized or modified into tools following exhaustion: no. 1 is a blade core retouched as a scraper, and in another instance a core has been re-used as a hammerstone. Trimming on

In the production of tools, secondary retouch has been achieved largely by direct percussion and by retouch on an anvil (*cf* Tixier 1974; Green 1980, 32), and a number of spalls can probably be attributed to these techniques. The presence of microburins and notched blades indicates that at least some of the microliths were manufactured by the technique of notching and snapping blades, and a number of long narrow spalls are probably the products of burin manufacture. The final working on the Neolithic and Bronze Age arrowheads has been executed by flat pressure-flaking, which is extremely fine in some instances. Neolithic axe fragments of flint and igneous rock have been ground and polished, and the presence of a *polissoir* (for grinding, polishing or sharpening) within the cairn (fig. 60; pl. 26a), suggests that this technique was carried out, at least in part, at the site. Worn areas on some blades thought to be part of the Mesolithic tool-kit (nos. 234-44), seem likely to have been caused by wear during use rather than by deliberate grinding.

the edge of the striking platform was practised, but although this has often been interpreted as a retouched scraper edge, experimental knapping has shown it to be usually no more than pre-striking platform preparation.

Blades. At least fifty blades have been identified, of which about a half have been retouched or utilized. Of the twenty-four un-retouched examples, all except one are broken. Because of breakage or modification by retouch, criteria for distinguishing blades from other flakes are somewhat subjective, but essentially all have a length to breadth ratio of 2 : 1 or greater, and have more or less parallel sides and regular thickness. The comparative rarity of blades (with a frequency of less than 10%), blade-cores, and core-tablets, suggests that the industries were not primarily concerned with blade production. Fine prismatic blades of chalcidonic chert (*eg* fig. 46, nos. 25-26) are exceptional, and are thought to be part of the Upper Palaeolithic tool kit.

Flakes and spalls. Flakes are defined as pieces struck from a core, with a length of 20 mm or more and with a length to breadth ratio of less than 2 : 1, while those with a higher ratio, but lacking other blade characteristics have been termed blade-like flakes or flake-blades. Spalls are considered as flakes less than 20 mm in length. In practice only complete or nearly complete flakes can be identified with confidence, and from the total assemblage only ninety-five complete un-retouched flakes are present with a further seventy substantially complete. By contrast, there are more than 200 spalls and 470 unclassifiable fragments. The spalls are usually plain, and appear to have resulted from platform preparation or from spontaneous retouch. Some have traces of flake beds on their dorsal faces and seem to be products of deliberate retouch. The spalls come almost exclusively from sieved deposits. The majority of flakes has not been retouched, although this need not imply that they were unused.

Core-rejuvenation flakes (fig. 44, nos. 12-17). Flakes in this category have been struck in the following ways: parallel or almost parallel to the surface of the main core striking-platform (sixteen examples, *eg* no. 15)—approximating to core-tablets, although none are of the classic type; along the

edge, to renew the angle between the striking-platform and the core face (thirty-two examples, *eg* no. 12), or finally, to remove a keel (1 example, no. 16). Plunging or *outré passé* flakes, of which there are nineteen examples (*eg* no. 13), are often described as core-rejuvenation pieces (*eg* Clark 1954,

100), but would usually seem better interpreted as accidents of flaking (Tixier 1974, 19). There are also fifty-three 'trimming' flakes which have been struck to remove such anomalies as excessive step-fracturing (*eg* no. 17), or prominent ridges or spurs on the face of the core.

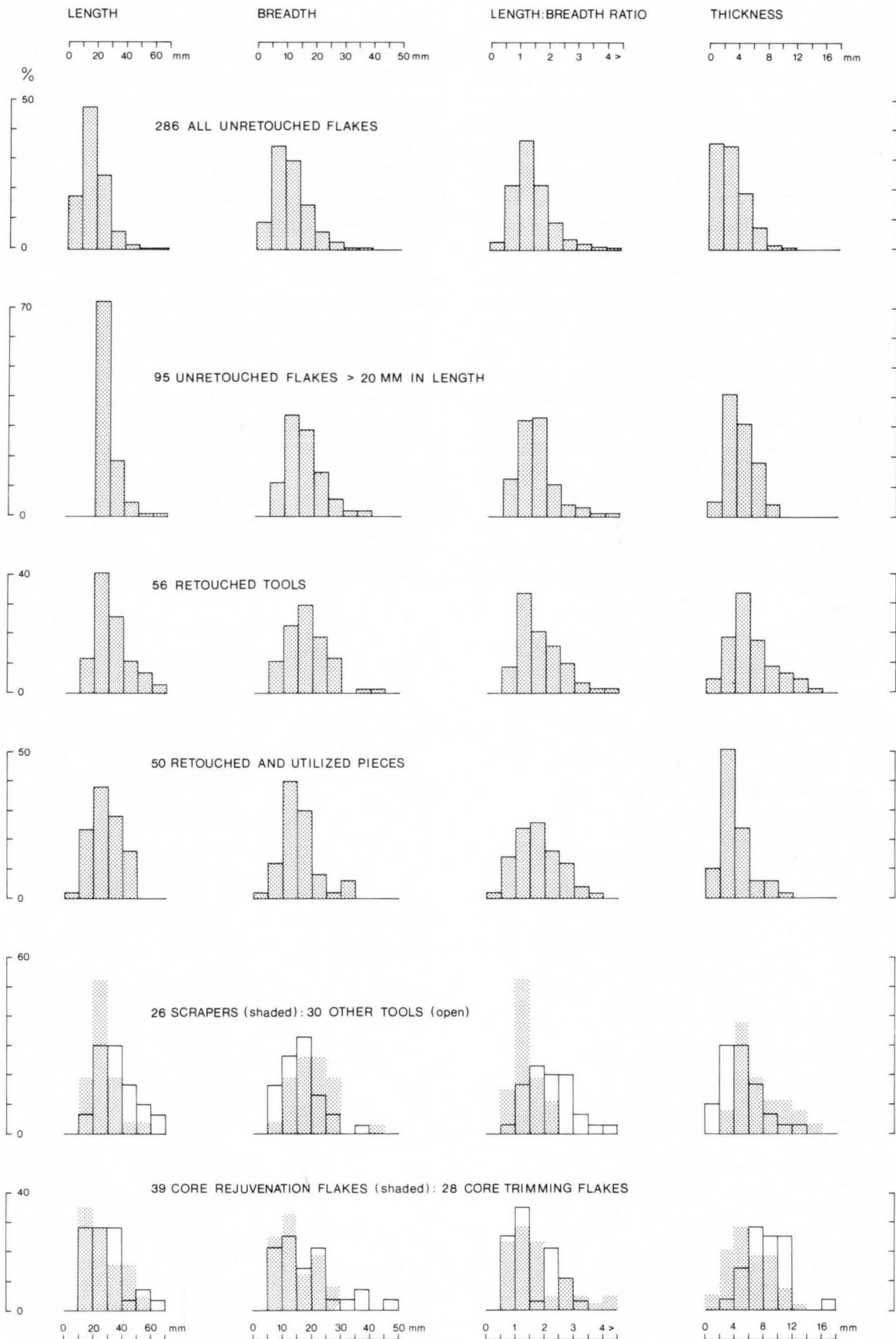


Fig. 45. Diagram illustrating the dimensions and breadth: length ratios of un-retouched flakes, retouched flakes and tools present in the multi-period assemblage at Gwernvale. Measurements are taken as described in Saville (1980).

Occasionally a flake with multi-directional scarring on its dorsal face seems to be renewing the face of the core. The presence of core-rejuvenation pieces confirms that cores went through a number of stages before being discarded.

Although the assemblage of waste material is mixed in date, there is some evidence that a number of different industries are represented. Re-assessment of cores from a number of dated industries confirms the impression that blade production and highly specialized geometric blade cores are characteristic of Mesolithic industries (*eg* Clark and Rankine 1939, 84; Clark 1954, 98; Higgs 1959, 222), that simple, single platform cores and irregular two platform (B2) cores are the more usual form in the earlier Neolithic and persist from then on, that globular or multi-directional cores became increasingly important (particularly 'off the chalk', Saville 1980*b*, 20), and that discoidal cores (of which there are two examples from the site, *eg* fig. 44, no. 10) are characteristic of later Neolithic industries (Saville 1981, 48). The presence of all these types is therefore consistent with the occurrence at Gwernvale of artefact types typical of these various periods. Core-rejuvenation flakes are generally recognized as part of Mesolithic industries, but are less frequently documented in those of the Neolithic period (none for example are described

The virtual absence of true core-tablets, so typical of some blade production industries, corresponds with other evidence suggesting that blade production was largely absent.

from Hurst Fen or Windmill Hill), although this could result from different techniques of flintworking or from non-identification. The examples from Gwernvale of tablet type, and those obviously struck from blade cores have therefore tentatively been ascribed to Mesolithic technology.

The analysis of the dimensions of different categories of utilized and non-utilized pieces presented in figure 45 demonstrates that each has its own metrical characteristics. Only limited conclusions can be drawn from the data, however, bearing in mind that the material is drawn from a multi-period assemblage, and that the numbers involved are relatively small. It is evident that longer thicker flakes were generally selected for retouch and utilization, even though the bulk of the assemblage (over 65%) consists of smaller spalls and flakes. Retouched tools account for only about 9% of the measured pieces, and other retouched and utilized pieces for a further 8%. Within the broad category of retouched tools, preference for particular flake types can be seen amongst scrapers, where in contrast to

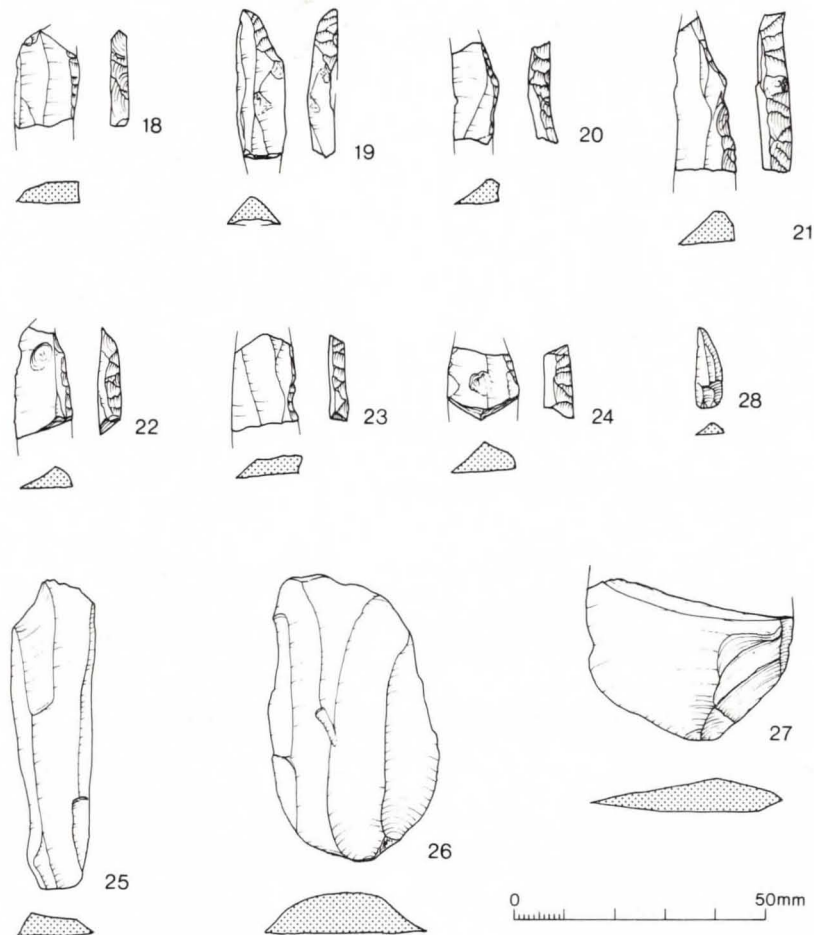


Fig. 46. Backed blades (nos. 18-24), blades and flakes (nos. 25-7) and spall (no. 28) of chalcedonic chert. ($\frac{2}{3}$)

other forms, short, broad, thick flakes were evidently preferred. Core-rejuvenation and core-trimming pieces cover a fairly broad range, but show a marked tendency to be thick. The high proportion of re-touched pieces among the larger flakes suggests that raw material of a suitable size was relatively scarce.

Comparison with other well-studied industries is hampered by the mixed chronology of the Gwernvale assemblage and because of the need to take into account variations in the types and sizes of raw materials being used (Burton 1980, 137). In certain

areas of southern and eastern England it has been possible to show that variations in the size and shape of waste flakes and tools may provide an index of cultural change within industries exploiting primary sources of flint (Pitts 1978a; 1978b; Pitts and Jacobi 1979). It is to be hoped that further work of a similar nature may elucidate the situation in Wales, where flint industries appear to have been based predominantly on smaller sized modules of raw material collected from secondary sources.

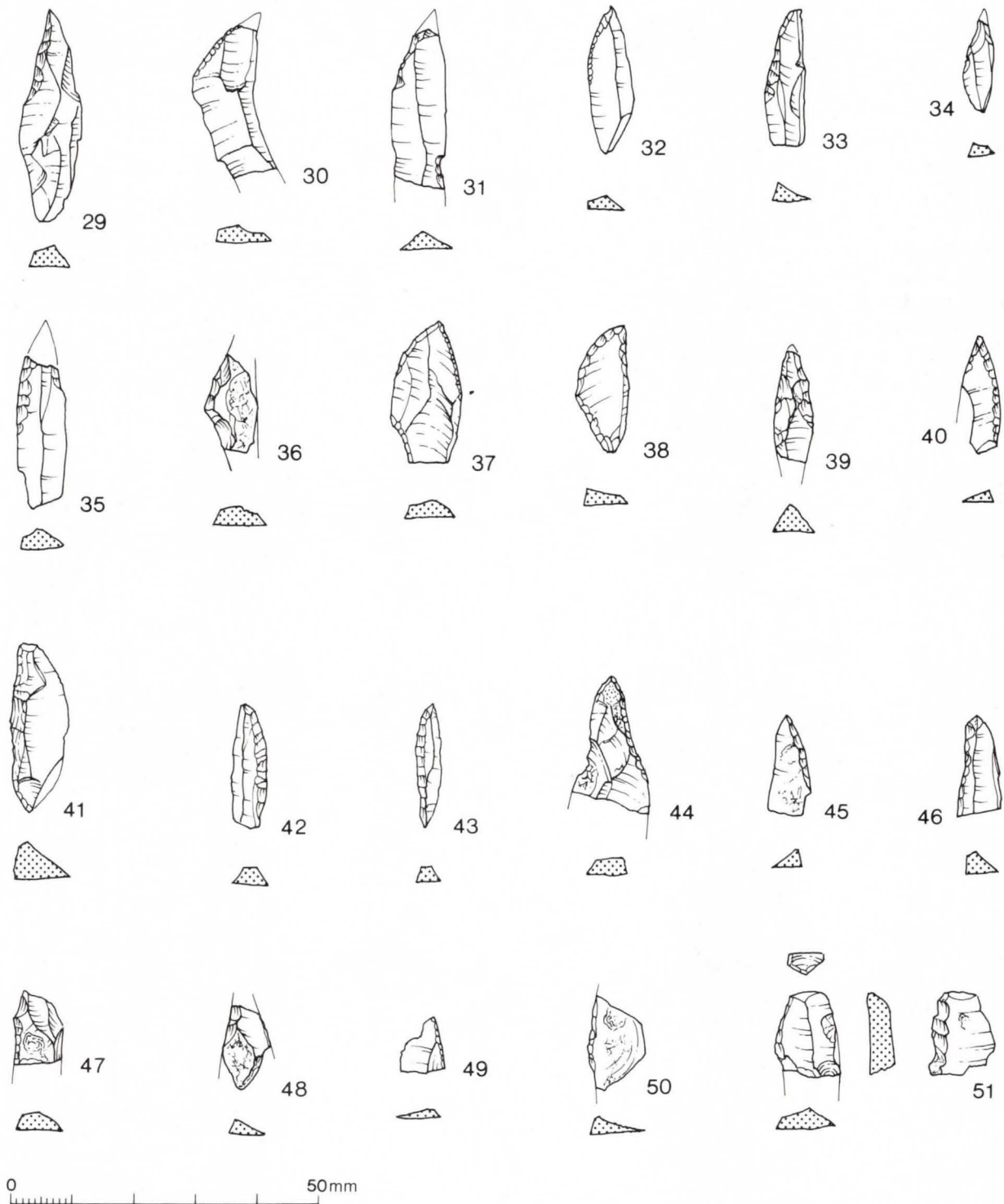


Fig. 47. Broad blade microliths. (†)

Morphology of the retouched pieces

Backed blades (fig. 46, nos. 18-24). Seven backed blades of Late Upper Palaeolithic type were found during excavation, of which four examples came from a relatively limited area of the buried soil within and near the

forecourt of the cairn, and the remaining three from its southern side. They have abrupt retouch on one edge and are readily distinguishable from the microliths by their greater size and thickness. Only no. 18 is sufficiently

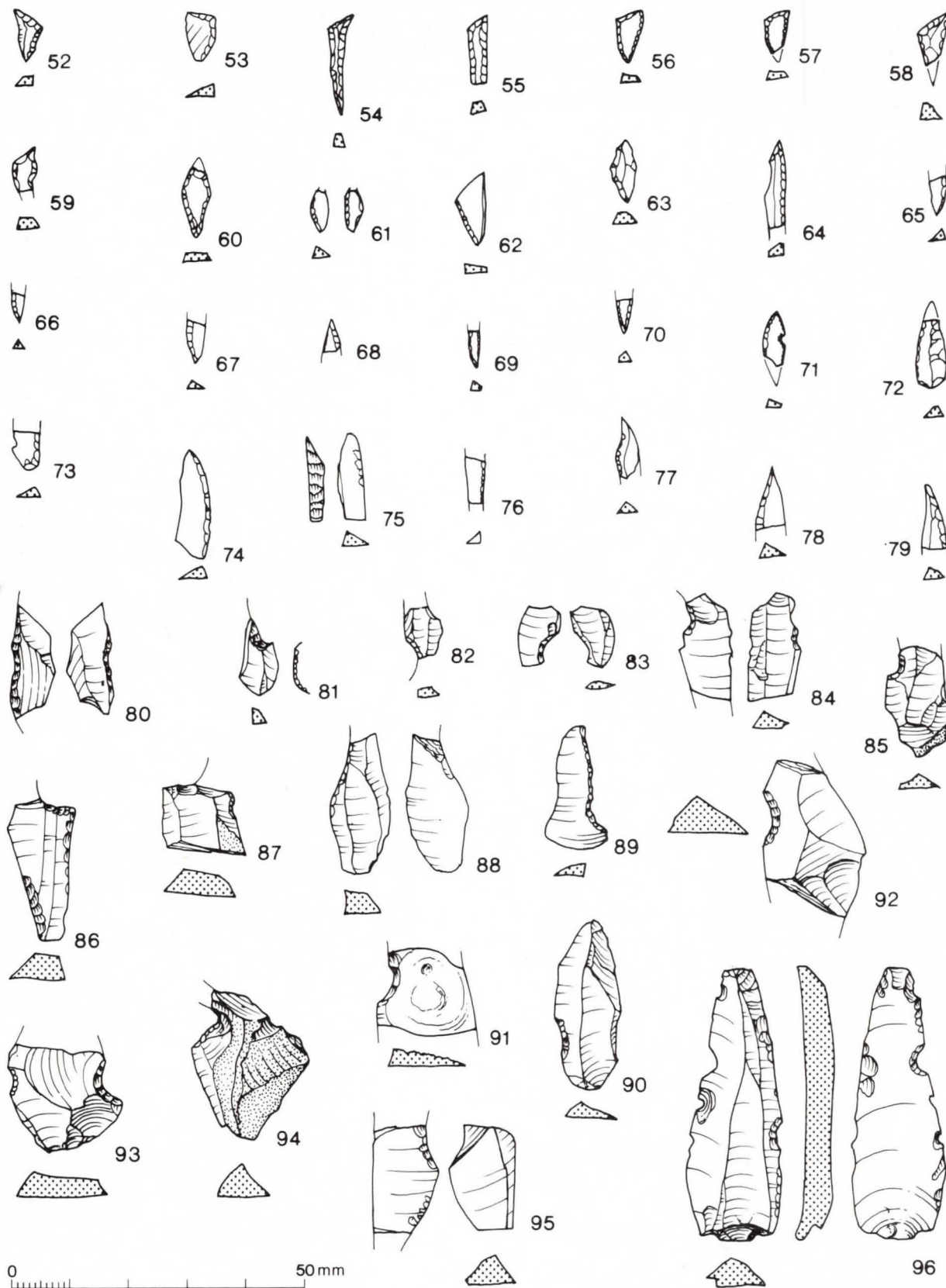


Fig. 48. Scalene micro-triangles and rod-like backed blades (nos. 52-79), unfinished microliths (nos. 88-9), microburins (nos. 80-7, 94-5), notched blades and flakes (nos. 90-3, 96). (†)

complete to be classified according to Campbell's type list (Campbell 1977), and this is a penknife point of type AC23, made from chalcedonic chert. The remainder are backed tools of indiscernible type, and are all made from a patinated grey flint which has become burnt. Other flakes, blades, and spalls made of chalcedonic chert (eg nos. 25-28) may also belong to Late Upper Palaeolithic industry.

Microliths (figs. 47-48, nos. 29-79). A total of fifty-six microliths and microlith fragments are present (five of which are not illustrated) of which twenty-three can be classed as broad-bladed forms (nos. 29-51) characteristic of Early Mesolithic industries, twenty-five as either scalene micro-triangles or rod-like backed blades characteristic of

the Later Mesolithic (nos. 52-64, 66, 68-73, 76), the remaining eleven fragments being unclassifiable. Following Jacobi's classification (Jacobi 1978, 16, fig. 6), five of the broad-bladed forms can be classed as *type 1a* or *1ac* (nos. 29-33), two as *type 1b* (nos. 34-5), and one each as *types 2a* and *3c* (respectively nos. 36, 39), and two as *type 4* (nos. 40, 42) and *type 5* (nos. 41, 43). These are all made of flint with the exception of no. 40, which is of black chert. Of the later forms, two belong to *type 7a1* (nos. 52-53), eleven to *type 7a2* (nos. 54-62, 68-69), and one to *type 7* or *9* (no. 63). All of these are made of flint with the exception of no. 55 which is of chalcedonic chert, and no. 64 which is of black chert.

The great majority of the microliths were concentrated at the eastern end of the site, where over 60% were found

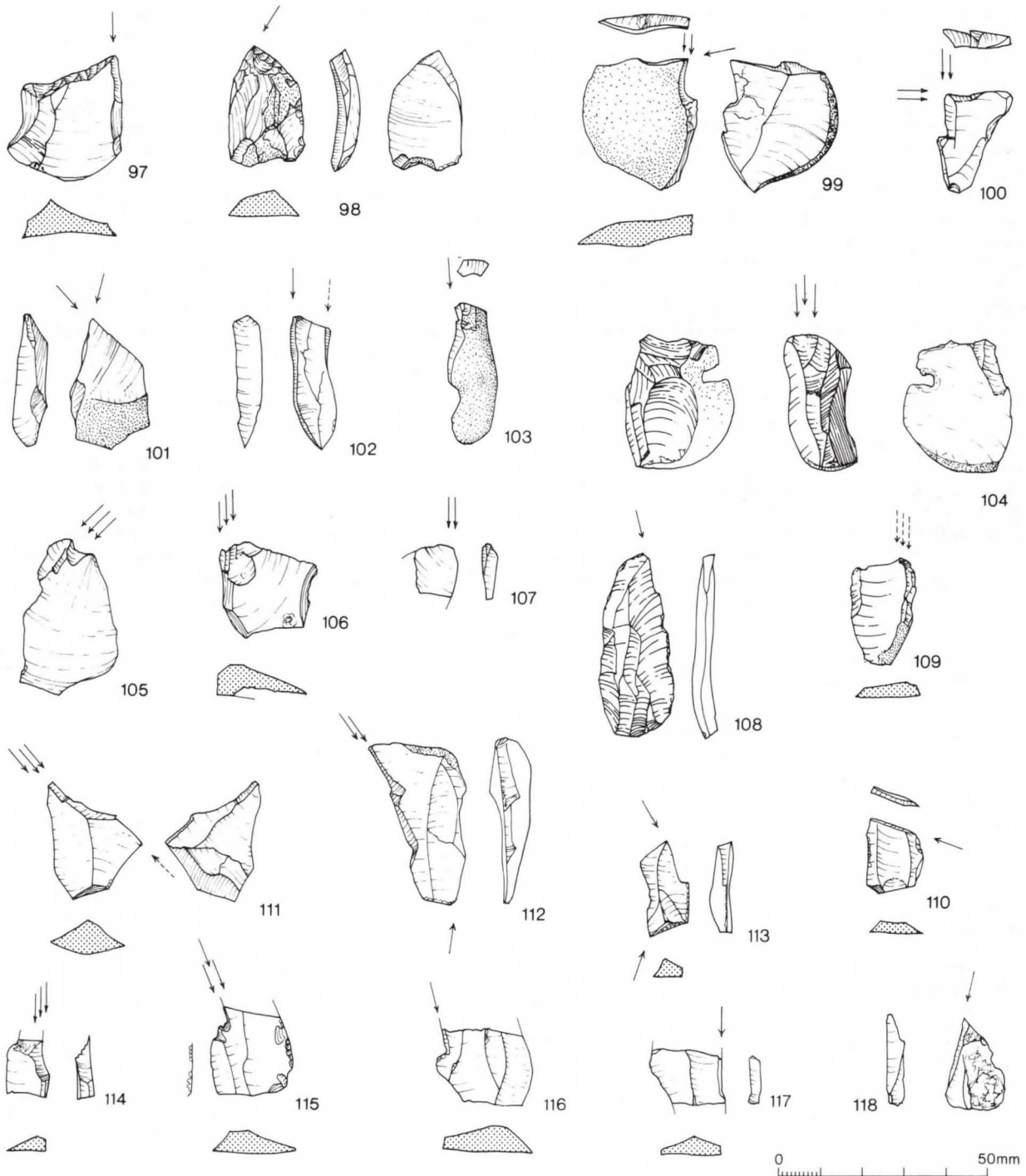


Fig. 49. Burins. (3)

within pre-cairn soil levels or features; but due to mixing and the high probability of residual finds occurring in later features, there is probably little significance to be attached to their precise contexts. However, broad-bladed forms were found in pits F221 and F223 (nos. 43 and 36 respectively), features which, though otherwise undated, may belong to the Neolithic timber structure beneath the northern horn of the cairn. One was found in each of pits F149 (no. 41) and F234 (no. 47), in association with Neolithic pottery, and one in pit F54 (no. 33), which is thought to be contemporary with the cairn. Narrow-bladed types were found in the southern bedding-trench beneath the northern horn of the cairn (F133B, no. 52), and no. 70 also came from pit F221 mentioned above. An unclassified fragment came from one of the postholes of the six-post structure within the forecourt.

Unfinished microliths (fig. 48, nos. 88-89). Two unfinished microliths, both of flint, were not securely stratified.

Microburins (fig. 48, nos. 80-87, 94-95). Of ten microburins, all are made of flint with the exception of no. 87, which is of chalcidonic chert. Their classification, based on Clark (Clark and Rankine 1939, 87) and Brezillon (1968, 129) is as follows: two butt microburins (nos. 82, 86), seven tip microburins (nos. 81, 83-85, 87, 94-95), and one *Kruckowski* microburin (no. 80). Some of the notched blades described below may also be unfinished or un-snapped forms, particularly nos. 90 and 96. Some of the small geometric microliths from the site appear to have been made on small blades, and it would seem that the technique of snapping notched blades may belong to the manufacture of broad-blade microliths. A majority of the microburins came from pre-cairn contexts.

Notched flakes and blades (fig. 48, nos. 90-93, 96). Five flakes or blades have lateral notches, in some instances double and opposed, formed by abrupt retouch within semi-circular areas between 4-10 mm across and 1-2.5 mm deep. All the examples are made of flint, and none are securely stratified. Notched flakes occur in Early and Late Mesolithic assemblages (Clark and Rankine 1939, 76; Higgs 1959, 220) and in Late Neolithic contexts (Alexander and Ozanne 1960, 291), but it is possible that some of the notched blades at least (nos. 90, 96), represent an uncompleted stage in the

manufacture of microliths by microburin technique (*cf* Higgs 1959, fig. 5, nos. 89, 93). Two further blades with worn ends also have lateral notches (fig. 56, nos. 235-36), although in the case of no. 236 the notch is much larger and clearly does not belong to this category.

Burins (fig. 49, nos. 97-118). Twenty-three burins (including one unillustrated fragment) are present. Some of the truncated blades described below may also be unstruck 'retouched-end' type burins. Two examples, nos. 113 and 115, show evidence of edge-strengthening before the removal of the burin-spall. The burins are generally small, with narrow facets (75% being 4 mm or less in width), no. 102 being an exceptionally wide example. Angles vary from 57° to 121°. All the examples are made of flint, with the exception of no. 100 which is possibly made from quartzite. No. 108 is made from a good quality honey-coloured flint which is most similarly matched at the site in several polished axe-fragments and leaf-shaped arrowheads, suggesting that this example, at least, may be of Neolithic date.

Many of the burins are not closely stratified, but two came from pre-cairn pits associated with Neolithic pottery (nos. 97 and 107 from pits F170 and F151 respectively); two came from un-dated pre-cairn pits (nos. 99, 110, from F159 and F231 respectively), and eight others probably all came originally from pre-cairn soil levels (nos. 98, 103-04, 111, 113, 114, 118). One of these examples was found jammed into a crevice within the top of the 'natural monolith' beneath the eastern end of the cairn.

In addition there were twelve long, narrow flint spalls with triangular or quadrangular section, all probably burin-spalls. Seven came from pre-cairn contexts, including one from feature F284, associated with Neolithic pottery. At least nine of them shows scars of earlier facets and are therefore probably renewal spalls. One appears to have been struck from a 'retouched-end' type burin.

Truncated blades (fig. 50, nos. 119-28). These ten blades have either the distal end (eight examples) or bulbar end (two) truncated by abrupt retouch, either transversely (in three cases, nos. 126-28), or obliquely (in seven cases, nos. 119-25). All are made of flint. The function of truncated blades is uncertain, although some examples may be unstruck 'retouched-end' type burins (*eg* no. 127), while

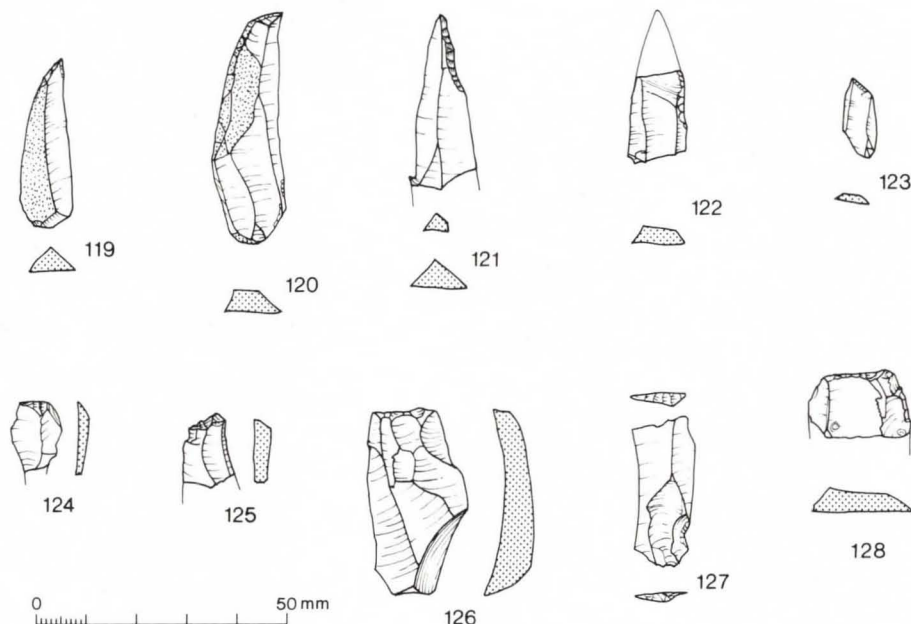


Fig. 50. Truncated blades. ($\frac{2}{3}$)

others tend to grade into the category of straight-ended scrapers.

Of the more closely stratified examples, two came from the later soil accumulation within the forecourt (nos. 123-24), two came from the earlier soil levels within the forecourt (nos. 125, 128), and one came from F133, the southern bedding-trench of the Neolithic timber structure beneath the northern horn of the cairn (no. 120).

Scrapers (figs. 51-52, nos. 129-81). Fifty-three complete or fragmentary flint scrapers were found, all of which are illustrated.

Twenty-eight probably come from pre-cairn contexts: twenty came from the pre-cairn soil (nos. 132-33, 139-40, 142, 148, 152, 156-60, 163, 172-76, 178, 180); five came from the lower soil levels within the forecourt which is probably equivalent to that horizon (nos. 135, 144-45, 161,

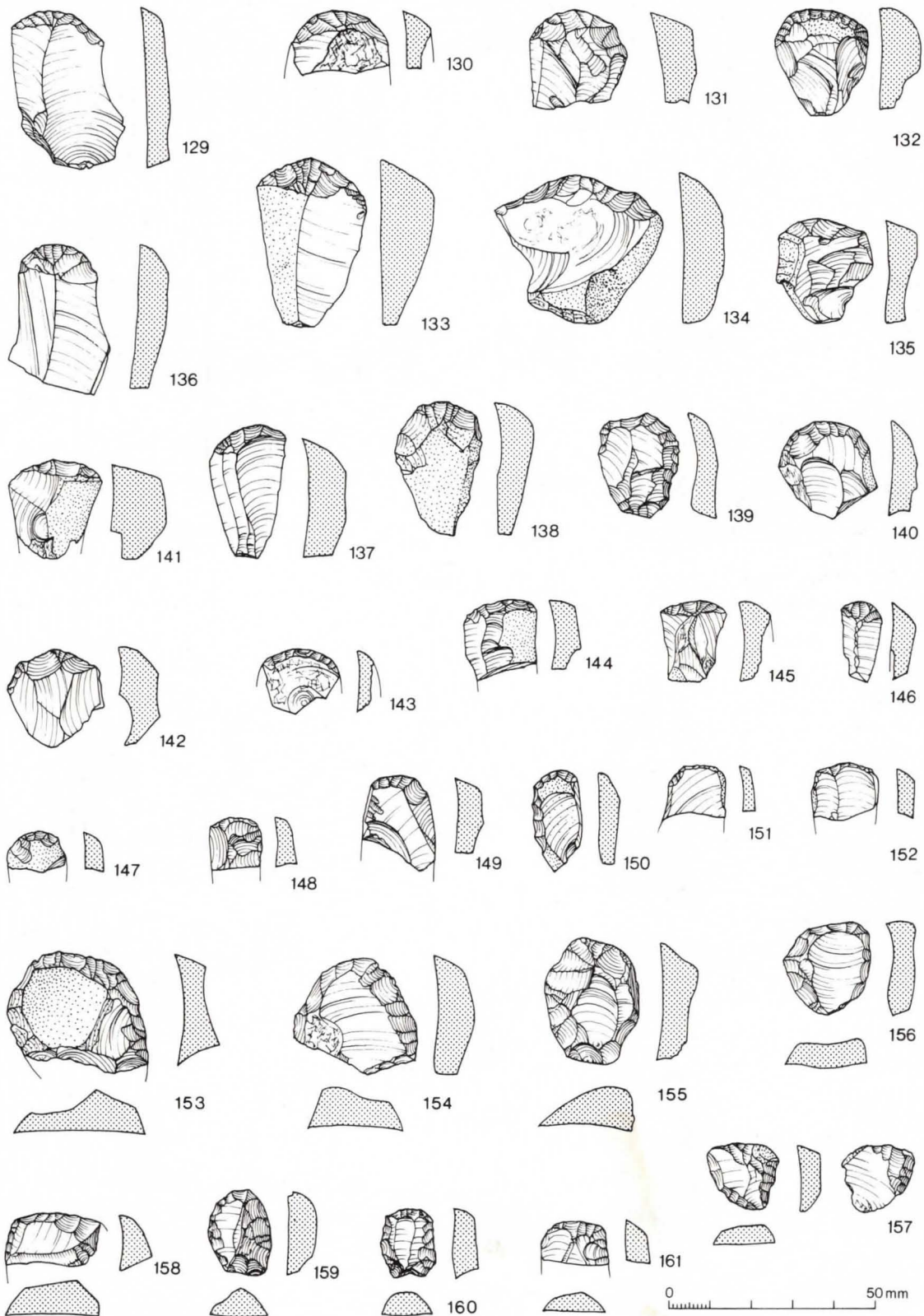


Fig. 51. Scrapers. (2)

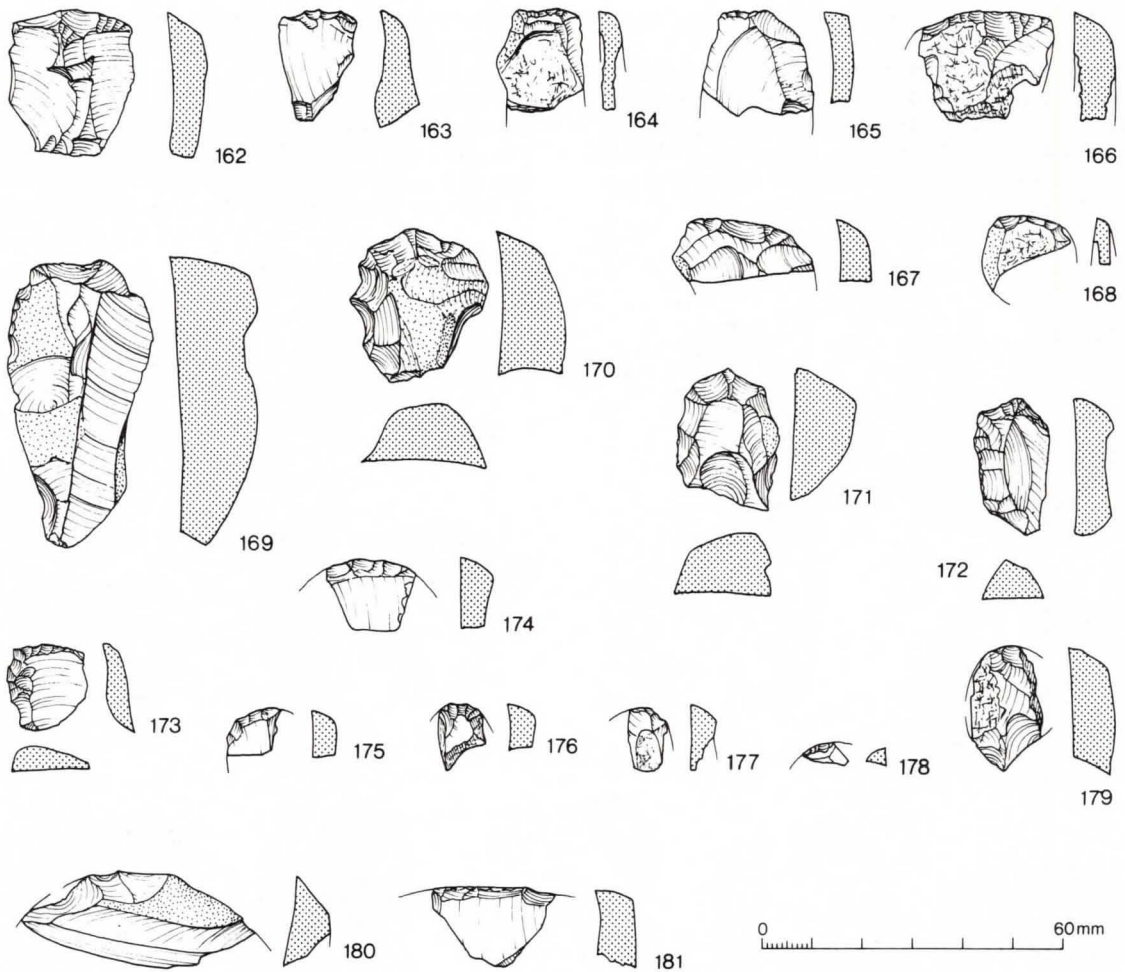


Fig. 52. Scrapers. ($\frac{2}{3}$)

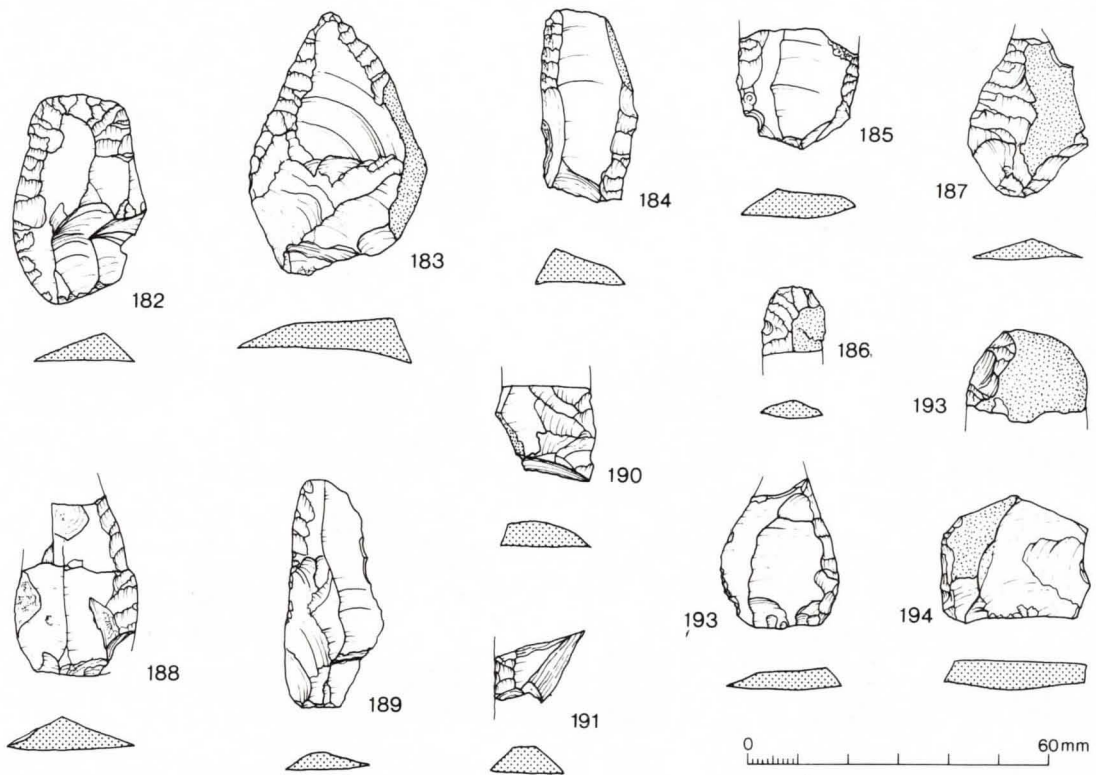


Fig. 53. Knives and edge-dressed flakes. ($\frac{2}{3}$)

167); two came from the southern bedding-trench of the Neolithic timber structure beneath the northern horn of the cairn (no. 138 from F133G, and no. 168 from F133B), and no. 150 came from an un-dated pre-cairn pit (F168). Four examples are possibly to be seen as contemporary with the tomb (although they may be residual): three came from the later soil levels within the forecourt (nos. 147, 151, 170), and no. 149 came from buried soil within the outer passage of Chamber 1. The remaining twenty-one examples are not closely stratified. In view of the relatively small numbers from the site and the obvious presence of various different industries to which they could belong, further analysis of their typology and possible dating is not presented here, beyond observing that the assemblage does include examples which would not be out of place in Early or Late Mesolithic or Neolithic industries. As a whole, it can be noted that the scrapers are very small; about 75% are between 20-30 mm long, over 90% are less than 30 mm in breadth, and more than 80% are less than 10 mm thick. Almost 40% are on cortical flakes.

Knives and edge-dressed flakes (fig. 53, nos. 182-94). Thirteen flint knives or fragments are present. These fall into two

groups—those with scale-flaking (nos. 182-92) and those with only lightly retouched edges (nos. 193-94). No. 192 has abrupt retouch on one edge which forms a back, and flatter retouch on the cutting edge. The scale-flaked knives have flaking on one or more edges, which in the case of no. 183 converges to a point. The two examples with minimal edge retouch are little other than regularly shaped, heavily utilized pieces, no. 194 being made on a core-rejuvenation flake.

No. 182 came from an un-dated pit (F231) beneath the cairn, four examples came from the buried soil beneath the cairn (nos. 185-86, 189, 191), and three further examples (nos. 183, 188, 190) are from places where this soil level had been disturbed. The remainder are all from recent ploughsoil.

Axe fragments (fig. 54, nos. 195-201). Two axe fragments and seven flakes, possibly representing eight axes in all. One fragment and three flakes are of flint (nos. 195-98), two other flint flakes struck from axes comprise one re-chipped to form an awl (fig. 56, no. 228), and another to form an arrowhead (fig. 55, no. 203). The remaining fragments are all of igneous rock: no. 199 has been thin sectioned, and is

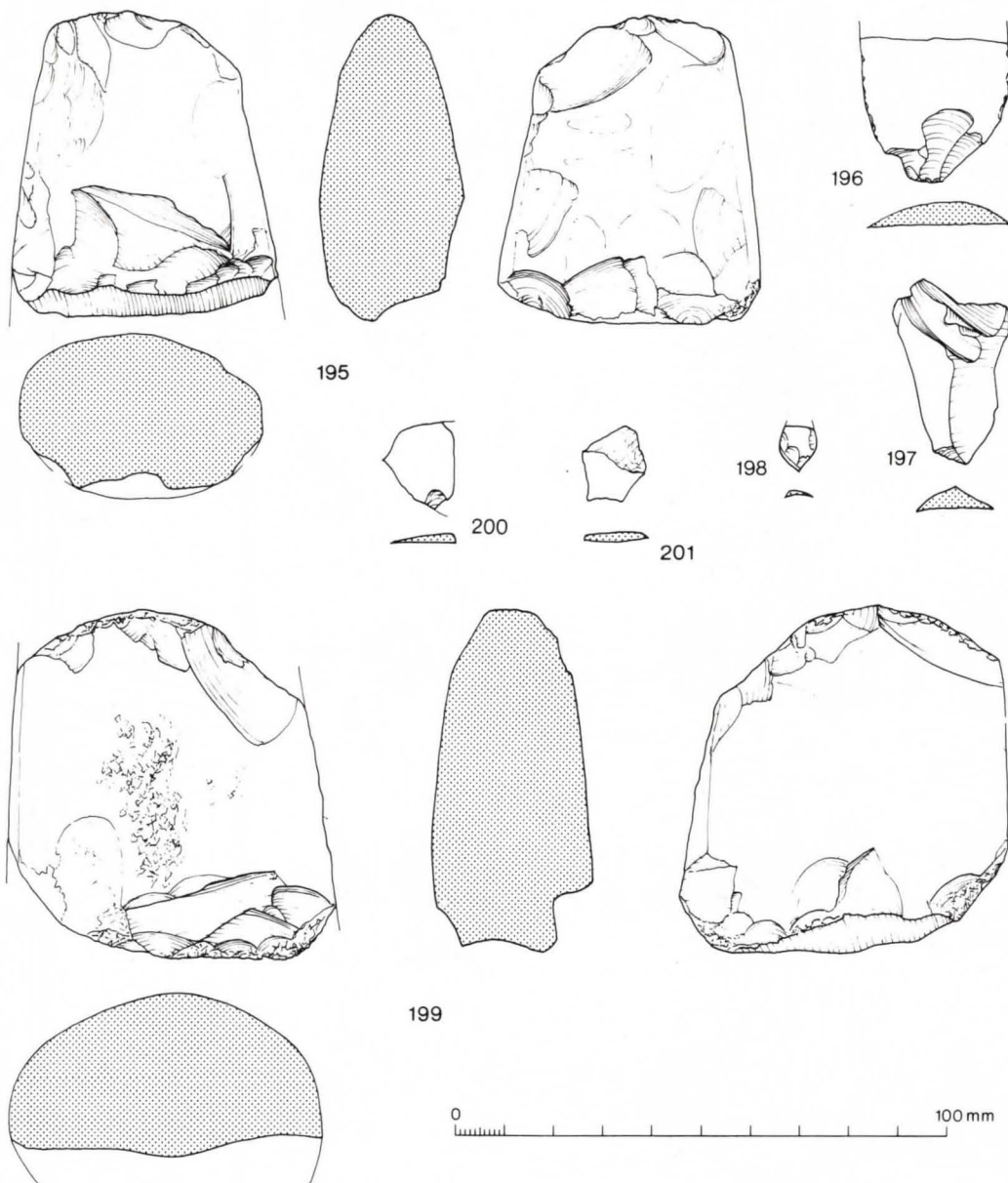


Fig. 54. Polished axe fragments: flint (nos. 195-8), igneous rock (nos. 199-201). ($\frac{2}{3}$)

described as a very fine-grained siliceous crystal tuff, of undetermined provenance (Appendix IV); the other two fragments (nos. 200-01) are also of igneous rock and appear to have been struck from a single axe. All the fragments have been shaped by flaking and finished by grinding. No. 195 has been re-used as a core, and no. 199 as a core, hammerstone, and rubbing-stone. The edges of flake no. 196 have also been utilized. Nos. 198, 199, and 228 (re-chipped to form an awl) all came from the buried soil beneath the cairn. The fragment from the butt of an axe, no. 195, was found in the lower soil profile to the east of the forecourt, but is not closely stratified in relation to the cairn. Three flakes, nos. 197, 200-01, were all found within the later soil levels in the forecourt, and might therefore have been contemporary with the cairn (although there is a possibility that they are residual from the pre-cairn phase).

Leaf-shaped arrowheads (fig. 55, nos. 202-20). Twelve reasonably complete leaf-shaped arrowheads (nos. 202-06, 209-15), and twelve other fragments (nos. 207-08, 216-20, and five not illustrated) were found. Of the more complete examples, following the classification given by Green

(1980), one example belongs to each of *types 1B, 2A, 3A, 3B* and *3Bo* (ogival; nos. 202-06 respectively), and seven belong to *type 4A* (nos. 209-15). Two other fragments, nos. 207-08, also probably belong to medium or large-sized ogival forms. All the arrowheads are of flint, no. 203 being re-chipped from a flake struck from a polished flint axe. It is interesting to note that whereas the remainder of the arrowheads are generally of a grey flint characteristic of the majority of the flint artefacts from the site, all three of the fragments of ogival leaf-shaped arrowheads are of a light brown or light brown-grey flint.

Twenty of the twenty-four examples probably belong to pre-cairn deposits: thirteen pieces came from the buried soil beneath the cairn (nos. 204-05, 208-09, 212, 215, 219-20, plus five unillustrated fragments), and three (nos. 211, 214, 217) came from the lower soil levels within the forecourt which are probably equivalent to that horizon; four other pieces came from pre-cairn Neolithic features—nos. 207 and 216 from the western bedding-trench beneath the northern horn of the cairn (F229), no. 218 from the southern bedding-trench (F133B), and no. 210 from pit F162, associated with pottery. Three of the remaining

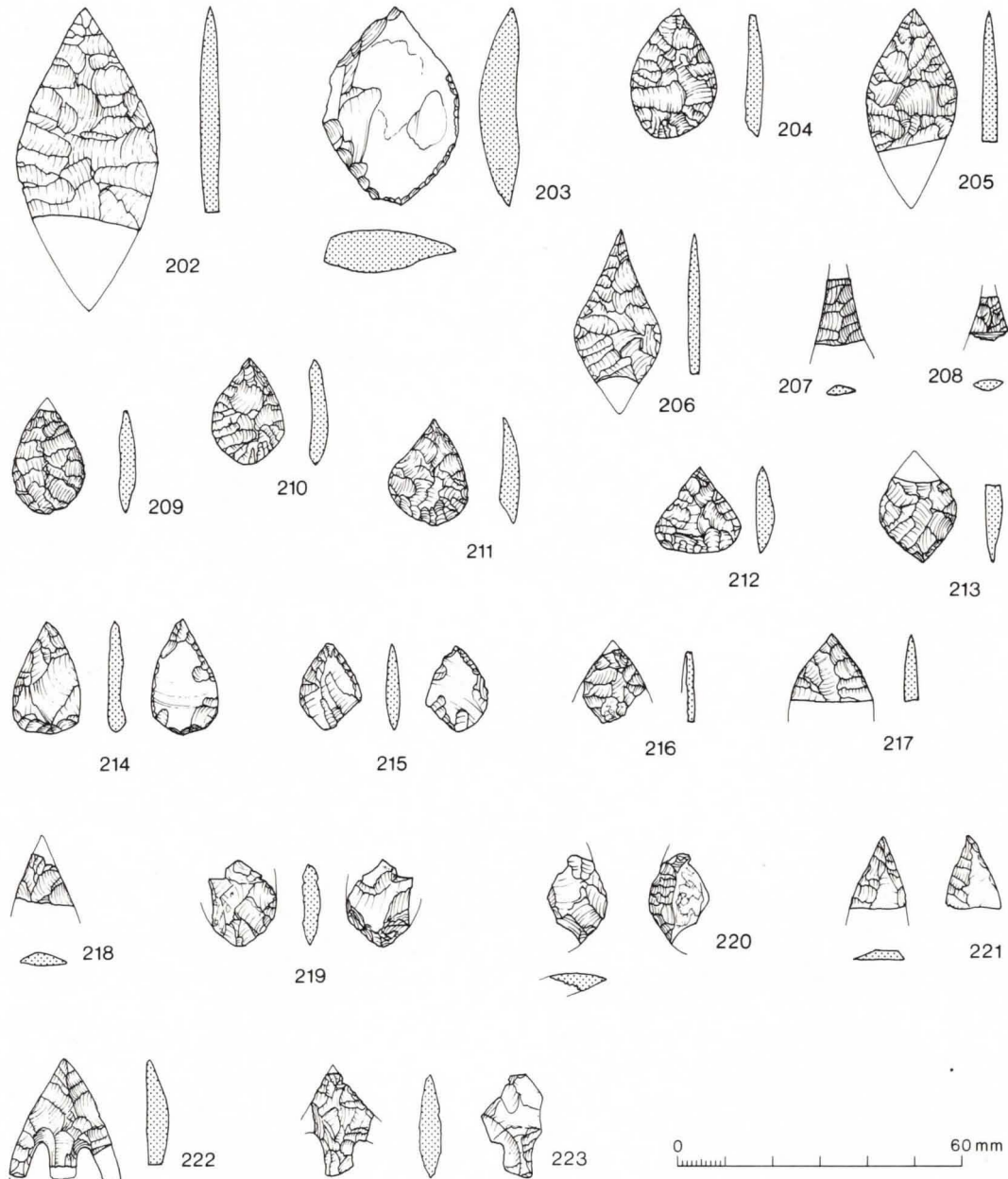


Fig. 55. Leaf-shaped arrowheads (nos. 202-20), oblique arrowhead tip (no. 221), barbed-and-tanged arrowheads (nos. 222-3). ($\frac{2}{3}$)

examples may have been contemporary with the cairn: nos. 202, 213 came from the later soil accumulation within the forecourt (no. 202 being from the surface of the buried soil immediately below the surviving blocking, and no. 213 being *within* this soil level), and no. 206 was found within the cairn blocking material immediately adjacent to the outer revetment wall of the cairn at the western end of the site. Finally, no. 203 came from the modern ploughsoil.

?Oblique arrowhead (fig. 55, no. 221). This single arrowhead fragment, with bifacial flaking on one edge and on one face on the other edge, is possibly the tip from an oblique, transverse arrowhead. It is made of flint, and came from modern ploughsoil.

Barbed-and-tanged arrowheads (fig. 55, nos. 222-23). Of the two fragmentary arrowheads of this form, no. 222 is possibly of *Green Low* type, and no. 223 is probably of *Sutton* type (Green 1980, 122-23).

Both came from recent ploughsoil, no. 222 to the east of the forecourt, and no. 223 from a position overlying the disturbed cairn.

Awls and piercers (fig. 56, nos. 224-33). The ten piercers from the site can be divided into three types: narrow blades with abrupt retouch on edges which converge to form a point at one or both ends (nos. 224-26); suitably pointed flakes or blades with minimal retouch on tip (nos. 228-33); lastly no. 227, a narrow parallel-sided backed rod with abrupt

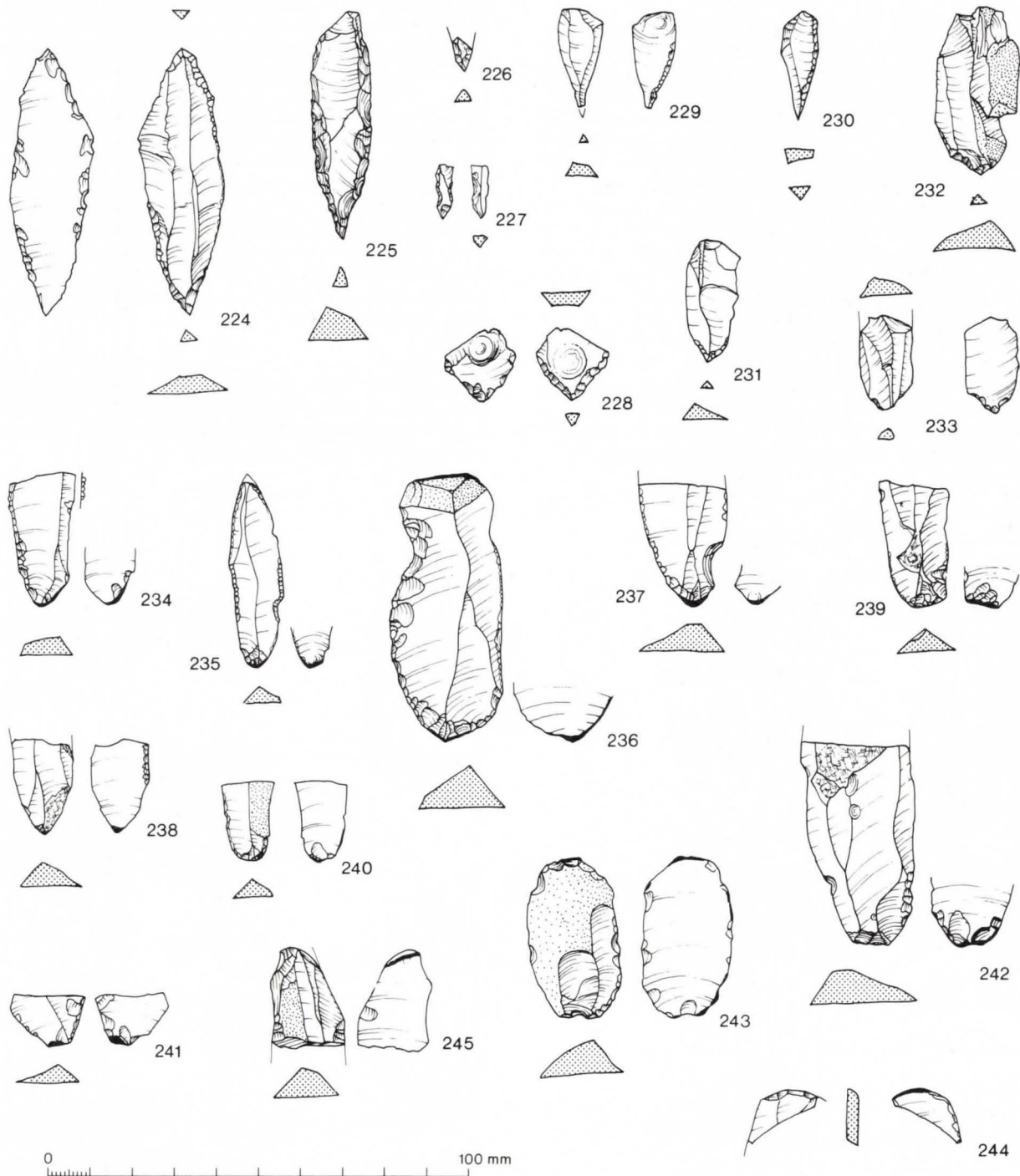


Fig. 56. Piercers with abruptly retouched edges (nos. 224-6), piercers with minimal retouch (nos. 228-33), *mèche de forêt* (no. 227), ground-edge pieces or *pièces émoussées* (nos. 234-44). (½)

retouch on both edges and with a heavily worn or rubbed end, for which the term *mèche de forêt* is appropriate. Of the first type, no. 224 is double-ended, with retouch continuing along both edges, and no. 225 is pointed at only one end and has a small area on the dorsal surface polished as though by friction in a haft or by rubbing on the material being pierced. The second group is more heterogeneous, making use of naturally pointed flakes. None are true rotating awls (as described in Clark *et al* 1960, 223). No. 233 has a heavily abraded off-set point formed by retouch in two slightly concave areas, and no. 232 has an area of gloss on an edge of the ventral face. All the examples are made of flint, no. 228 being made on a flake struck from a polished axe. Nos. 227-28, 231-33, came from the buried soil beneath the cairn, and no. 229 from an undated curving gully beneath the northern edge of the cairn (F311). The remainder are not closely stratified.

Ground-edge pieces (fig. 56, nos. 234-44). These twelve ground-edge pieces, or *pièces émoussées*, are characterized by wear or grinding which is often more easily felt than observed with the naked eye. All are of flint, and all but one are on blades (no. 234 being the exception), which generally have additional retouch. Two other unillustrated fragments, a blade and flake, also have worn ends. In most instances the blades have heavy wear or rubbing on the butt end, which has taken place after being detached from the parent core; in the case of no. 239 this has diminished the striking platform, and on nos. 234, and 242, it has removed it altogether. On no. 243 the wear continues along the sides of the implement. Most of the pieces have additional edge retouch or heavy utilization on the blade, this being very abrupt in the case of no. 234. Nos. 235 and 236 also have lateral notches. No. 245 has been abraded on its distal end. Opinion is divided as to whether the grinding is deliberate (*cf* Wymer 1962, 342), or whether it is the result of heavy utilization (Rozoy 1968, 369), but the sporadic nature of the abrasion on the Gwernvale examples suggests that it

was due to use rather than to deliberate grinding. Other tools from the site which exhibit heavy wear are the *mèche de forêt* (no. 227), two awls (nos. 225, 232), and the fabricator (no. 246).

Four pieces at least probably belong on contextual grounds to pre-cairn industries: two (nos. 242-43) came from the lower soil profile within the forecourt, and two others (nos. 238-39) came from areas of the pre-cairn soil which had been exposed by robbing. None of the remaining examples are closely stratified.

Fabricator (fig. 57, no. 246). This single fabricator has a flattish D-shaped cross-section, and is rubbed or worn at both ends. The fine scale-flaking on one side has been truncated by medium abrupt retouch, transforming what may have been a knife into a fabricator. Other smaller pieces with areas of heavy wear or grinding on the ends which are described above (eg no. 235) may be a sub-group of the fabricator class. This form of implement is usually considered to be of Late Neolithic or Beaker date (*cf* Smith 1965, 108). From one of the post-medieval road surfaces.

Splintered stone (fig. 57, no. 247). Large flake with splintering at distal end and crushing on the butt end, which has taken place after the flake was detached from its parent core. The damage is quite distinct from bruising and incipient cones of percussion found on typical hammerstones, and step fracturing caused by difficulty in removing a flake. The object is best classed within the category of *pièces esquillées* or *outils écaillés*. The dating of this form is uncertain, but it could be of later Neolithic date (*cf* Jacobi 1980b, 177-78). From modern ploughsoil.

Bifacially flaked objects (fig. 57, nos. 248-49). Of these two fragments, no. 248 has been regularly worked and may be a fragment of a tool, and no. 249 is more crudely flaked and could be a fragment from a discoidal core. Both are of flint, and neither is securely stratified.

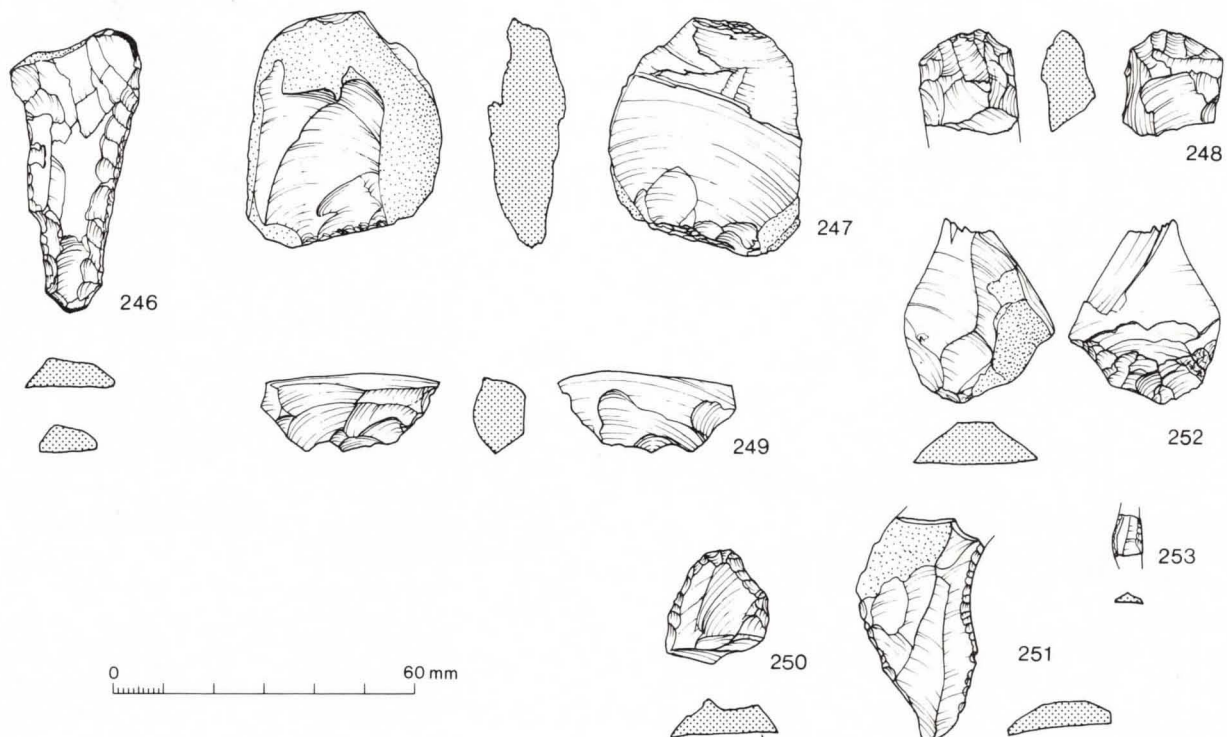


Fig. 57. Fabricator (no. 246), splintered stone or *pièce esquillée* (no. 247), bifacially flaked objects (nos. 248-9), miscellaneous retouched flakes and blades (nos. 250-53). ($\frac{2}{3}$)

Miscellaneous retouched flakes and blades (fig. 57, nos. 250-53). Of about 210 flakes which show retouch or utilization and which cannot be classified into any of the tool categories above, four of the more extensively retouched pieces are illustrated. No. 250 is a flake with flat invasive retouch which has removed the bulb of percussion, and is from the buried soil beneath the cairn. No. 251 has abrupt retouch in

a concave area on one side, denticulated retouch on the other side, and is from modern ploughsoil. No. 252 has abrupt retouch around the distal end of the object—possibly a knife fragment, and came from the buried soil beneath the cairn. No. 253 is a small blade with light but abrupt retouch on one or both edges, and comes from the later soil levels within the forecourt.

Discussion

Late Upper Palaeolithic industry. Gwernvale is the first Late Upper Palaeolithic open site to be found in Wales, apart from a find of a backed piece found about 35 km to the south-west at Carn Fach, Rhigos, Mid-Glamorgan, which may also be of this date (Green, in press), and accordingly warrants some discussion. The only certain pieces present are the backed blades (nos. 18-24), representing less than 5% of the more datable types present at the site. But it is possible that other blades and flakes of chalcedonic chert (*eg* nos. 25-28) and some of the burins, scrapers, and ground-edge pieces also belong to this industry. The backed blades are probably spear armatures, and other blades could represent tool blanks or skinning knives (*cf* Jones 1980, 153-65). In assemblages of this kind there appears to be a direct correlation between the range of activities, the season, and the size of the occupying group (Yellen 1977, 81-82). The limited equipment suggests that the site was only used for short periods and for a specific purpose, probably as a base from which to hunt large herbivores such as reindeer or horses—the preferred prey animals of British Upper Palaeolithic hunters (Campbell 1977, 107). The seasonal movement of most reindeer from low tundra or forest in winter to high tundra in summer is well known (Burch 1972; Campbell 1977, 114); thus the location of the site on the margins of upland Wales suggests that it may have been chosen as a base from which to exploit summer herds, and more specifically, its siting on a gravel terrace overlooking the Usk suggests a strategy for catching game either moving along the valley or coming to the river for water. In addition, the summer thaw may well have produced boggy ground on the floor of the valley into which game could be driven.

Bipolar settlement patterns, indicating movement from all-season residential sites to summer hunting camps, and reflecting strategies dependent on the seasonal movement of herds is well attested elsewhere in areas with marked differences in relief—for example in Cantabrian Spain (Straus 1977, 43)—and might well be expected in this case. The two nearest Late Upper Palaeolithic sites to Gwernvale—King Arthur's Cave in the Wye valley, and an open site at Arrowcourt in Herefordshire (fig. 62a)—have been suggested by Campbell to represent respectively a base camp and a possible transit site en route to the Welsh uplands (Campbell 1977, 167-68; the possible Late Upper Palaeolithic cave site mentioned by him at Ogof-y-Darren, Llangattock, can now be discounted, see Green, in press). The most prolific

site of this period lies about 70 km away at Gough's Cave on Mendip (Collcutt 1977). Movement over distances of this order is entirely compatible with estimates of the territory sizes of Australian hunter-gatherers, for instance (Flood 1976, 38-40), and of even greater relevance in the present context are the territory sizes of bands occupying the Canadian sub-arctic, which could be up to 400 km across (Helm 1968). Since very large territories are possible, it would be fruitless to attempt to define a parent base camp with any greater precision without supporting evidence. It would be a mistake, however, to assume that such a base camp must necessarily have been a cave; the potential of most caves for other than transitory occupation has been greatly overstated (Green, in press), and indeed a review of the patterns of cave use among modern or historically well-attested hunter-gatherer communities, has yielded not a single example of their permanent use for residence, in either the temperate or polar regions (Binford 1978, 489-92).

The Mesolithic industries. The more certain elements of the Mesolithic industries at the site include the microliths (nos. 29-79) and microlith manufacturing debris (comprising unfinished microliths, nos. 88-89, and microburins, nos. 80-87), but could also include burins and burin spalls (nos. 97-118), notched flakes and blades (nos. 90-93, 96), truncated blades (nos. 119-28), ground-edge pieces (nos. 234-44), awls with abruptly retouched edges (nos. 224-26), the drill or *mèche de forêt* (no. 227) and some of the scrapers. Together these types represent over 60% of the more datable tool types present at the site. The Mesolithic industries are evidently largely based on flint obtained from secondary sources, but there are also two microliths of black chert, a further microlith and a microburin of chalcedonic chert, and one burin possibly of quartzite.

Microlith types indicate the presence of an early industry with broad-bladed forms and a late industry with narrow geometric forms. In reference to the broad-bladed forms it is significant that the relative frequencies of Jacobi's microlith types 1-5 mirror those of such other Maglemosian assemblages as Rhuddlan M, Trwyn Du, and Thatcham (Jacobi 1980*b*, fig. 4.9, p. 142; Jacobi 1979, 52-53). Although the numbers present in both the Early and Late industries are relatively small, it is important to note that together they form the most numerous type of artefact from the site. The numbers of the more elaborate shape 2-4 are too few to assess their relative

proportions and thus to suggest the technological or cultural affinities of the industry (Jacobi 1979, 57, 63-65), and obliquely blunted points of type 1 also persist in Late Mesolithic tool kits. Although in southern England the early and late obliquely blunted points are metrically distinct (the early forms are between 30 and 43 mm in length, and have a length to breadth ratio of <0.28 , whereas the later ones are between 18 and 24 mm long and have a length to breadth ratio of 0.28 , see Pitts and Jacobi 1979, 170), the complete Gwernvale examples have an average of 27.5 mm and a length to breadth ratio of >0.28 . A possible explanation of this is that only small nodules of flint were available from secondary sources, compared to the better quality flint available in southern England. Although this clearly needs further study, the obliquely blunted points from Gwernvale are tentatively ascribed to the Early Mesolithic industry. The later microlithic component is characterized by scalene micro-triangles and rod-like pieces blunted down one edge (Jacobi 1980b, 177), but assemblages of this kind do not seem to have a marked geographical pattern or to correspond to sub-cultures (Jacobi 1979, 57, 63-69). The use of the micro-burin technique is characteristically Mesolithic, but the dating of notched pieces is less certain. They occur in later Mesolithic assemblages in South Wales (Jacobi 1980b, 177), and elsewhere in both earlier and later industries (Clark and Rankine 1939, 76; Higgs 1959, 220), and also in later Neolithic contexts (Alexander and Ozanne 1960, 291). While it is likely that notches on blades are unfinished microliths being manufactured by microburin technique (*eg* nos. 90, 96)—and therefore of Mesolithic date—the others are less certain.

It is difficult to differentiate between early and late types amongst the other tool types present which are traditionally ascribed to Mesolithic tool kits. The *mèche de forêt* may belong to either industry (*cf* Jacobi 190b, 154), but three abruptly retouched awls are most closely paralleled in Maglemosian industries, as for example at Star Carr (Clark 1954, 106, fig. 39) and other similar industries of the Early Mesolithic. Ground-edge pieces or *pièces émoussées* can be paralleled in Mesolithic contexts (*eg* Wymer 1962, 348), and as the Gwernvale examples are on blades they are probably all to be seen as of this date (although the type does seem to persist into the Neolithic, see Saville 1977, 7). Although it is possible that some of the burins belong either to late Upper Palaeolithic or to the Neolithic industry, those from Gwernvale are most similar morphologically to Mesolithic examples, and are probably largely of that date. Truncated blades are frequently also associated with Mesolithic industries (*eg* Clark 1954, 104), and seem to be unrecorded in Neolithic contexts.

Although it is not possible to establish with any certainty the full composition of either the Early or Late Mesolithic industries, it does seem that a relatively full complement of tools appropriate to hunting and processing would have been present in

each case, suggesting that the site was essentially a temporary camp for the exploitation of ungulates (*cf* Jacobi 1980b, 183). The radiocarbon date of *c.* 4945 bc be obtained from a pit below the cairn, though unassociated with any diagnostic flintwork, falls well within the time span of the later part of this period (Appendix II).

The Neolithic industry. The Neolithic industry can only readily be determined on the basis of distinctive tool forms, of which the main types present are polished axe fragments (nos. 195-201), leaf-shaped arrowheads (nos. 202-20) and probably the knives and edge-dressed flakes (nos. 182-94) and a proportion of the scrapers and awls, altogether representing less than 30% of the more diagnostic forms present at the site. The great majority of these finds belong to the period of pre-cairn activity (for which there is a single radiocarbon date of *c.* 3100 bc), and in only one or two instances is there reasonable contextual evidence to suppose that finds were contemporary with the use or closure of the tomb in the period up to about 2500 bc. Of the arrowheads, twenty of the twenty-four examples probably belong to the pre-cairn period, as do at least three of the six stratified axe fragments. Several finds stand out from the rest of the Neolithic assemblage either because of their special nature or their presence in contexts suggesting that they might be contemporary with the tomb: one is the large leaf-shaped arrowhead, no. 202, found on the surface of the buried soil immediately beneath the forecourt blocking, and another is a medium-sized ogival arrowhead, no. 206, found within cairn blocking material. The only other finds which on contextual grounds would seem to be contemporary with the use of the tomb are several scrapers which were found either in later soil levels within the forecourt, or in one instance in the outer passage of Chamber 1 (nos. 147, 149, 151, 170), and a blade core which has been retouched as a scraper (no. 1), found lying on the surface of the buried soil immediately outside the entrance to Chamber 2.

Other implement types which are probably the products of Neolithic industry include the scale-flaked knives, nos. 182-92. Although usually considered to be predominantly a Beaker or Food Vessel type (see for example those from the upper levels at Windmill Hill, Smith 1965, 108), the presence of at least some examples in pre-cairn contexts indicates that the type must be Neolithic or earlier in date. A close parallel comes from one of the chambers at Ty-isaf (Grimes 1939, fig. 4, no. 6). The bifacially flaked object, no. 248, might also belong to this horizon. At least one of the awls is likely to be of Neolithic date (no. 228) since this is made on a flake struck from a polished flint axe; other examples with minimal retouch might belong to Mesolithic or to Neolithic industry (*cf* Smith 1965, 93; Clark *et al* 1960, fig. 15, for other Neolithic examples). It is also possible that some of the burins are of Neolithic date. No. 108, for example, is made of flint very similar to some of the

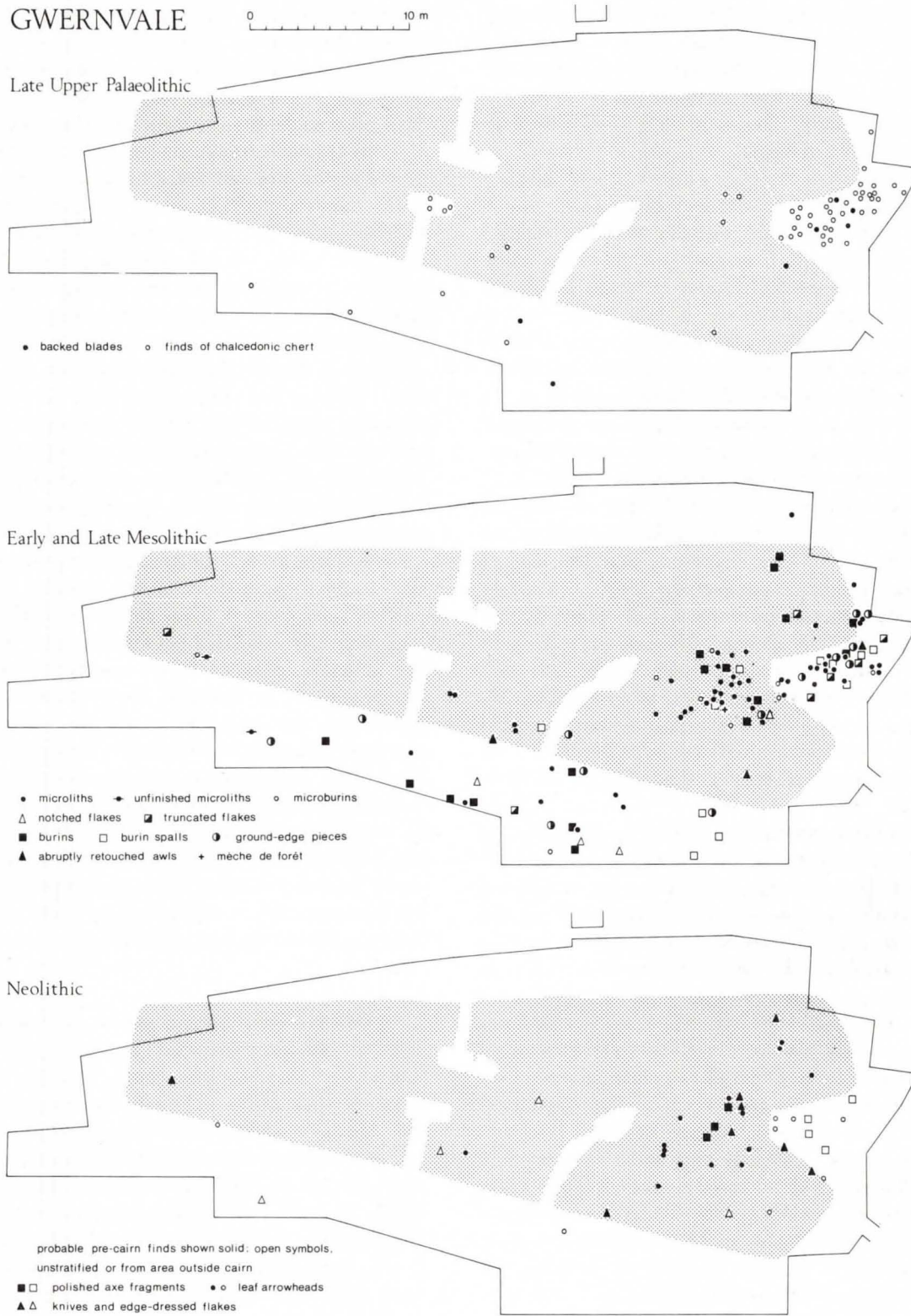


Fig. 58. Distribution and possible dating of certain distinctive flint tools.

axe fragments, and it is interesting to note that one burin from Hurst Fen is made on a flake struck from a polished axe flint axe (Clark *et al* 1960, 232-34), and that burins occur at Mynydd Rhiw (Houlder 1961, 132).

If it is allowed that at least a proportion of the waste material and undiagnostic implements belongs to the pre-cairn Neolithic phase, the assemblage would not be uncharacteristic of settlement sites of the Neolithic

period. The relatively high proportion of tools is possibly to be explained by a scarcity of raw materials leading to the importation of finished items and blanks. The use of almost every suitable flake and the scarcity of raw material seems to be a characteristic of the entire pre-cairn assemblage—the great bulk of the raw material, of small nodule size, probably having been obtained from secondary sources, possibly at some remove from the site, either towards the coastal

areas of South Wales, or in the northern Cotswolds. A majority of the arrowheads are made of this type of flint, and are of the small squat types which are particularly characteristic of those areas of Britain where only poorer sources of flint were generally available (Green 1980, 68).

It is not possible to isolate distinct types of scraper from the mixed assemblages present at the site, but it appears that Neolithic examples may be characterized both by steep retouch on relatively thick pieces (*cf* Smith 1965, 95) and by those where the retouched edge extends to a large part of the circumference (*eg* nos. 134, 153-54), since both of these types are less frequent in Mesolithic industries. All the scrapers are of small size and the majority are made from the most readily available flint, and could, like many of the arrowheads, have been made locally.

By contrast, the three fragments of ogival leaf-shaped arrowheads (nos. 206-08) are all made of better quality flint which is uncharacteristic of the assemblages as a whole, suggesting that they arrived at the site as complete objects by a different mechanism. The material is macroscopically similar to that available at Beer in Devon, and their presence here may seem to be consistent with suggestions that ogival forms were prestige products, possibly having some special relationship with the Severn-Cotswold 'province', and transmitted over large distances from sources within South-Western England (Green 1980, 98-99).

The axe fragments of igneous rock (nos. 199-201) are the only items of this kind of material from the site, and the flint axe fragments too are of types of material which is only rarely represented in the assemblage. Although the source of the material for axes of both igneous rock and flint have not been ascertained, it appears again that much better 'exotic' materials were used. The absence of complete axes, and the fact that the fragments occur either as flakes or as larger pieces which have been re-used as cores suggest that redundant implements of this kind were prized as sources of raw material in their own right, better in quality and at least equal in size to that which was otherwise commonly available. Indeed, strictly speaking, there is no certain evidence other than that objects of better quality materials were arriving at the site as scrap. It is difficult to quantify the proportion of material which may have been available in this way; it should be borne in

mind, however, that it has only been possible to identify flakes struck from axes because they still retain part of the face of the original axe, and other flintwork, which cannot now be recognized, may have been made of more thoroughly re-worked axes.

There is little certain knowledge of the mechanisms of axe production and distribution in Britain (Clark 1965; Elliot *et al* 1978), or of the extent to which finishing or re-sharpening took place on sites away from the source of the materials used. Portable polishing or grinding and sharpening stones of the type found within the base of the cairn at Gwernvale (fig. 60, pl. 26a) have only rarely been found or recognized. At least two other examples are known from Wales, one from Llandegai in Gwynedd (Houlder 1968, 218, pl. XXXb; this report pl. 26b), and one from Bryn yr Hen Bobl in Anglesey (Hemp 1935b, 292, pl. LXXXI, no. 1; this report pl. 26c). In England large rocks used for grinding and sharpening are known for instance at the West Kennet long barrow (Piggott 1962, 19-21), where two large sarsen slabs, one forming part of the passage wall and another incorporated in the forecourt blocking, had apparently been utilized before they were built into the structure. Smaller stones are known from the settlement site at Ehenside Tarn (Bunch and Fell 1949, 14) and from the pavement of the early mortuary structure at Wayland's Smithy (Atkinson 1965, 130). There is no evidence from Gwernvale which necessarily indicates the primary manufacture or completion of axes, and the portable stone, which most probably belongs to the pre-cairn settlement or to the period of construction, is perhaps more likely to represent the re-sharpening of axes originally derived at some distance from the site.

Late Neolithic—Early Bronze Age industry. A possible tip from an oblique arrowhead (no. 221), two barbed-and-tanged arrowheads (nos. 222-23), and a fabricator (no. 246)—all forms which can probably be dated to the second millennium bc, together constitute the only evidence from the site for Late Neolithic or Early Bronze Age activity. The only other find which might be appropriate to later Neolithic technology is the splintered stone, or *pièce esquillée* (no. 247). None of the finds is closely stratified, and together they account for only about 2% of the more datable tool types present at the site.

UTILIZED STONES

(figs. 59, 60; pl. 26a)

Three querns, one rubbing-stone, five fragments of querns or rubbing-stones; two fragments of polishing-stones, and a possible axe polishing-stone or sharpening stone were found during excavation.

In the absence of a more wide-ranging study, the function of each stone is uncertain, but it is clear that a range of different activities is represented.

Of the more complete stones (nos. 1-4, 10-11) only

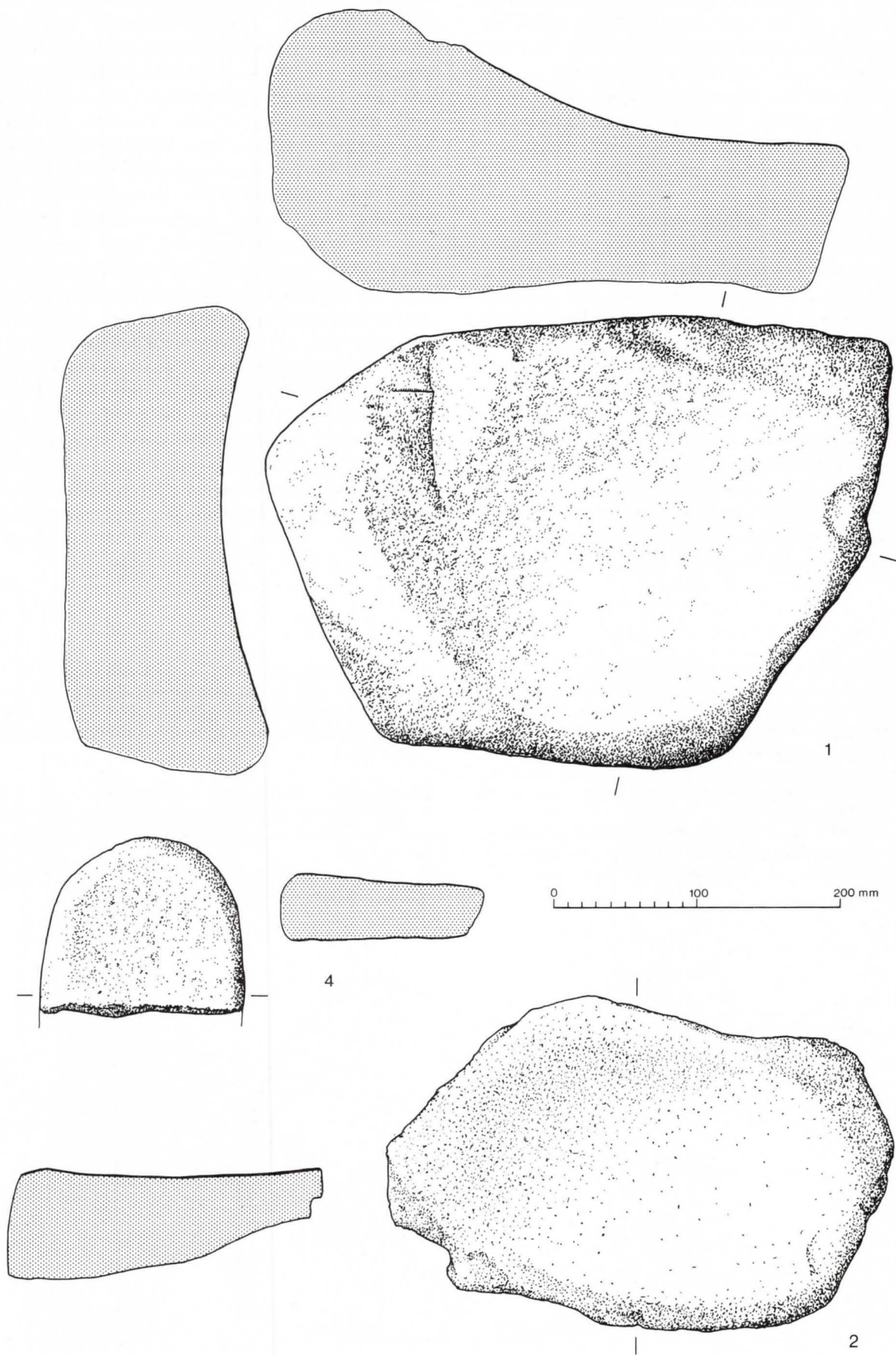


Fig. 59. Querns (nos. 1-2), rubbing-stone (no. 4). ($\frac{1}{4}$)

the rubbing-stone, no. 4, has been deliberately shaped; the fragmentary stones are too incomplete to be certain. All the stones are probably ultimately derived from the local Old Red Sandstone: nos. 6-8 are ill-sorted grits; no. 9 is of conglomerate, and the remainder are fine to medium-grained sandstone. I am grateful to Mr K. Brassil for his comments on the stone types. It is probable that the stones were either taken from local surface outcrops or from the local gravel terrace.

Many of the utilized stones were found in secondary contexts, and most, if not all, probably belong to the pre-cairn phases. One rubbing-stone (no. 4) and one polishing-stone (no. 10) acted as packing-stones in the bedding-trenches of the rectilinear timber structure beneath the northern horn of the cairn, and a small fragment of a quern or rubbing-stone (no. 8) was found in the buried soil nearby. These features contained both Mesolithic and Neolithic flintwork, which like the stones was probably residual from some earlier phase of activity. Similarly, one posthole of the six-poster within the forecourt contained a small fragment of a worn stone (no. 5). The other quern or rubbing-stone fragments (nos. 6, 7) came from the buried soil between

Chamber 1 and the forecourt, and no. 9 came from the surface of the accumulated soil within the forecourt. Although this last example might be contemporary with the use of the tomb, the deposit contained other finds which most probably pre-date the cairn. The remaining stones (nos. 1-3, 11-12), with the exception of no. 3, were all found incorporated within the cairn, and therefore probably were also derived from earlier periods of activity; no. 3 was found within the make-up of the post-medieval hollow way, but it too had probably originally come from the cairn. None of the stones can be more closely dated, but the presence of cereal grain in the buried soil beneath the cairn suggests that at least some items (*eg* querns nos. 1-3, and the rubbing-stone, no. 4) were used for grinding corn during the pre-cairn Neolithic phase. A similar quern was found within the cairn of the Burn Ground chambered tomb (Grimes 1960, 75). It is most unlikely that the highly smoothed stone, no. 12, could have been used as a quern, and it is suggested that it had been used for the polishing or re-sharpening of Neolithic axes (see also discussion on page 132).

Querns

1. Quern, 0.44 m long by 0.31 m wide and up to 0.2 m thick, with deep hollowed surface, partly damaged. From the upper levels of the surviving cairn between Chamber 1 and the forecourt (location shown on figure 31).
2. Quern, 0.36 m long by 0.22 m wide and 75 mm thick, with dished upper surface worn very smooth. From the surface of the surviving cairn between Chambers 1 and 2 (see location on figure 31).
3. Part of a large quern with flat smoothed surface; surviving dimensions 0.38 by 0.25 m by 90 mm thick. From make-up of post-medieval hollow way. Not illustrated.

Rubbing-stone

4. Part of shaped stone 0.14 m wide and between 30 and 48 mm thick with convex worn surface on both sides. From packing of posthole F133E belonging to rectilinear timber structure beneath northern horn of cairn (location shown on figure 14).

Quern or rubbing-stone fragments (not illustrated)

5. Fragment 65 by 80 mm across and 30 mm thick. From posthole F207 of six-poster within forecourt (location on figure 14).
6. Fragment 35 by 40 mm across, from surface of buried soil in area between Chamber 1 and the forecourt.

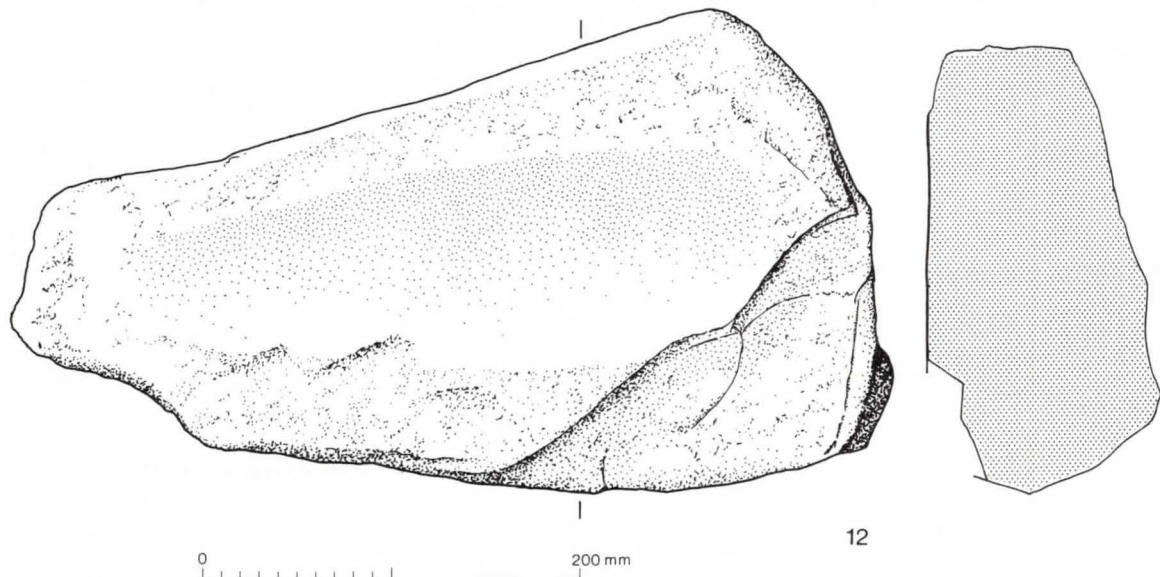


Fig. 60. Axe-polishing or sharpening stone (no. 12). ($\frac{1}{4}$)

7. Fragment 60 by 70 mm across, from base of buried soil in area between Chamber 1 and the forecourt.
 8. Fragment 60 by 75 mm across, from a point 0.25 m to the north of bedding-trench F133 belonging to rectilinear timber structure beneath northern horn of cairn.
 9. Fragment 60 by 90 mm across, from surface of soil accumulation within forecourt.

Polishing-stones (not illustrated)

10. Small water-worn slab 0.1 by 0.12 m across and 40 mm thick, with highly polished surface on one face. From packing of bedding-trench F229 of rectilinear timber structure beneath northern horn of cairn.

11. Fragment of slab with slightly polished surface, 0.12 by 0.15 m across and 40 mm thick. From cairn between Chamber 1 and the forecourt.

Axe polishing or sharpening stone (pl. 26a)

12. Wedge-shaped slab 0.46 m long, between 0.1 and 0.25 m wide, and up to 0.12 m thick. The slab has one naturally flattened face which has a reasonably distinct shallow polished area 80 mm wide running along its length. From within the basal courses of the cairn in the area between Chamber 1 and the forecourt. (See also discussion on page 132.)

An Iron Age glass bead

by Julian Henderson

The bead (fig. 61), found within a robbing hollow in the cairn to the east of Chamber 1, has a colourless matrix and opaque yellow zig-zag decoration. It belongs to Guido's Class 11a beads (Guido 1978, 35), for which evidence of manufacture has recently been found at Meare (Henderson 1981, 59-60).



Fig. 61. Drawing by S. Morris. (†)

The bead was analysed quantitatively by X-ray fluorescence spectroscopy, and showed the following composition, expressed in percentage weight of the element oxide (for details of analytical conditions employed see Henderson and Warren 1981: ND—not detected; * not analysed for):

The colourless matrix of the bead is shown to be a soda-lime-silica glass, which in having antimony oxide as a decoloriser and no detectable manganese, is characteristic of the pre-first century BC glasses (Henderson and Warren 1983). The decorative opaque yellow glass has a high lead oxide composition, and although this is broadly similar to the lead antimonate opacified yellow glasses found in Class 11 beads at Meare (Henderson 1982), it does not precisely match this coherent group from Meare, as defined by cluster and discriminant multivariate analysis. Since the bead's composition and some details of its morphology differ slightly from 'typical' Class 11 beads found at Meare, its precise origin is unresolved.

The bead is almost identical to one found by Mr Allan Probert during his excavations at the neighbouring Iron Age hillfort at Twyn y Gaer, Cwmyoy, Gwent (*pers comm*).

	Na ₂ O	MgO	Al ₂ O ₃	SiO ₂	K ₂ O	CaO	SnO ₂	Sb ₂ O ₃	TiO ₂	MnO	Fe ₂ O ₃	CoO	CuO	PbO
Matrix	16.5	0.7	3.2	68.9	0.9	6.9	ND	0.8	0.02	ND	0.35	ND	0.07	0.02
Decoration	17.0	0.8	2.3	45.6	0.6	8.4	ND	2.2	*	ND	2.0	ND	0.01	20.9

CHAPTER III

Discussion**Late Upper Palaeolithic and Mesolithic Activity**

Implements characteristic of the Late Upper Palaeolithic, Early Mesolithic and Late Mesolithic have been isolated from the mixed assemblage of flintwork present at the site, and join an increasing body of evidence which can be taken to show that the Late Glacial and early Post-Glacial environments of Wales were being exploited by hunter-gatherer groups both much earlier and more extensively than has been supposed.

Until recent years finds of these periods have been restricted almost exclusively to lowland and present-day coastal areas in south, south-west, and north Wales (fig. 62). Whereas this distribution is at least partly a reflection of the amount of fieldwork undertaken in different areas, it probably does provide a reasonable picture of the relative intensity of activity during these periods. This has suggested to several writers a long-standing pattern of seasonal movement from home-bases in the lowland coastal areas towards temporary inland encampments in pursuit of migrating herds of the larger herbivores—reindeer and horse in the Late Glacial, and wild ox and red deer in the Flandrian. Thus a bi-polar pattern of settlement first established in the Late Upper Palaeolithic appears to have gradually modified and gained in intensity during the gradual amelioration of climatic conditions in the early Post-Glacial, and eventually became transformed into coastal and inland economies dependant upon transhumance in the Late Mesolithic and Early Neolithic periods, denser and more permanent settlement inland being perhaps encouraged by a rise in sea level throughout the Mesolithic period with consequential loss of coastal plain areas.

Major river valleys such as the Usk would have provided narrow tracts of lowland penetrating to the heart of Wales, and in forming a bridge between lowland and highland areas might well have taken the brunt of these changes. For several centuries at least, the valleys of the Usk and Wye have provided the route of major highways into and out from mid Wales, readily communicating with the lowlands of Glamorgan and with areas around the lower Severn. The general location of Gwernvale on the margins of upland Wales, and on a terrace overlooking the Usk, may have provided a convenient vantage point from which the resources provided by several distinct ecological zones could be easily reached. There is no positive evidence of direct continuity between any of

the earlier prehistoric phases; in each case the range and quantity of the material equipment suggests temporary settlements which may have become superimposed by chance. Although conditions offered by the site may have been favourable to early settlement they are by no means unique in the locality, and one must suppose on the basis of pure probability that similar sites are scattered quite densely along the valley.

Evidence of the earliest activity at the site is limited to a small number of backed implements and possibly several other blades which are characteristic of Late Upper Palaeolithic industry. With one possible exception it represents the first open site of this period known in Wales during the Late Glacial period (p. 129), at a date of about 10,000—8000 bc on the basis of radiocarbon dates elsewhere in Britain. Elizabeth Healey and Stephen Green have argued that the finds are most reasonably interpreted as representing the seasonal movement of hunting parties moving towards the tundra of the Welsh highlands from a home-base near the Bristol Channel, at that time dry land, in pursuit of migrating herds of game.

A similar interpretation can perhaps also be invoked to explain at least some of the Mesolithic industry at the site.

Broad-bladed and geometric microlith forms are both represented in the assemblage, which Healey and Green have argued probably represent distinct traditions. These would be conventionally attributed to Early and Late Mesolithic industries respectively and dated to the periods 8000-6500 bc and 6500-3500 bc. Several pre-cairn pits and hollows contain exclusively Mesolithic forms, but there are suggestions, in some instances at least, that the features themselves are of Neolithic date. Possibly only one feature can be certainly attributed to this period—a pit which has been dated to *c.* 4945 bc; although this would be compatible with some of the late microlithic forms found elsewhere at the site, the feature itself is unfortunately not associated with any artefacts.

The lack of any other features which can be certainly attributed to this period means that discussion is effectively limited to a consideration of the flintwork itself, and makes it difficult to assess the precise nature or permanence of the settlement. As in the Late Glacial, the distribution of Early Mesolithic

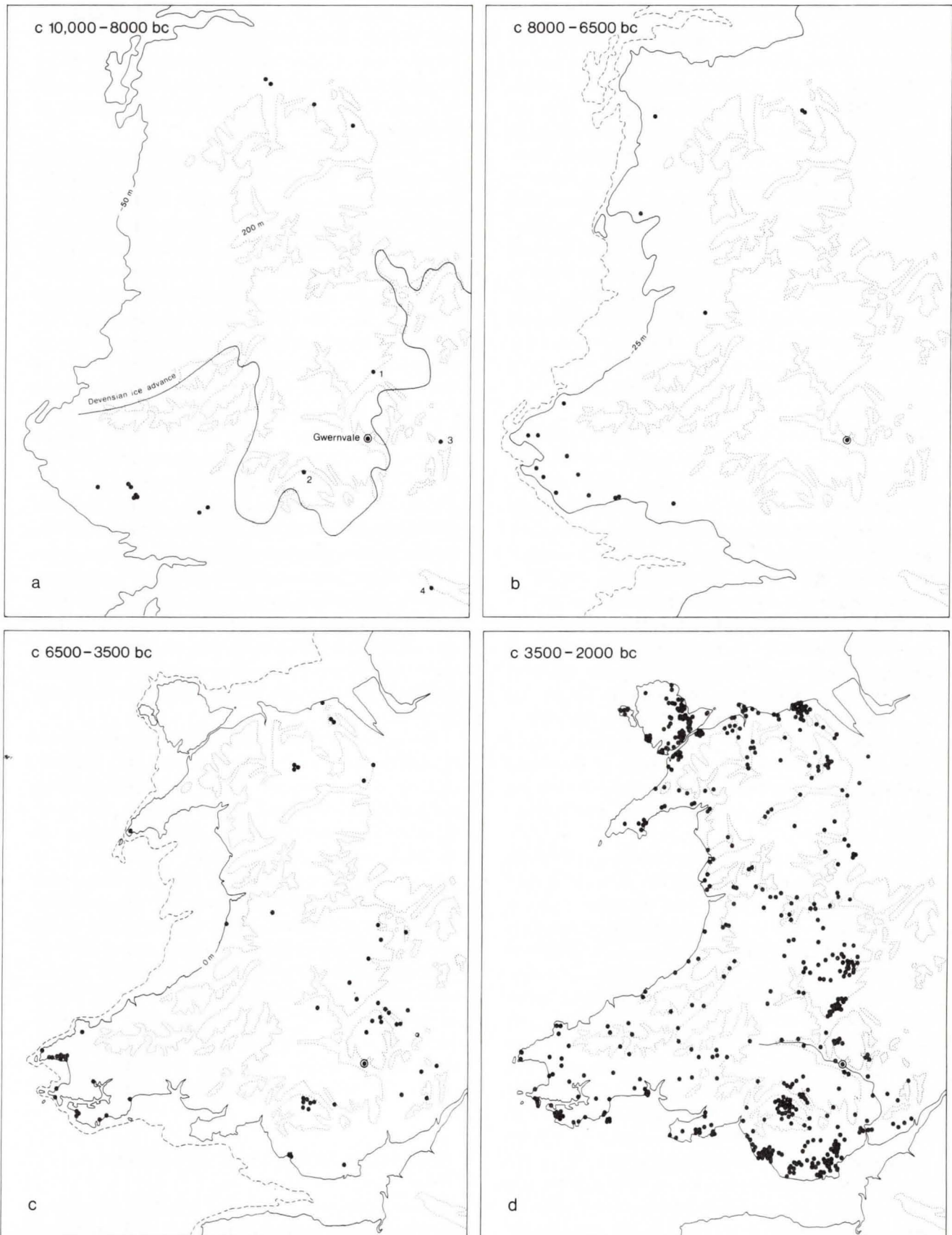


Fig. 62. Distribution of Late Glacial and Post-Glacial lithic industries in Wales: *a*, Late Upper Palaeolithic (1 = Arrowcourt, Herefords; 2 = Rhigos, Mid-Glamorgan; 3 = King Arthur's Cave, Herefords; 4 = Gough's Cave, Somerset; approximate limits of Devensian Glaciation at about 16,000 bc are shown in outline); *b*, Early Mesolithic; *c*, Late Mesolithic; *d*, Neolithic. (*a-c* after Jacobi 1980*b*; *d* after Savory 1980).

sites in Wales is almost exclusively confined to the lowland coastal areas (fig. 62*b*) although the presence

of early microlithic shapes in mixed assemblages in the Glamorgan uplands, and a matter of only 20 km

away at Cefn Hill, near Craswell, on the north-eastern ridge of the Black Mountains, has already suggested some development in the exploitation of inland and upland Wales in the Early Mesolithic (Jacobi 1980*b*, 193). More Late Mesolithic sites are known from inland Wales (fig. 62*c*) and although there is some argument for the establishment of transhumance economies between the lowlands closer to the coast and the highland areas in Glamorgan at this time (Jacobi 1980*b*, 195), the greater biotic potential afforded by improved climatic conditions may well have encouraged the development of similar land-use patterns between lowland and highland in inland areas. Clearance of local deciduous woodland may already have begun here in the Mesolithic as part of the management of game stock, as has been suggested in other parts of Britain (Simmons 1975; Jacobi *et al* 1976).

Microoliths occur in a variety of undoubted pre-cairn Neolithic contexts at Gwernvale, but the high probability of residual material from earlier periods occurring in later contexts makes it difficult to assess the nature of the relationship of the two industries. Jacobi has described the kind of conflict of interests that might develop in areas such as the Black Mountains, where there would probably have been a precise correlation between areas of winter grazing for wild herds, and areas of prime arable soil (Jacobi 1980*b*, 198). The partial dependence on domestic stock in the early Neolithic, coupled with the take up of relatively restricted lowland areas for cereal cultivation, would imply that transhumance could have made an important contribution to the mixed economy, and these factors alone may be seen as the cause for the eclipse of local late hunter-gatherer economic systems.

Palaeobotanical research carried out in mid Wales has shown that the woodland or scrub that had developed during the Flandrian—dominated by oak and alder, but with variations in other species such as lime, hazel, and pine probably dependent upon local topography—was eventually superseded from a time following the elm decline, by a landscape dominated by sedges, heather, and grasses. The decline in elm pollen values has been shown to represent a fairly reliable synchronous horizon in the British Isles, dated to about 3300-3100 bc (Smith and Pilcher 1973; Smith 1981, 159), and it has been argued that in Wales the replacement of woodland by blanket peats in upland areas which began at about this time, was greatly affected by human activity (Moore and Chater 1969; Moore 1973; Moore 1975). Blanket peat sites investigated by Price in the heart of the Black Mountains have confirmed this sequence locally (Price 1981)—one of his sites showing a decline in elm pollen values and the suggested presence of grassland towards the base of a peat profile whose initiation has been dated to *c.* 3485 bc. Other sites investigated by him in the mountains suggest that Neolithic and later prehistoric activity had greater impact in the south and west of the

upland area than in the east and north. Crampton and Webley (1966) have suggested that Mynydd Troed, one of the highest tombs in the Black Mountains group at a height of over 350 m, was built on ground that had already been converted to heathland.

In a recent paper Moore has argued for a distinct divergence in land-use between valley and upland sites in mid Wales during the early Neolithic period, possibly associated with strategies required to support a mixed farming economy (Moore 1981). The absence of cereal pollen and other indicators of arable farming in the upland sites which have been studied, until well after the elm decline, has suggested that forest clearance here is likely to have been solely for the creation of upland pasture. A different pattern of land-use is evident from studies of a lowland peat mire, sited deep in the Wye valley near Newbridge (Moore and Beckett 1971; Moore 1978; Moore 1981). Horizons dating to a period soon after the elm decline here contained a wide variety of pollen types usually associated with cultivation, as well as cereal pollens themselves. Close sampling of this part of the profile has revealed a sequence which is interpreted as a cyclical pattern of clearance and cultivation, possibly undertaken by a single family group, and lasting altogether about a century. Final abandonment may have been due in part to soil depletion, a factor which may bring into question the overall stability of the economic foundations of the local early Neolithic society.

The pollen evidence raises many important issues regarding man's relationship with his environment, and it is unfortunate that the corresponding archaeological evidence is at present so poor. Evidence of cereal cultivation elsewhere during the Neolithic period is very rare. Apart from the carbonized grain beneath the cairn at Gwernvale (p. 141), pollens of this date have been claimed from Llanellwedd (Crampton 1967), within 5 km of the site at Newbridge mentioned above, and at Rhos-y-clegyrn, Dyfed (Webley, in Lewis 1974, 35; but for reservations about the stratification see Lewis 1976). Livestock will no doubt have been of great importance, but none of the Neolithic sites in Wales (*pace* Webley 1969, 1976) has provided sufficient evidence to permit sensible debate upon the matter.

PRE-CAIRN NEOLITHIC ACTIVITY

Timber structures, pits, and scatters of pottery, flintwork, stone tools, animal bone, and carbonized cereal grain have jointly provided considerable evidence of Neolithic activity at the site before the construction of the cairn—the range of evidence greatly outweighing that of any earlier period. Some of the evidence points to the existence of a small-scale settlement site and some to the presence of ceremonial structures pre-dating the tomb, but as a consequence of the partial survival and recovery of

the entire plan, inadequacies of dating, and the absence of precise parallels for the full range of similar evidence elsewhere beneath chambered tombs in England and Wales, it is impossible to provide a definitive interpretation of the exact nature of the evidence, to say whether it all belongs to a single continuous period, the length of time it covered, and whether or not it was immediately superseded by the construction of the long cairn. A single radiocarbon determination of 3100 ± 75 bc has been obtained from charcoal within the upper fill of a pit stratified beneath the cairn and associated with this activity.

The timber structures beneath the eastern end of the cairn

Although all the timber features at the eastern end of the cairn most probably pre-date its construction or completion, a major point of uncertainty is whether the bedding-trenches beneath the northern horn, the six posts within the forecourt, and other postholes beneath the southern horn all constitute parts of the same structure. Features beneath the northern horn have undoubtedly been lost as a result of recent road-building, and other features may have been removed from beneath the area of the southern horn by erosion and recent ploughing, or possibly missed during the course of small-scale emergency work necessitated by the construction of the new road. Moreover, considerations of conservation precluded excavation under the surviving cairn material north of the forecourt. Arguments in favour of them all belonging together can be made on the basis of a shared orientation, and the superficial similarity of the whole to the ground-plans of early Neolithic buildings known elsewhere in Western Britain and Ireland (fig. 63).

The combination of bedding-trenches and separate postholes is reminiscent of constructional techniques employed in what are considered to be domestic structure at Ballynagilly, Co Tyrone, with two dates of 3215 ± 50 bc and 3280 ± 125 bc (ApSimon 1969;

Smith *et al* 1971, 97), and beneath a centre-court tomb at Ballyglass, Co Mayo (Ó Nualláin 1972). As a single structure it would also be similar in size and shape to the ground-plan of the early Neolithic building at Llandegai, Caernarvonshire, dated to 3290 ± 150 bc (Houlder 1968, 219; 1976, 58). The structures at Gwernvale occupy the highest point locally on the edge of the terrace—a feature they share with some of these other structures—and in view of the other evidence of domestic activity represented by finds beneath the cairn it may not seem unreasonable to suppose that the postholes and bedding-trenches represent a roofed building of similar kind. In each of the three sites quoted, the buildings appear to stand in isolation, possibly representing individual farmsteads (*cf* Smith 1974, 104). However, the various elements of the putative structure are clearly not contemporary with the earliest Neolithic activity at the site since they themselves contain a wide range of Neolithic artefacts, some of which were undoubtedly incorporated within the packing surrounding vertical timbering. Features beneath other parts of the cairn seem to suggest the existence of other structures whose plan was only partly revealed by excavation.

Alternatively, and again as a single structure, the position, orientation, and overall size of the structure would also invite comparison with the composite plan of the assumed ceremonial structures beneath the eastern end of the earthen long barrow at Nutbane, Hampshire, of which the second phase is dated to 2730 ± 150 bc (Morgan 1959, fig. 3). In this respect it may be significant that the only contexts at Gwernvale other than the chambers which have produced any human remains were the east-west bedding-trench beneath the northern horn and one of its associated postholes. None of the Irish dates nor that from Llandegai is significantly different to the only date obtained from pre-cairn Neolithic contexts at Gwernvale, and although the date from Nutbane is

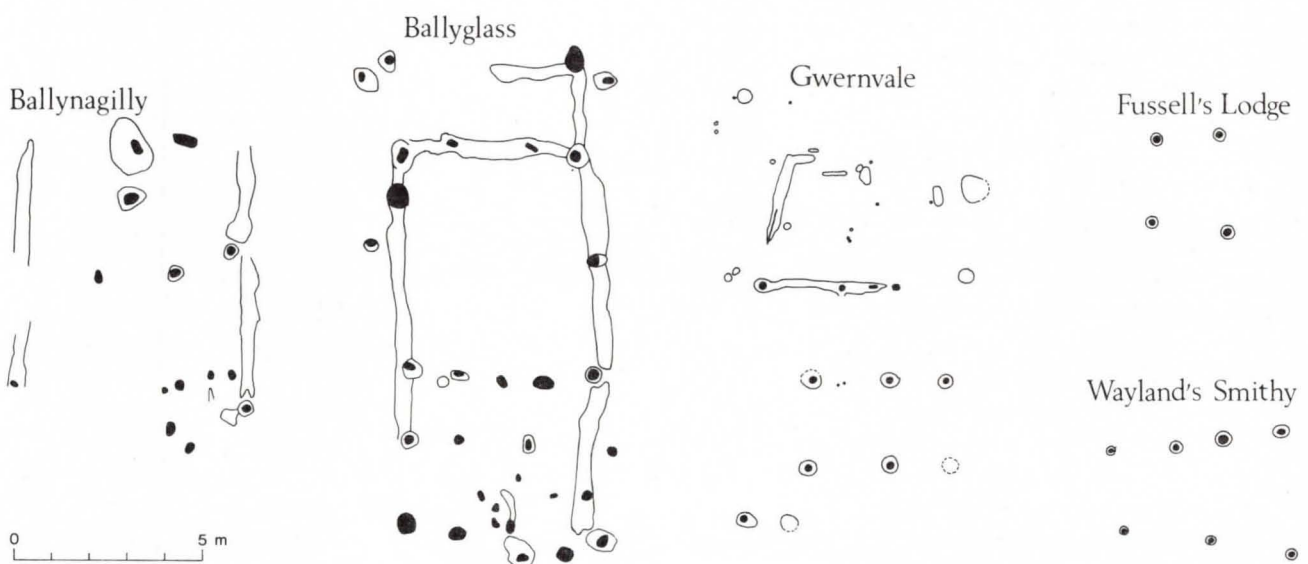


Fig. 63. Early Neolithic timber structures in Britain and Ireland.

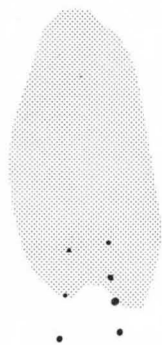
probably significantly younger than these, it should be remembered that the Gwernvale date is not directly associated with the timber structures at the site.

It seems equally possible that the trenches beneath the northern horn and the six posts in the forecourt may have been separate structures. The siting of the inner pair of postholes directly below the forecourt walls—but in a position in which the posts themselves could still have been standing when the wall was built—and the orientation of the six posts as a whole directly along the axis of the cairn, would plead for some special relationship between the six posts and the cairn. The timber features would thus be separated stratigraphically, to the extent that the six-poster may still have been standing at the time of the tomb's completion, whereas the bedding-trenches would clearly have been overlain by the cairn. It is argued below (p. 147) that the outer revetment wall was a secondary addition to the cairn, marking its final completion. It is therefore possible that the six-poster was built before the construction of the cairn had begun, and that it still stood or its position was still respected upon completion of the tomb. Alternatively, it was built within the unfinished forecourt, formed only by the inner body of the cairn. There is insufficient evidence to suggest the original dimensions of the trench-built structure, but its

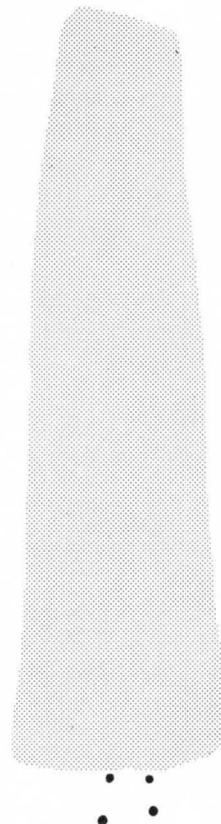
minimum size would have been about 3.5 m square, measured to the centres of the gullies and certain postholes. If they were separate structures, the most economical sequence here would see firstly the partial contemporaneity of the trench-built structure and the six-poster, secondly the disappearance of the trench-built structure, and finally the completion of the long cairn with its axis determined by the six-poster. The six-poster had certainly gone by the time the forecourt was finally blocked with stone.

Assuming the six posts to be a separate structure, there is little evidence to suggest what its function or functions may have been: there is no information other than that six posts, of moderate dimensions, were erected in a position and upon an orientation that was respected during the construction of the long cairn. No other features could be reliably associated with the posts and consequently there is no primary evidence of whether the structure was walled, roofed, linked to support a platform, or was composed of free-standing posts. The juxtaposition of the post-positions of the two inner postholes and the wall-face of the forecourt, however, would suggest that the posts, if contemporary with the cairn, could never have supported a projecting external facing or superstructure, at least at low level. There are no finds which can be certainly associated with it.

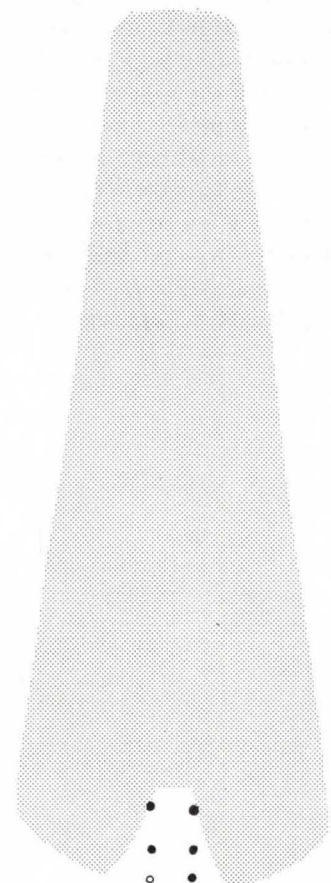
Certain timber structures have not previously been



WAYLAND'S SMITHY



FUSSELL'S LODGE



GWERNVALE

Fig. 64. Early Neolithic timber structures associated with tombs in Britain.

recorded in association with a Severn-Cotswold tomb, although patterns of posts similar to the six at Gwernvale have been found at the site of an earthen long barrow at Fussell's Lodge, Wilts. (Ashbee 1966) and at Wayland's Smithy, Berks. (Atkinson 1965), in front of another long barrow and below a chambered tomb in the Severn-Cotswold tradition (fig. 64). Possible timber features, however, have been found at a number of other Severn-Cotswold tombs: at Rodmarton, Glos., a feature in the forecourt is described as a 'circular stone-lined pit' (Clifford and Daniel 1940, 141); a pit containing stones, including a quern fragment, was found at Lanhill, Wilts. (King 1966, 78); another posthole may have existed in the centre of the forecourt at Nympsfield, Glos. (Saville 1979, 64). In the case of Rodmarton and Lanhill the pits were either adjacent to the revetment walls in the forecourt or lay partly beneath them in a manner reminiscent of the two inner posts of the six in the forecourt at Gwernvale. At Fussell's Lodge there was no stratigraphic relationship between the four post structure and either the mortuary structure or the earthen long barrow. It was interpreted as a 'porch', 'entrance passage', or 'ante-room' to the mortuary structure (Ashbee 1966, 7, 32), but there is some uncertainty as to how the mortuary structure could have been entered in the manner suggested (Simpson 1968, 143). Ashbee originally suggested that the structure may have been standing before the long barrow was built (Ashbee 1966, 32), but more recently it would appear to have been confirmed that once the 'porch' was erected, the mortuary structure could not have been entered (Ashbee 1969, 44). The stratigraphic position of the trapezoidal structure at Wayland's Smithy is clearer: it pre-dated the final mortuary construction containing the burials (Atkinson 1965, 130), and it is suggested that the structure might have supported an exposure platform. A much larger timber structure, which has been interpreted as an avenue, was found in a similar position in relation to the earthen long barrow at Kilham, Yorks. (Manby 1976, 126). Bedding-trenches at the entrance to the mortuary enclosure at Normanton Down, Wilts. (Vatcher 1961, 163) provide a further structure which may be associated with the earthen barrow traditions.

Perhaps too little is still known of either domestic or ceremonial timber structures during the early Neolithic (assuming that such a distinction is always valid), to be able to determine the function of the structure or structures at Gwernvale by analogy with sites elsewhere. Although the intrinsic evidence does not permit a positive interpretation, there are clear suggestions that the timber structures beneath the eastern end of the cairn were not contemporary with the earliest Neolithic activity at the site and that they were primarily ceremonial or at least had assumed ceremonial functions. It may therefore be necessary to suppose that if permanent settlement did take place at the site, the structures associated with it remain beneath unexcavated parts of the site. As a

ceremonial structure it finds its closest parallels at the sites of earthen long barrows in England, and may therefore be important in providing further evidence of components shared by differing Neolithic ceremonial traditions. At Wayland's Smithy and Nutbane the differing timber structures probably preceded the provision of mortuary facilities, and this may also have been the case at Fussell's Lodge, and in each case there are general relationships in terms of size, shape, orientation, and position relative to the mounds. In each of these respects the evidence from Gwernvale is similar. In none of these cases does it appear that the structure was re-built or replaced; it may therefore perhaps be inferred that they were temporary in purpose, and were intended to be superseded by structures which were not only more durable but which fulfilled a more enduring function.

Material remains

The range of finds accompanying the pre-cairn Neolithic phase clearly illustrates the establishment of local arable and pastoral economic systems by a date of about 3100 bc. The several querns found within the cairn, and the fragments of rubbing-stones from the buried soil and features beneath the cairn, are all considered to belong to the pre-cairn phase. Preliminary analysis of the charred plant remains from these contexts by Mr Gordon Hillman has shown that emmer wheat is moderately abundant within the buried soil (report forthcoming), which in view of other evidence probably indicates that cereals were cultivated locally and were processed for consumption at the site. Sufficient fragments of animal bone have survived from pre-cairn contexts to show that domesticated cattle, sheep, and pig all existed within the economy, but the total assemblage is far too small for any assessment of the relative importance or function of each species within the system.

The assemblage of pottery from the pre-cairn phase is seen to be composed of two main styles: shouldered vessels with simple rims, and simple hemispherical bowls with thickened rims, which Frances Lynch has shown have affinities with different early Neolithic ceramic traditions in Britain. The shouldered bowls fall into the Grimston/Lyles Hill series, and find their closest parallel on sites near the western coasts of Wales and in other areas around the Irish Sea. The simple forms with thickened rims on the other hand, though undecorated, are seen to be related to earlier pottery styles in England such as Abingdon Ware. As with other elements of the pre-cairn Neolithic phase, it has not proved possible to provide any stratigraphic distinction between the two styles, and they are therefore best regarded as a single group. Darvill has shown that all the pre-cairn pottery could have been manufactured locally, and hence the importance of the assemblage in suggesting a fusion of these two ceramic traditions, with affinities to the east and to the west.

Although there is difficulty in distinguishing the

full complement of the pre-cairn Neolithic flint assemblage because of admixture with Mesolithic industries, it is probable that the Neolithic finds are reasonably typical of what one would expect on a settlement site in Western Britain. All the raw materials have probably been obtained at some distance from the site, predominantly from Pleistocene deposits probably in either Glamorgan or in the north Cotswold area. Scarcity of raw materials and their poor quality is suggested by the small size of cores and by the high proportion of implements; it is also reflected in the smallness of most of the scrapers and arrowheads, suggesting that many of these implements were manufactured locally. Different raw materials were used for three ogival arrowhead fragments and the axe fragments found in pre-cairn contexts; these are made in better quality flint, or igneous rock in the case of one axe fragment, implying that items of these types arrived at the site by some different mechanism. Axe-sharpening is probably represented by a polishing-stone found within the cairn; it is thought that this is most likely to have derived from the pre-cairn phase, although at West Kennet, Piggott considered the axe-sharpening marks on slabs within various parts of the tomb to have been formed during the construction of the monument itself (Piggott 1962, 21).

THE CHAMBERED TOMB

The long cairn clearly lies within the Severn-Cotswold tradition, its closest parallels being with other excavated sites of this type around the Brecknock Black Mountains. There are no radiocarbon dates for materials which can be certainly attributed to the construction of the cairn, but a single determination from a pre-cairn Neolithic context would suggest that it may have been built by the end of the fourth millennium bc. Dates for materials associated with the final blocking of Chamber 2 would suggest that the tomb was formally closed by a date of about 2500 bc.

The excavations have shown that there were originally three or four lateral chambers, set within a cairn of trapezoidal shape, at least 45 m in length; it was orientated east-south-east to west-north-west, it had a forecourt at its eastern end, and the cairn was retained by a double revetment wall. There is little doubt that the main elements of the tomb, its lateral chambers, forecourt, cairn and revetment walls, fulfilled by means of a formalized programme of construction a single pre-determined design. The only suggestion that the cairn might have been a multi-period construction is the 'awkward' orientation of Chamber 1, but this is contradicted by other evidence. None of the capstones survived in position, but it appears that the outer passages of each of the chambers, which are formed exclusively of dry-stone walling, were unroofed from the line of the inner of the two revetment walls. This would be expected in

terms of customary constructional techniques (for where capstones do survive in Severn-Cotswold tombs they are normally supported by orthostats or by a combination of orthostats and walling), and is also explicable in terms of function: rather than the outer passages providing an entrance which could be used at any time, it would seem that they served to define the limits of temporary chamber blockings. The entrance to the chambers themselves would have been on the line of the inner cairn wall, and except on those occasions when entry to the chambers had to be made, the outward appearance of the cairn would have been unbroken, in the manner of some terminally-chambered tombs. Chambers 2 and 3 were probably appreciably lower than Chamber 1, and Chamber 4 even lower still (judging by the size of the stones employed), suggesting that the cairn diminished in height towards the west in a way which confirms the apparent unity of the overall design.

Little evidence of burial has been forthcoming, at least partly due to the later disturbance of the chambers; Chambers 1 and 2 were alone in containing skeletal material and in both cases this was slight and very fragmentary. However, evidence has survived in the form of alterations to the chamber entrances which undoubtedly shows that some of the chambers were entered upon several occasions before they were finally sealed by blocking structures placed outside the cairn. It is unknown whether each of the chambers was finally sealed at the same time, but in several instances these blocking structures clearly preceded the closure of the entire tomb by the concealment of the outer face of the cairn. The forecourt too was blocked, but it is uncertain whether this procedure was contemporary with the chamber and revetment blockings elsewhere.

The majority of the Neolithic artefacts from the site appear to belong to the pre-cairn phase, and little can be securely attributed to the period of the tomb's use. This might imply that by this stage the site was remote from domestic or other activities likely to leave much archaeological trace. Little material can be safely regarded as being grave goods, although there is a certain amount of material including fragments of several Peterborough vessels which appear to be associated with the final external blocking of Chambers 2 and 3. Although too little skeletal material has survived for any sensible analysis of the funerary activities which took place, the evidence for the successive blocking and unblocking of the chamber entrances would suggest that successive collective burial was a feature of the burial ritual.

Three major points have emerged from the excavations which are important in terms of the study of Severn-Cotswold tombs as a whole. Firstly, the recovery of a relatively complete plan of an entire (although admittedly heavily damaged) monument, bearing features which seem to characterize the Breconshire tombs, is valuable in suggesting regional groupings within the Severn-Cotswold tradition

(p. 144). Secondly, the recognition of a sequence of ceremonial structures, beginning in timber, suggests connexion with the earthen long barrow tradition in England. Thirdly, the documentation of a recurrent pattern of chamber blockings provides information (poorly recorded elsewhere) of how the tomb functioned. Little is controversial, but the recognition that the outer walls of the cairn were visible until the tomb was finally closed, is clearly at variance with theories propounded elsewhere (eg Grimes 1960, 52-59; Clifford 1936, 136-38), and can only be resolved by a reconsideration of this question: stone masses lying beyond the outer walls of Severn-Cotswold tombs may well be deliberate constructions, but in the case of Gwernvale they were not contemporary with the construction or use of the tomb (p. 150).

The original form of the tomb

The maximum width of the tomb towards the forecourt must have approached 17 m. At the other end it probably narrowed to as little as *c.* 6.5 m, and consequently is unlikely to have exceeded the surviving length of *c.* 45 m by very much. The length of the forecourt, *c.* 5 m, is relatively deep for a Severn-Cotswold tomb, and at its inner end was a single orthostat. The form of the horns is uncertain due to the poor state of preservation, but it does appear that the southern horn was originally both broader and shorter than the northern one. Even allowing for some erosion of the gravel terrace it appears from the ground profile that the southern horn cannot have extended much further than suggested on some of the plans. The cairn probably only ever enclosed four chambers; three of these were on the southern side of the cairn and one on the north. It appears that the three eastern chambers at least were set out by reference to the longitudinal axis of the cairn: the inner end of Chamber 1 stops on that line and the inner ends of Chambers 2 and 3 lie equidistant from and almost parallel with it. This apparent unity of design is confirmed by various suggestions that the cairn and its outer revetment gradually diminished in height away from the forecourt.

It appears that in the primary build of the cairn the outer revetment wall was unbroken, passing across the entrances to each of the passages (p. 61). As at Penywylrod, Talgarth, it may also have defined a squared end to the cairn. However, provision was made during the primary construction for access to each of the chambers, by means of passages through the thickness of the outer wall, which would normally be blocked except when entry needed to be made. In the case of Chambers 1-3 a breach through this wall had been subsequently reinstated. During the life of the cairn this may have been repeated a number of times, and may have been undertaken with some care, even though less order seems to have been observed in the final blocking procedures. The outer passages appear to have been un-roofed, and it is likely that entry to the chamber proper was in each

case by means of a roofed passage which began as a low lintel upon the line of the inner cairn wall. Beyond this point the inner passage might either rise in height or have remained at the same level until the higher chamber was reached. Since one of the main functions of the outer cairn wall seems to have been to act as a blocking for this entrance, it would suggest that the outer cairn wall was in each case at least the same height as the first lintel, unless the position of the chamber was indicated by its exposure.

There are reasons to suppose that the capstones of the inner passages and of Chambers 1-3 were themselves overlain by cairn material (p. 72). This being the case, it would seem likely that the inner cairn wall would have risen to the same height as the cairn above the outer end of the inner passage, and presumably the body of the cairn as a whole would have risen to at least the height of the cairn overlying the adjacent chamber capstones. We have seen that the headroom within Chamber 1 was *c.* 1.7 m; the fact that the portal stone within the forecourt was potentially the most massive stone at the site, and that the outer revetment wall was thickened here, would suggest that the cairn was even higher at this point, and possibly rose to as much as 2.5-3 m. By way of comparison, the complete portal stone at Pipton, Brecons., rose to *c.* 2.4 m (Savory 1956, 32), the two portal stones at Penywylrod, Talgarth, are *c.* 2.2 m high, and at Rodmarton, Glos., it was suggested that the height of the portal was approximately 2.9 m (Clifford and Daniel 1940, 142). The inner part of the inner passage of Chamber 1 would have been at least 1.4 m high, and the slighter stones at the outer end of the inner passage would suggest that the roof here was originally lower, possibly only reaching a height of about 1 m. For the reasons which are given above, this might have been the height of the outer cairn wall at this point, with the cairn rising to *c.* 2 m above the capstone of Chamber 1.

It would appear that the headroom in both Chambers 2 and 3 would have been *c.* 1.3 m. The outer passage of Chamber 2 was originally only *c.* 0.7 m high, and the minimum height of the cairn above the passage would have been *c.* 1.2 m (p. 72). The inner part of the inner passage of Chamber 3 was probably of a similar height to the chamber itself—*c.* 1.3 m—but the roof may have dropped dramatically in height on the line of the inner revetment wall to be supported by dry-stone walling and paired orthostats along the line of the inner revetment wall. The outer cairn wall outside Chamber 3 still stood to a height of *c.* 0.6 m, and may never have exceeded *c.* 0.8 m in height (p. 85); this may have been the approximate height of the lintel at the entrance to the roofed chamber on the line of the inner revetment wall. The outer wall on the southern side of the cairn at this point may also have been of a similar height, since the inner passage of Chamber 2 was originally *c.* 0.7 m. In order to cover the inner parts of Chambers 2 and 3 the body of the cairn would need to have risen to at least *c.* 1.5 m. This, taken with the

suggested height of the outer revetment wall at this point, implies that the lateral profile across the cairn had sloped down symmetrically from a central axis to the revetment wall on either side.

There is no evidence of the height of Chamber 4, but the dimensions of the surviving stones would suggest that it was originally much lower than the other chambers. Thus the cairn may have continued to decrease in height to the western end of the cairn, perhaps to as little as 0.5 m. The small second chamber at Pipton (Chamber II), which is placed in a similar position within the cairn, would originally have been *c.* 0.6-0.7 m in height (Savory 1956, 25). At Gwernvale, the short concave wall at this end of the cairn was backed by the boulders of the inner body of the cairn in the manner of the walling within Chambers 1-3. Although there is no definite evidence that it formed part of Chamber 4, it was almost certainly part of the original structure of the cairn.

Several points of interest emerge from the suggested reconstruction of Gwernvale with reference to the visual appearance of other forms of Neolithic funerary architecture. Firstly, because the position of the lateral chambers was 'concealed' during its period of use, the tomb would have appeared similar to the terminally-chambered tombs within the Severn-Cotswold group. Secondly, the outer walls of the cairn may have risen to form an impressive façade at the forecourt, in the manner that has been suggested for timber revetments at the site of various earthen long barrows (*eg* Fussell's Lodge, Wilts., Ashbee 1966, 6-7). Lastly, it has been suggested that the ridged profile may have been an original feature of at least some Severn-Cotswold tombs (Corcoran 1969, 78), and more recently in the case of the earthen long barrow at Beckhampton Road (Ashbee *et al* 1979, 244).

Corcoran has proposed a threefold division of Severn-Cotswold tombs: cairns with simple terminal chambers; cairns with transepted terminal chambers; cairns with lateral chambers (Corcoran 1969, 41-68). A fourth group he classified as 'hybrids' and 'miscellaneous'. Daniel proposes to refer to these respectively as the Randwick-Tinkinswood type, the Notgrove-Parc le Breos Cwm type, and the Belas Knap-Rodmarton type (Daniel 1970, 263). Gwernvale clearly belongs with the last of these variants, which is more characteristic of the Black Mountains and Gloucestershire than elsewhere (Savory 1963, 31, fig. 7). In several tombs of this group the chambers are placed 'back to back' and with entrances on opposite sides of the cairn, as in the case of Chambers 2 and 3 at Gwernvale (*eg* Belas Knap, Glos.; Luckington, Wilts.; Ty-isaf, Breconshire). Other chambers at some of these sites are single, as in the case of Chamber 1 at Gwernvale. The shape of the cairn and the presence of a relatively deep forecourt are sufficiently well known amongst this group to require no special comment; so too is the presence of doubled revetment walls, which one supposes have not been discovered at some tombs due to the limited scale of their investigation.

The form of the chambers at Gwernvale may seem to be unusual within the Severn-Cotswold group. Chamber 1 is polygonal and is entered from the side of the cairn by means of a crooked passage. The shape of the chamber itself is similar to those at Belas Knap, Glos. (Berry 1929), but possibly the closest parallel is that at Arthur's Stone, Herefords., about 25 km north of Gwernvale (Hemp 1935*b*) which appears to have a long polygonal chamber entered by way of a crooked passage (fig. 65). The crooked passage is again a feature of Chamber I at Pipton, Breconshire, less than 20 km away (Savory 1956), but there the passage provides access to a transepted chamber (fig. 65). The form of Chambers 2 and 3 at Gwernvale is without close parallel within the Severn-Cotswold tombs of England and the southern coast of Wales, although they approach the form of the asymmetrical transepted chambers at Pipton and Ty-isaf, which are included in Corcoran's 'miscellaneous' class. The same general form is interestingly again represented at Capel Garmon, an outlier of the Severn-Cotswold group in Gwynedd, North Wales (Hemp 1927; Lynch 1969, 103). Chambers at all these sites compare with French examples in Finistère classified by L'Helgouach as *Les dolmens à couloir en T* (L'Helgouach 1965, 165-70; Corcoran 1969, 86). The chambers at Pipton and Ty-isaf are by no means typical of the transepted chambers elsewhere in the Severn-Cotswold group either in terms of their shape or their position within the cairn, and possibly the chambers at these sites and at Gwernvale should be distinguished as a local variant of the transepted form, which we might also call 'T-shaped'. All the chambers of this form in the Black Mountains are exceptional in terms of the transepted terminal chambers found elsewhere within the Severn-Cotswold area, and as we have seen, the chamber form and the crooked passage are features which appear to be restricted to tombs in this Welsh group.

There are still too few radiocarbon dates for Severn-Cotswold tombs as a whole for any very meaningful discussion of the relative dating of different types of plan within the tradition. At Gwernvale there were no samples dating the construction of the tomb, and the interval of time between this and the preceding Neolithic activity, dated on the basis of a single radiocarbon determination of *c.* 3100 bc, is unknown. The date from human bone found within one of the chambers at Penywylrod, Talgarth, (3020 ± 80 bc, HAR-674) and the only other dates associated with a laterally-chambered tomb—from beneath the mound at Ascott-under-Wychwood (2943 ± 70 bc, BM-491b; 2785 ± 70 bc BM-492)—are not significantly different. Neither is the Penywylrod date significantly different from that beneath the terminally-chambered tomb at Wayland's Smithy, Berks. (2820 ± 130 bc, I-2328) due to the broad standard error quoted for that sample. In terms of absolute date, therefore, there is no reason to suppose

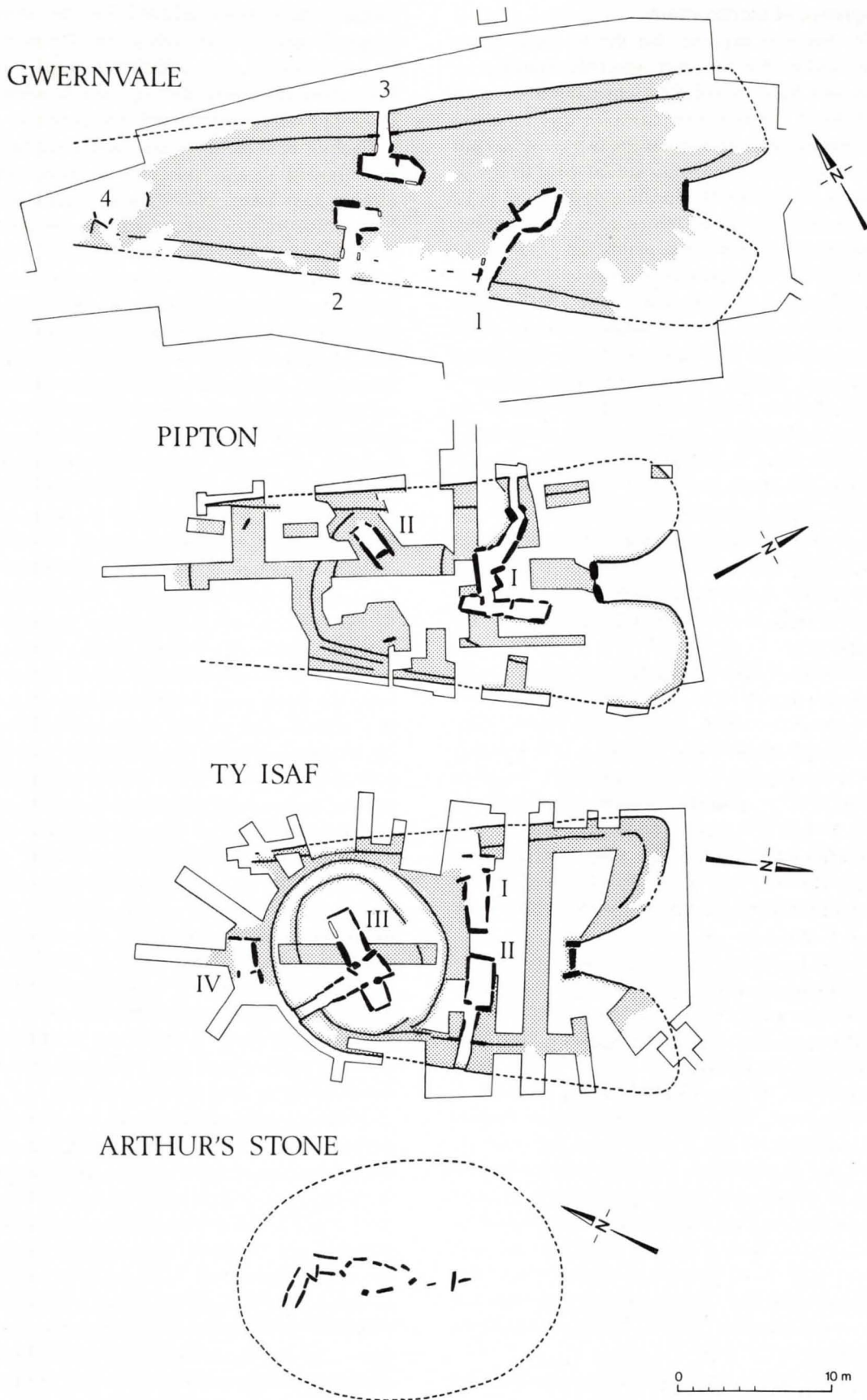


Fig. 65. Comparative plans of some Severn-Cotswold tombs in the Black Mountains group.

that Gwernvale is either earlier or later than other types of tomb within the Severn-Cotswold group, at least on present evidence. Corcoran's suggestion (1969, 100) that terminally-chambered tombs may be

only a later development, however, is supported by Darvill's study of the pottery evidence from sites in England and Wales (p. 110).

The sequence of construction

There is reason to suppose that the six-post timber structure within the forecourt was still standing, or had only just been demolished when the long cairn was completed: the axis of the cairn lies directly along that of the six-poster, and unless the two were laid out independently from some unidentified third structure on the same alignment, it appears that the cairn must have been laid out by reference to it. The timber structure must have been reasonably temporary, and it may in some way have been associated with the construction of the cairn. The shape of the cairn approximates to that of an isosceles triangle whose proportions of base to height are 1 : 4. This shape could be most readily achieved by off-sets from a central line (as has been suggested in the case of the trapezoidal enclosure at Fussell's Lodge, Wilts., see Ashbee 1966, 36). The shape could have been derived empirically, for there is a direct ratio between the base and width measured at right-angles to the altitude of such a triangle. Certain correspondences between the geometry of the cairn and the positions of features within it would suggest some degree of careful planning and the use of proportions or units of measurement.

No evidence of 'marker-stones' was found for the outer revetment walls in the manner reported at other Severn-Cotswold tombs (*eg* Grimes 1939, 124). Stones in apparently similar positions at Gwernvale were considered more likely to have either arrived in a vertical position against the outer revetment wall after the completion of the tomb, or were natural stones firmly embedded in the subsoil which were there by chance. There was no evidence for the special preparation of the ground surface beneath the cairn.

Once the axis of the long cairn had been established and the shape and limits of the intended cairn decided upon, one may suppose that the construction of the chambers began—their disposition being dictated to some extent by the limits and orientation of the intended cairn. Although it appears that the crooked passage of Chamber 1 would suggest a change in the planned orientation of the cairn during construction, no confirmation for this apparent anomaly was found during excavation: a 'primary cairn' could not be distinguished around the chamber, and its passage clearly respected the inner revetment wall in a manner similar to the other chambers. Furthermore, it has been argued that this eccentricity of plan is a feature of other cairns in the Brecknock group (p. 144).

Most of the orthostats of the chambers were bedded very shallowly in the ground; many of them may originally have been placed directly onto the contemporary ground surface, and like the basal courses of the cairn may have subsequently sunk by their own weight through the buried topsoil. Others were probably set in shallow holes dug down into the subsoil, and propped as necessary by smaller stones wedged against or beneath them. Some stability may

initially have been achieved by the stones being propped against each other, in the manner of a 'house of cards', but additional support may have been given by stones built up outside while the next orthostats were manoeuvred into position.

Each of the chambers may well have been set out with regard to the axis of the cairn, which may already have been defined by an axial line of stones. Such a feature was recognized between the forecourt and the south-east corner of Chamber 1, but further excavation of the cairn would be necessary to establish whether it existed elsewhere. No 'primary cairn' material could be found around Chamber 1, but Chambers 2 and 3 were enclosed by different materials: unlike the inner cairn elsewhere, the material enclosing them was distinguished by a high proportion of quarried stone. However, it appeared that this 'cairn' and the chambers which it enclosed could never have been a free-standing structure existing before the erection of the long cairn itself, because on the south-east side of Chamber 3 one orthostat was butted directly against the more usual kind of cairn material (fig. 32). Nor did it appear that the chambers could have been inserted into an existing cairn. It seemed more likely that the construction of Chambers 2 and 3 had only begun once the inner part of the cairn had been started at the eastern end of the cairn, and that the area immediately around the chambers was reinforced with stone then to hand, including perhaps debris derived from the quarrying of the orthostats. Once the two chambers had been consolidated the western end of the cairn could then be completed, once again with stone obtained more locally. Since little of the cairn was excavated it is possible that other subdivisions within it were not recognized; the material around Chambers 2 and 3 could be distinguished because it was formed from different kinds of stone, but elsewhere the use of a uniform material, normally rounded or irregularly shaped blocks of stone, would give perhaps little indication of subdivisions or even internal walling.

There is little difficulty in supposing that the different parts of this initial operation could have been undertaken more or less simultaneously—the erection of the orthostats, their consolidation by stone packed immediately around them, the build up of the remainder of the inner cairn, and the construction of the inner cairn wall. The walling within all the chambers and the inner passages was all constructed of similar stone to the outer revetment walls of the cairn, but would presumably have been placed in position during or soon after the erection of the orthostats. The coursed stonework was generally fitted neatly between the large uprights and immediately backed by the coarser, weathered boulders of the inner part of the cairn surrounding the chambers.

The capstone above Chamber 1 was fairly massive, according to the accounts of the investigation by Colt Hoare in 1804. Some others may have been relatively

slight (p. 72), but the chamber walls would need to have been well buttressed to withstand their positioning. Completion of the first stage in the construction of the cairn may therefore have seen the chambers, still unroofed, each with its inner passage joined to the inner wall of the cairn—the inner wall acting as a temporary revetment to the cairn which rose to the tops of the chamber walls. The chambers would then have been stabilized by the cairn around them, which would itself have provided a secure and level approach over which the capstones could be hauled. The capstones, like the other stones forming the chambers, would undoubtedly have been brought from outcrops of sandstone to the north of the site, and this might explain the apparent anomalies in the outer revetment wall on this side of the cairn (p. 57). The outer wall here contained a higher proportion of types of stone more characteristic of the inner part of the cairn, and it seems possible that it could be the remains of a ramp built up against the inner wall (later incorporated into the construction of the outer wall) in order to raise the capstones of the chambers. The portal stone could also have been added at this stage, to lie within the skeleton of the forecourt, assuming that the timber structure had gone.

Gaps between the walls and the roofs of the chambers could have been plugged with stone when the capstones were placed in position, or immediately afterwards (*cf* the evidence from the inner passage of Chamber 2, p. 72). It seems likely that all the capstones were then concealed by further cairn material piled above them (p. 72), and that the inner revetment wall was brought up to the same height as the outer ends of the inner passages at least, or possibly to the height of the chambers. It appears that Chambers 2 and 3 were lower than Chamber 1, which suggests that even at this preliminary stage there was an intention to produce a monument which gradually decreased in height from the forecourt.

Possibly only at this stage was the outer revetment wall begun, since by now all the heavy work involved in the construction of the inner part of the cairn and the engineering required in manoeuvring the orthostats and capstones into position would have been completed. These processes might otherwise have disturbed the fine walling which faced the cairn, and which seems to mark the completion of the entire tomb. The outer walling seems to have satisfied two requirements: firstly the enhancement of the tomb's outward appearance, and secondly the primary concealment of the chamber entrances, possibly at a stage even before any of the chambers had been used for burial or any other funerary activity. The outer walls were built of specially selected stone and would have either been vertical or slightly battered inwards. Although the horns of the cairn are incomplete, it appears that the outer walls were thickest at their very ends (possibly over 2 m). This is a feature known at various other Severn-Cotswold tombs (*eg* Burn Ground, Glos., Grimes 1960; Notgrove, Glos., Clifford 1936), and may be explained as the broader

foundation necessary to provide a higher façade. It should be borne in mind that nowhere was the outer wall bonded into the inner part of the cairn, and if a higher facing was required, the only means of achieving greater stability would have been to increase its thickness. This may therefore be taken with other evidence to suggest that the cairn diminished in height away from the forecourt. Elsewhere, however, the outer walls were still 1 to 1.5 m thick, more possibly than would be required for stability or purely aesthetic reasons. The purpose of this appears to be explained by the fact that they fulfilled an additional function—the concealment of the chamber entrances. At not a single Severn-Cotswold tomb where evidence of double walling has been recorded, have capstones been found covering the outer passage, even on relatively well-preserved sites such as Penywylod, Talgarth. Thus it appears that the roofed portion of the passage only began on the line of the inner cairn wall.

At various laterally-chambered Severn-Cotswold tombs it has been found that the outer revetment wall continued uninterrupted (in the lowest courses at least) across the ends of the chamber passages (within the Black Mountains group for instance see the following: Ty-isaf, Chambers I and II, Grimes 1939; Penywylod, Talgarth, Chambers NE II and NE III, present report). This is consistent with the evidence from Gwernvale: although each of the passage entrances was partly masked by a wall on the line of the outer revetment of the cairn, in the case of Chambers 1-3 these have been apparently inserted in a rough gap caused by the removal of the original construction which passed across the ends of the passages. In each case, provision had been made for access to the chambers by walled passages behind the outer revetment and leading into the inner roofed part of the passage. In some instances the walls of the outer passage were clearly of a much cruder and more robust construction than the prestigious walling on the outside of the cairn, and coarser even than the walling linking the orthostats within the chambers (see pl. 25a).

It seems probable that the walls leading through the thickness of the outer revetment wall were never intended to create passages in the true sense, but rather to act as the revetment of cairn material on either side of a gap which, from the first, had held blocking material concealing the chamber entrances. The appearance of the passage walls would be of little consequence if they were only visible for short periods while the chambers were opened, and their presence would be helpful in delimiting the minimum amount of material to be removed in order to gain access to the chambers. This is not to deny that at other Severn-Cotswold tombs other means of entry were provided (*eg* the southern chamber at Rodmarton, Glos., Clifford and Daniel 1940, 139). At Gwernvale there is no suggestion that the addition of the outer wall was far removed in time from the construction of the chambers and the inner part of the cairn; on the

contrary, it seems to have been part of the original conception and alone makes sense of the form of the chambers which would otherwise have been open and unguarded. The choice of different kinds of stone here is not a necessary consequence of different periods of construction, for the walling within the chambers and the inner passages is of material from a similar source.

Thus upon completion, the tomb probably appeared as a long trapezoidal cairn with sides carefully faced with vertical walling, gradually diminishing in height away from the forecourt at one end. The chambers may still have been empty and un-used, and although provision had been made for their subsequent entry, their entrances were probably successfully concealed. Although it is possible that the cairn had a stepped appearance, there is insufficient evidence from Gwernvale to enter into argument upon this point. The fact that the surviving courses of the inner revetment were of very coarse construction, apparently never intended to be seen, might argue that the outer wall rose to conceal it altogether; but alternative arrangements may have been made at a greater height, of which no evidence has survived.

The putative sequence of construction was clearly distinct from that evident at other single-period

Severn-Cotswold tombs, as for example at Burn Ground (Grimes 1960, 66-68) and at the recently excavated tomb at Hazleton, Glos.²⁸ Whatever means were adopted in each case, a prime consideration was undoubtedly the final form of the monument. Since a similar pattern is also evident in earthen long barrows, which must have functioned in a different manner, it raises the question of whether all the megalithic tombs in this tradition in different areas were necessarily used in the same way (*cf* Whittle 1977, 208).

The function of the tomb

The primary construction of the cairn probably effectively sealed the chambers, and it is not known whether they would already have contained human remains, or whether they had simply been prepared for future use. Subsequently, Chambers 2 and 3 were entered up to at least three times, and Chamber 1 at least once, by the removal of parts of the outer revetment wall across the passage entrances (*fig.* 66). Following each occasion it seems probable that the outer passages were refilled with stone, and that the outer wall was reinstated to its full height, in order to conceal the entrance again, or at least to prevent casual access (*fig.* 67). Temporary blockings of the

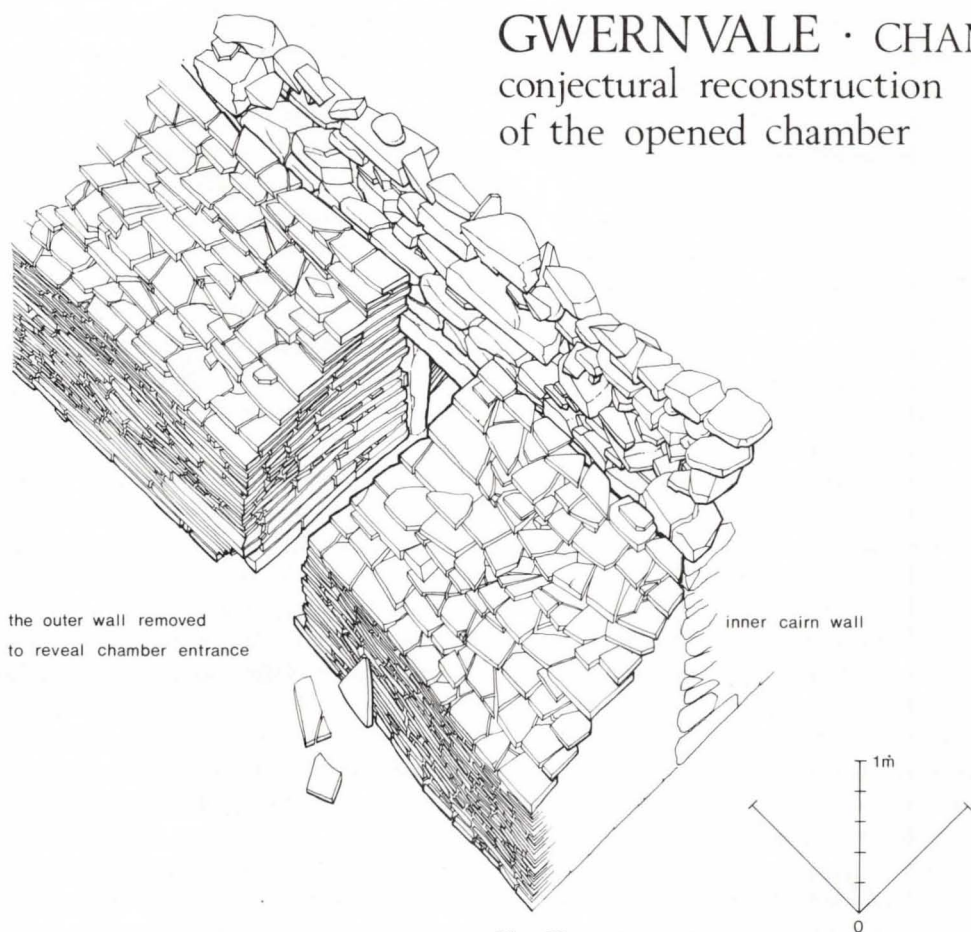


Fig. 66

²⁸ *Current Archaeology*, VIII (1983), 109-10.

GWERNVALE · CHAMBER 3

conjectural reconstruction of
'temporary' chamber blocking

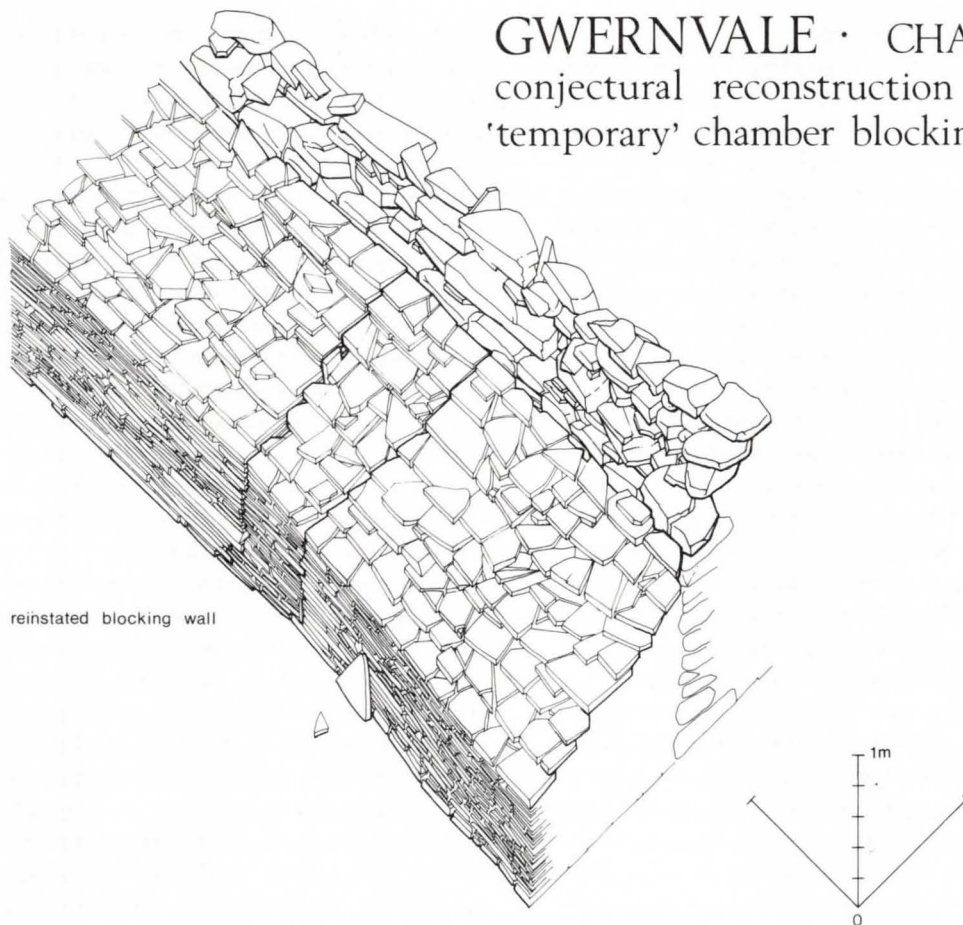


Fig. 67

passage may have been retained on the line of the inner revetment in the manner of the stone stack employed in this position during the final closure of Chamber 3 (p. 83, fig. 23 iii, c). The blocking structures found outside Chambers 2 and 3 appear to be specifically related to their final closure, and probably do not reflect arrangements made for their concealment while they remained in use. In the case of Chambers 2 and 3, the inserted walling had been poorly bonded to the outer revetment wall upon either side. However, the arrangements here may reflect the situation immediately before the final closure of the tomb, in which case there may have been no necessity to replace the wall in the normal manner since it would itself soon be concealed by cairn blocking. Alternatively, it is possible that the gaps made through the walls were replaced with more care at a greater height above ground level.

By the nature of these entries, it is possible that they were repeated many more times than there is evidence for, without leaving any trace. There is no definite evidence that Chamber 4 had ever been employed; the evidence of whether a breach had ever been made through the outer wall is ambiguous (p. 87), but in any case only the basal layer of the outer revetment wall survived, and it would have been quite possible for entry to have been made at a higher level without disturbing the lowest part of the

wall. Very little human skeletal material was found within any of the chambers, and it is uncertain to what extent this is simply a consequence of later robbing. In the case of Chambers 2 and 3 it appears that entry was made just before the final closure of these parts of the cairn; Chamber 3 was probably essentially voided at this stage, with the final blocking limited to the outer passage. The total absence of human remains here raises the possibility that this chamber along with the others had been systematically emptied before this time.

Few artefacts can be certainly assigned to the period of the tomb's use, and a high proportion of the features which were contemporary with the cairn may only have preceded the final closure by a short interval of time (p. 93). The only activity within the forecourt which had left any lasting trace was represented by a slight scarping of the ground surface (p. 64). The scale of activity is apparently markedly less than in the pre-cairn Neolithic phase, suggesting that the site may have lain remote from settlement, or at least attracted few of those activities which might be expected to leave more substantial traces. There is insufficient evidence to allow an interpretation of the precise functions of the tomb, but the repeated entry made to some of the chambers was presumably for the deposition, inspection, or removal of human remains.

The final closure of the tomb

Final closure of the tomb is dated by two radiocarbon determinations of *c.* 2440 bc and *c.* 2640 bc from features which seem to be associated with this activity. These would suggest that the cairn had remained in use for a period of up to about 600 years, during which time some decay of the original structure had taken place. Closure was effected partly by raking down unstable stretches of the cairn walling and partly by the importation of new quantities of stone, with the apparent intention of masking all the external features of the cairn. It is reasonable to suppose that this all took place more or less simultaneously, but the lack of any stratigraphic link between the northern and southern sides of the cairn and the forecourt leaves the question unanswerable. There is evidence that parts of both sides of the cairn were concealed soon after the final blocking, since in the case of Chambers 2 and 3 it appears that in a break with former tradition little attempt was made to disguise the passage entrances on the line of the outer revetment wall. So little blocking remained in the forecourt that the evidence of deliberate blocking here rests solely upon the presence of a different kind of stone. Whereas the masking of the sides of the cairn clearly brought to an end the use of the chambers, it is possible that the forecourt could have been blocked in advance or at a later date (or even, indeed, repeatedly blocked and unblocked), without necessarily affecting the functioning of the tomb.

The presence of various pits outside the entrances to Chambers 1 and 2, which seem to have remained open until immediately before the chambers were finally blocked, suggests that they may in some way have been connected with the blocking of the chambers (p. 93).

The fact that new quantities of stone seem to have been brought to the site at this late stage suggests that some effort was made to control the eventual form of the monument. Although parts of the dilapidated structure appear to have been deliberately demolished, further demolition may have exposed the chambers themselves. It would seem that the intention was rather to produce a featureless cairn which mirrored the size and shape of the original structure (see the suggested original extent on fig. 28). Undoubtedly this could be seen as a procedure

which merely accelerated the natural processes of decay, and which achieved the same end results; it might be that the 'instant' production of an archaic form—a tomb which had clearly ceased to be used for formal mortuary activities—may have been a primary objective. This may have dominated the requirements of concealment which had probably been adequately performed by blocking walls on the line of the outer revetment for some considerable time. Several different vessels are associated with the final blocking, which seem to fall into groups, each related to a separate chamber. The quantity and size of the sherds in some instances would suggest deliberate deposition during the course of this activity, and this latest assemblage includes two Peterborough vessels, a style which makes its first appearance at the site at this time.

Excavation at some other Severn-Cotswold tombs has suggested that the additional material piled up against the outer walls of the cairn was a primary constructional feature. Whereas this cannot have been the case at Gwernvale, the subsequent conversion of the tomb to this form at a later date would suggest that some tombs could indeed originally have been constructed in this way. It is significant that both these procedures can also be paralleled in the earthen long barrow tradition. At Fussell's Lodge, for example, the timber revetment along the sides of the mound must originally have represented a standing wall retaining the sides of the mound (Ashbee 1966, 30). By contrast, the presence of the outer revetment bank at Beckhampton Road (Smith, in Ashbee *et al* 1979, 244-45) and the absence of outer retaining stakeholes at South Street (Evans, in Ashbee *et al* 1979, 259), suggests that the outer profiles of the barrows in these two cases were sloping.

Why the tomb should have been closed in this manner is a matter of conjecture, but it clearly took place at a date towards the end of the long barrow tradition in southern Britain as a whole (Smith 1974, 124). That so much effort seems to have been expended in performing it, would imply that the tomb held or retained symbolic functions irrespective of those concerned with burial, and possibly to be associated with territoriality (Renfrew 1976).

Appendices

I. DETAILS OF FEATURES

In the following tables all dimensions are given in metres, depths are given from the local surface of the B horizon of the buried soil, and levels are given in metres above Ordnance Datum. For *areas*, see the guide given on figure 30, and for *stratification* see details given at the foot of the appropriate tables. The

TABLE 1: DETAILS OF POSTHOLES ASSOCIATED WITH TRENCH F133

No.	Diam.	Depth	Level of base	Diam. of post
F133A	0.22	0.12	76.99	0.22
F133C	0.21	0.30	76.84	0.12 × 0.16
F133E	<i>c.</i> 0.42	0.38	77.07	0.14 × 0.20
F133G	<i>c.</i> 0.28	0.22	76.91	0.11 × 0.25

TABLE 2: DETAILS OF SIX-POSTER POSTHOLES

No.	Diam.	Depth	Level	Diam. of post
97A	—	<i>c.</i> 0.27	76.99	—
207	0.40	0.36	76.73	0.18 see pl. 16a
208	<i>c.</i> 0.44	0.31	76.82	0.16
209	<i>c.</i> 0.42	0.33	76.84	0.16
210	<i>c.</i> 0.44	0.23	76.92	<i>c.</i> 0.16
211	<i>c.</i> 0.5	0.32	76.81	0.18 see pl. 16b and c

TABLE 3: PRE-CAIRN NEOLITHIC PITS, SCOOPS AND GULLIES

No.	Area	Strat.	Depth	Flint	Pot	Comment
68	4	<i>a</i>	0.58	Yes	13	Pit. Finds from upper layer and associated with C14 date from charcoal of <i>c.</i> 3100 bc (Appendix II)
72	4	<i>a</i>	0.15	—	Yes	irregular hollows
149	3	<i>a</i>	0.21	41	10	irregular gully, microlith
150	3	<i>a</i>	0.11	Yes	10	shallow pit
151	3	<i>a</i>	0.05	107	10	burin
162	3	<i>a</i>	0.11	210	11, 12	shallow pit, arrowhead
163	3	<i>a</i>	0.06	Yes	10	
167	3	<i>a</i>	0.15	Yes	3, 12	shallow pit
170	3	<i>a</i>	0.29	97	Yes	pit, burin
252	4	<i>b</i>	0.18	—	Yes	
255	4	<i>a</i>	0.14	—	Yes	
259	4	<i>a</i>	0.23	—	10?	steep-sided trench
284	4	<i>b</i>	0.24	—	—	burin spall
287	4	<i>b</i>	0.15	—	11?	irregular gully

a = sealed beneath extant cairn, *b* = within area of cairn but where this is robbed away.

presence of undiagnostic or un-catalogued flint and pottery is indicated, and numbers given in bold type refer to finds catalogue entries, which in the case of pottery indicates the presence of sherds ascribed to a particular vessel and not necessarily to the sherds illustrated.

TABLE 4: UNDATED FEATURES SEALED BENEATH THE CAIRN

No.	Area	Depth	Flint	Comment
142	3	0.07	Yes	short gully
143	3	0.08	Yes	
144	3	0.03	Yes	
145	3	0.03	Yes	
146	3	0.04	—	
147	3	0.05	—	
148	3	0.04	—	
152	3	0.08	Yes	
153	3	0.07	Yes	
154	3	0.06	Yes	
157	3	0.06	Yes	
158	3	0.09	Yes	
159	3	0.12	99	flint burin
160	3	0.12	Yes	
164	3	0.09	Yes	
165	3	0.04	Yes	
168	3	0.12	150	flint scraper
169	3	0.15	Yes	
176	3	0.07	—	
179	3	0.07	—	
180	3	0.04	—	
193	3	0.10	—	
194	3	0.06	—	
195	3	0.05	—	
196	3	0.09	—	
205	3	0.28	Yes	?posthole
206	3	0.32	Yes	?posthole with post <i>c.</i> 0.16 m in diameter
231	2	0.11	110, 182	burin and knife
251	4	0.09	—	
253	4	0.09	—	
254	4	0.08	—	
256	4	0.09	—	
257	4	0.10	—	?part of pre-cairn structure
278	5	0.20	Yes	
286	4	0.16	—	
289	4	0.16	—	
295	5	0.48	—	
296	5	0.40	Yes	
297	5	0.60	Yes	
298	5	0.10	—	
299	5	0.10	—	

continued

Table 4 continued

No.	Area	Depth	Flint	Comment
300	5	0.35	—	
301	5	0.36	Yes	
302	5	0.20	—	
303	5	0.15	—	
304	5	0.25	—	
305	5	0.25	—	see section on fig. 16
311	1	0.11	229	flint piercer; see section on fig. 16
317	1	0.10	—	profile on fig. 16
319	1	0.10	—	section on fig. 16
323	1	0.20	—	section on fig. 16
324	1	0.20	—	section on fig. 16
328	1	0.05	—	section on fig. 16

TABLE 5: UNDATED AND UNSTRATIFIED FEATURES WITHIN AREA OF CAIRN

No.	Area	Depth	Flint	Comment
226A*	2	0.13	Yes	charcoally fill
226B*	2	0.06	—	charcoally fill
230*	2	0.05	—	
232*	2	0.12	—	
250	4	0.08	—	
258	4	0.09	—	
261*	2	0.07	—	
264*	2	0.07	—	
266*	2	0.03	—	
267*	2	0.10	—	
275*	2	0.03	—	
282-3	4	0.17	—	?part of pre-cairn structure
285	4	0.20	—	

Upon the basis of plan alone, those features marked with an asterisk might have been associated with the timber structure beneath the northern horn of the cairn.

TABLE 6: FEATURES POSSIBLY CONTEMPORARY WITH THE CAIRN

No.	Area	Depth	Flint	Pot	Comment
46	4	0.25	Yes	11?, 18	
47	4	0.35	—	25, 26	C14 date from charcoal of c. 2640 bc (Appendix II)
54	4	0.30	33	—	microlith
58	4	0.30	Yes	26, 27	C14 date from charcoal of c. 2440 bc (Appendix II)
60	4	0.30	100, 131	11?, 13	burin and scraper
67	4	0.20	—	25	
271	3	0.06	Yes	Yes	
277	5	0.08	—	31	
309	1	—	Yes	Yes	stone surface
310	1	—	—	—	stone surface
325	4	0.10	—	26	
326	4	0.10	—	25	

TABLE 7: UNPHASED FEATURES OUTSIDE THE AREA OF THE CAIRN

No.	Area	Strat.	Depth	Flint	Pot	Comment
73	4	<i>b</i>	0.15	Yes	—	
221	2	<i>b</i>	0.40	43, 70	—	?posthole; microliths
223	2	<i>b</i>	0.07	36	—	microlith; charcoally fill
228	2	<i>b</i>	0.47	Yes	—	?posthole
234	2	<i>a?</i>	0.18	47	Yes	
260	2	<i>b</i>	0.07	—	—	
290	5	<i>b</i>	0.15	—	—	
291-4	5	<i>b</i>	0.20	—	—	?burnt tree-roots
306-7	5	<i>b</i>	0.20	—	—	
312	1	<i>a</i>	0.20	—	—	
313	1	<i>a</i>	0.22	—	—	?posthole
314	1	<i>a</i>	0.24	—	—	?posthole
315	1	<i>a</i>	0.24	—	—	?posthole
316	1	<i>a</i>	0.20	—	—	?posthole
318	1	<i>a</i>	0.07	—	—	partly below F310, Table 6
320	1	<i>a</i>	0.35	—	—	section on fig. 16
321	1	<i>a</i>	0.30	—	—	section on fig. 16
322	1	<i>a</i>	0.08	—	—	

a = sealed beneath extant external blocking, *b* = not sealed.

II. RADIOCARBON DATING

by *Quentin Dresser*

The following determinations are issued by the Radiocarbon Dating Laboratory, University College, Cardiff. They are all from samples of charcoal from each of four pits.

The general significance of these dates is discussed

elsewhere (pp. 50, 88, 150). One point deserving further comment here is that contrary to the excavator's expectations there is only one chance in twenty that CAR-114 and CAR-116 actually date organic material of the same radiocarbon age.

- CAR-113 5050 ± 75 BP, c. 3100 bc (pit F68, see Table 3).
 CAR-114 4390 ± 70 BP, c. 2440 bc (pit F58, see Table 6).
 CAR-116 4590 ± 75 BP, c. 2640 bc (pit F47, see Table 6).
 CAR-118 6895 ± 80 BP, c. 4945 bc (see page 50).

III. THE HUMAN AND ANIMAL BONE REMAINS

by Timothy O'Connor

The majority of the human and animal bone remains which are described here are probably of Neolithic date, although not all of the human remains, for instance, are securely stratified. The identified material may be divided into three main groups: the first belongs to pre-cairn contexts, the second to the functional life of the cairn, and a third very small group is from deposits which were probably laid down during the final closure of the tomb.

Most of the unstratified bone from the site (because of the good state of preservation) was clearly of recent origin and was not retained for examination: one of the few exceptions was a fragment of human skull which was found in topsoil in the vicinity of Chamber 1. This and other human skeletal fragments found within disturbed contexts in Chambers 1 and 2 were more weathered and had almost certainly belonged to earlier mortuary deposits. A certain number of animal bones which came from the same contexts within Chamber 2, and which were considered to be of recent origin, were also submitted for identification for any evidence which they might provide of the date of the chamber robbing. The identified species from this context consisted predominantly of rabbit (a Roman introduction) and single fragments each of an immature sheep, a human cranium, and an unidentifiable large bird. A human tooth and phalanx which were found respectively within topsoil in the vicinity of the forecourt and from the upper part of the cairn in the area between Chamber 1 and the forecourt have been excluded from the following report for, because of their state of preservation, they too are probably of recent origin. Bones of short-tailed field vole and water vole were present among samples from the pre-cairn buried soil, the cairn itself, and the soil accumulation within the forecourt, but in view of their good state of preservation the bones of these species are most probably intrusive.

The securely stratified Neolithic remains were generally of small fragment size and in a poor state of preservation. It seems probable that the mildly acidic soil conditions at the site have affected the condition of all the bones, but physical weathering has also played a part. The pre-cairn material was predominantly from the buried soil profile and the identified fragments are very largely tooth enamel: in this instance it is likely that this differential preservation is partly the result of weathering which had been sustained even before the construction of the cairn. The remains belonging to the functional life of the cairn are by contrast predominantly of bone: the effects of differential preservation are less clearly marked and the small size of the sample is probably due to the effects of other equally unquantifiable factors—the volume of original mortuary deposits and subsequent disturbance to them.

All the stratified material was submitted for identification and the list of identifications which follows is of remains which were recovered both during excavation and from the selective sieving of deposits.

Pre-cairn contexts

Buried soil beneath the cairn. The following were found at various depths within the A horizon of the buried soil beneath the cairn, and all came from between the area subsequently occupied by Chamber 1 and the forecourt of the long cairn: *Bos* 101 frags. (65.6%); *Ovis* twenty-one frags. (13.6%); *Cervus* five frags. (3.3%), *Sus* twenty-seven frags. (17.5%). The *Sus* (pig) remains appear to be of one immature individual aged six to twelve months. The *Bos* (cattle) remains represent a minimum of two adults, with several more beasts probably being represented in many small fragments of tooth enamel. Only one adult *Ovis* (sheep) is present. The *Cervus* (red deer) fragments are of a single tooth.

F68, pit (see p. 55): *Sus*; three fragments of an adult mandibular molar.

F133, posthole and bedding-trench of pre-cairn timber structure beneath the northern horn of the cairn, (see p. 52, for location see fig. 14). From F133E (within posthole at the western end of the bedding-trench): *Homo*; two fragments of cranium (both less than 15 mm long). From initial cleaning of bedding trench F133, before excavation of the feature: *Homo*; one fragment of cranium (less than 15 mm long).

F162, pit (see p. 55): *Sus*; fifteen small fragments of an adult molar.

F297, feature below western end of cairn (see p. 55): ?*Sus*; numerous small fragments of a mammalian long bone, probably of *Sus*.

Contexts contemporary with the use of the tomb

Forecourt. From the later, pre-blocking soil accumulation came the following: *Bos* thirty frags. (81.1%); *Sus* seven frags. (18.9%). The *Bos* remains represent at least two individuals, one immature and the other adult. Likewise, the *Sus* remains represent at least two individuals, one aged about two years and the other three years or more. As in the case of other finds within this soil level, there is a possibility that some or all of the fragments are residual from the pre-cairn period (p. 96).

Chamber 1. More than a hundred small fragments of bone were recovered from the chamber and the chamber passage (for location see fig. 18), of which the largest was less than 70 mm long. The identified

remains were predominantly human, and although there is reason to doubt whether many of the items were in their original contexts (see p. 70), all were in a similar state of preservation and were probably associated with Neolithic deposits within the chamber. Less than half of the fragments could be identified, however. From buried soils within the chambers were the following: numerous fragments of human skull, vertebrae, sacrum, femur and tibia, possibly all from one adult individual; and one fragment of the femur of a small *Sus*. From the inner passage were an immature human second molar, probably from a child aged about seven to eight years and many fragments of an adult human pelvis and tibia; these items were found in positions beyond the certain passage blocking (which lay in the outer part of the passage) and were within the base of a thin deposit of stone rubble which had probably accumulated during the functional life of the chamber. From a recent disturbance against Orthostat 4 was a fragment of human cranium. This was in a similar condition to the remains within the chamber, from which it had probably been removed in the recent past.

Chamber 2. From the surface of the buried soil at the eastern end of the chamber were the following (for location see fig. 20): two fragments of human cranium (both less than 20 mm across). A further small fragment of human cranium was recovered from sample sieving of soils which had accumulated within the chamber after its partial robbing and collapse, associated with numerous, possibly intrusive, rabbit bones.

IV. PETROLOGICAL EXAMINATION OF AN AXE FRAGMENT FROM GWERNVALE

by *W. J. Phillips*

The axe fragment no. 199 (fig. 54), was examined for the Welsh Region of the Council for British Archaeology's Committee for Implement Petrology

Macroscopic description. A light blue-grey igneous rock, weathering to dark grey.

Microscopic description. A very fine-grained crystal tuff consisting of an integral mass of quartz and felspar crystals generally about 0.05 mm in diameter. Irregular but equidimensional crystals of calcite up to 0.1 mm in diameter are common. In plain light a conspicuous feature is the presence of almost circular crystals of an opaque mineral which are up to

Finds from the forecourt blocking

From within the surviving blocking within the forecourt were the following small identifiable fragments: *Bos* ten frags. (83.3%) of an adult molar; *Sus* two frags. (16.7%) of a very heavily worn molar.

Conclusions

The quantities of bone are insufficient for detailed analysis: estimates of minimum numbers would be meaningless as all the items are too fragmentary for any metrical data and the pre-cairn material in particular has been subject to differential preservation. Domesticated cattle, sheep, and pig are present in pre-cairn contexts and it is reasonable to assume that these species played a part in the pre-cairn Neolithic economy (which might itself represent more than one period). A single item of red deer is also present. The human remains from features beneath the northern horn of the cairn could represent a single person. The human remains from Chamber 1 represent at least two individuals and those from Chamber 2 at least one, but in view of the disturbance suffered by both these contexts the estimated numbers of human individuals is of little significance. Fragments of bone were recovered from the selective sieving of later soil accumulations within Chamber 3, but all of these were too small for identification. The number of identified bones belonging to animal species from 'functional life' and 'cairn blocking' periods (some of which might be derived from earlier activities at this site) is too small to say whether they played any significant part in ceremonial activities at the site.

(record no. BR 19). Its petrology can be given as a very fine-grained siliceous crystal tuff, of undetermined provenance.

0.2 mm in diameter, and irregular groups of smaller granules of the same mineral up to 0.05 mm in diameter. These groups sometimes have the appearance of spongy masses. However, most of these opaque minerals are seen to be pyrite when seen in reflected light, though some have been altered to a deep reddish-brown secondary mineral, probably haematite or limonite. The superficial similarity of the rock to Group VIII is illusory.



a. General view of the long cairn after the opening of the new road, looking NW.



b. General view looking SE.



a. Section through base of cairn and buried soil (p. 49).
Scale 0.3 m.



b. Natural monolith and axial line of stones at base of
cairn, looking NW (p. 49). Scale 1 m.



c. Surface of the buried soil after removal of the inner
and outer revetment wall (p. 62). View to the SW of
Chamber 1. Scale 0.3 m.

Inner and outer revetment walls

a. Cross-section through inner and outer revetment walls at NW end of cairn, looking SE (p. 59). Cairn blocking material on the right has been left standing where the outer revetment wall has been robbed away. Scale 1 m.



b. Inner revetment wall SE of the entrance to Chamber 1, looking NE (p. 59). Scale 0.3 m.



c. Outer revetment wall to the E of Chamber 3, looking S (p. 60). Height of wall \approx 0.6 m.





a. Forecourt during course of excavation, showing postholes of six-poster and bedding-trenches beneath area of northern horn (p. 52). Scales 2 m.



b. The surviving forecourt blocking. Scale 2 m.

◁ The forecourt



Postholes of the six-poster

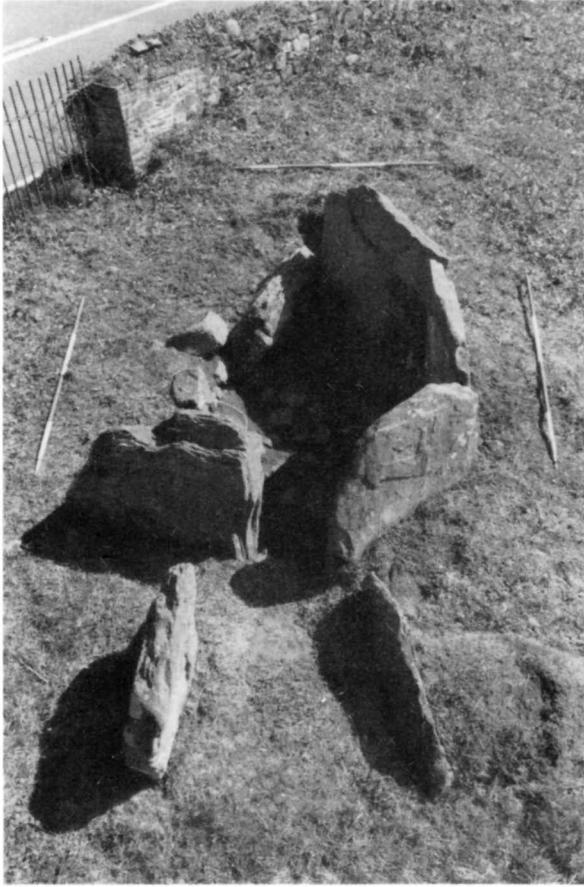
b. Posthole F211 looking NNE, showing outer revetment wall overlying the N side of post pit (p. 54). Scale 0.3 m.



a. Posthole F207 looking NW (p. 54). The forecourt wall has been robbed away, but would seem to have originally overlain the packing on W side of pit. Scale 0.3 m.



c. Posthole F211 from above, showing position of original post. Scale 0.3 m.



a. Chamber 1 before excavation, looking E, with former main road at top left. Scales 2 m.



b. View looking NE, with passage blocking and external deposits still in position (p. 67). Scale 1 m.



c. Walling between Orthostats 9 and 10 on N side of chamber. Scale 0.3 m.

Chamber 1

Chamber 1 entrance passage



a. Surviving stonework outside entrance to Chamber 1 and SE side of cairn (p. 70). Scale 2 m.



b. The S side of the outer passage with basal course of inserted blocking wall still in position. Note the apparent disturbance to the outer end of the passage wall (p. 67). All but the lowest courses of the outer revetment walls have been removed from the cairn beyond. Scale 0.3 m.



c. Same view as *b.* but with all the passage blocking removed. The triangular stone lying against the outer end of the passage may originally have been matched by one at the other end of the blocking wall—within the stonehole in the foreground (F66, p. 67). Scale 0.3 m.



a. Chamber 2 from the SE showing the inserted blocking wall across the outer passage in the foreground (p. 76). Orthostat 21 is visible lying on the floor of the chamber and No. 20 at the top left has been pushed back into its original position. Scale 0.3 m.

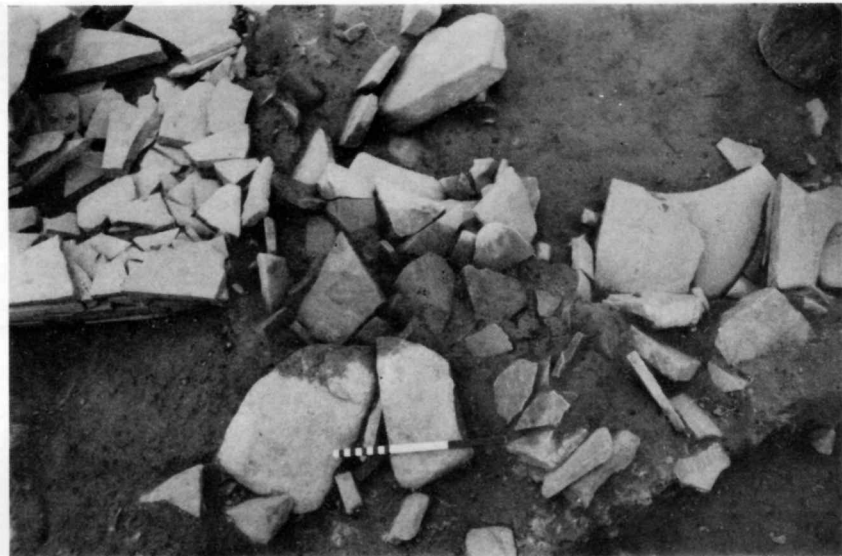


b. Same view as *a.*, but with all the passage blocking removed. Scale 1 m.



c. Collapsed capstone (arrowed) and overlying cairn material within the inner passage (p. 72). Orthostat 20 is shown in the position in which it was found. Scale 1 m.

◁ Chamber 2

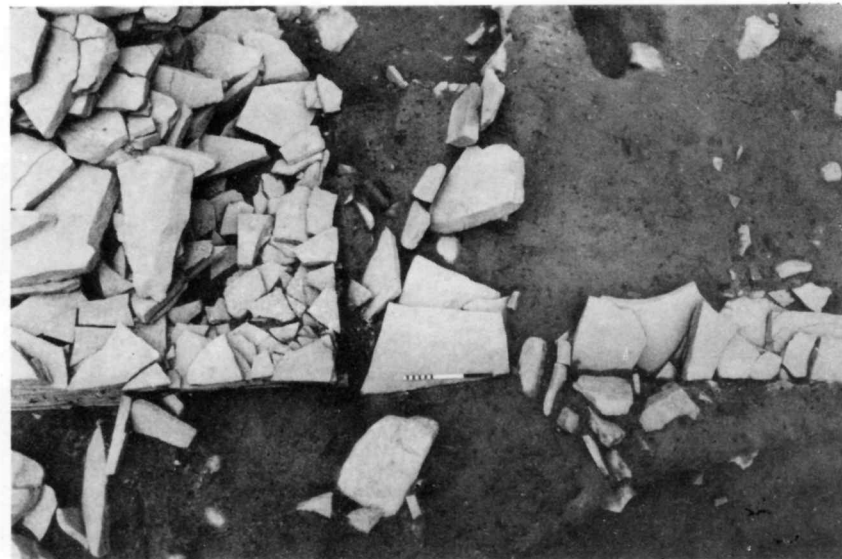


Chamber 2 passage blocking

a. Upper passage blocking looking NE, consisting of a ? disturbed wall overlying sandstone boulders placed in the entrance (p. 76). The lower area at the bottom right was excavated in the previous season. Scale 0.3 m.

b. Rubble beneath the upper blocking wall (p. 75). Scale 0.3 m.

c. Slabs at base of passage blocking—possible residue of earlier blocking wall (p. 75). Scale 0.3 m.



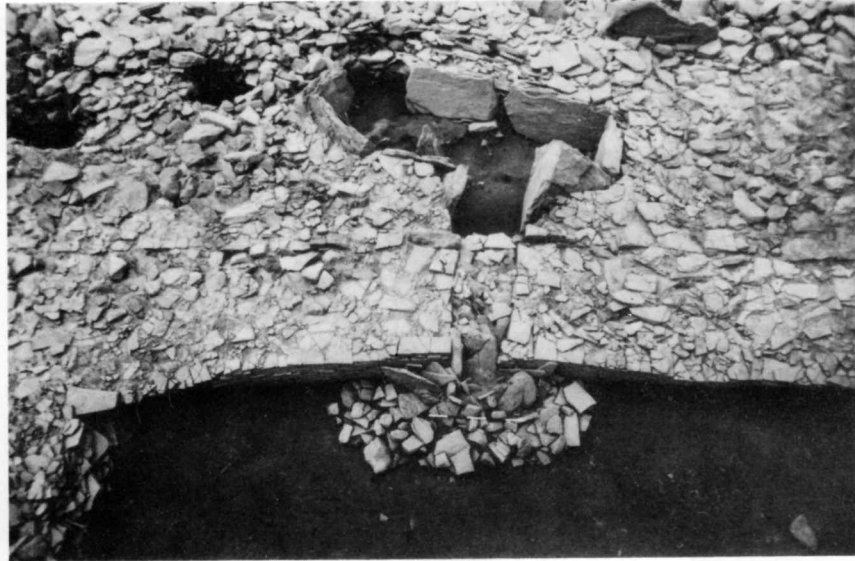


a. View looking SW after removal of the recent road surfaces. Scale 2 m.

b. View after partial excavation of the chamber and external deposits (p. 84). Scale 2 m.

c. View after complete excavation of the chamber and partial removal of external blocking structure. Scale 1 m.

Chamber 3 during the course of excavation



a. View of the primary external blocking structure placed against the chamber entrance (p. 84). Scale 1 m.

b. View after complete excavation of the external blocking structure down to the surface of the buried soil, but with the passage blocking still in position. Scale 1 m.

c. Chamber 3 on completion of excavation. Scale 1 m.



a. Fallen orthostat 24 looking NE (p. 79). Directly behind the stone is the rear of the initial blocking structure within the outer passage (p. 83). Scale 0.3 m.



b. The entrance to Chamber 3 from above, after removal of the inserted blocking wall (p. 80). Scale 0.3 m.



c. The primary external blocking structure, looking SE (p. 84).

◁ Chamber 3



Chamber 3 passage blocking

a. Outer entrance with blocking still in position. The larger stones overlie the base of an inserted wall (p. 82). Scale 0.5 m.

b. The outer passage with the latest blocking removed, but with the base of the inserted wall and the rubble behind it left in position (p. 83). Scale 0.5 m.

c. The earlier blocking wall and the rubble behind it in position, together with a structure built of horizontal slabs, on the line of the inner revetment wall (p. 83). Scale 0.5 m.

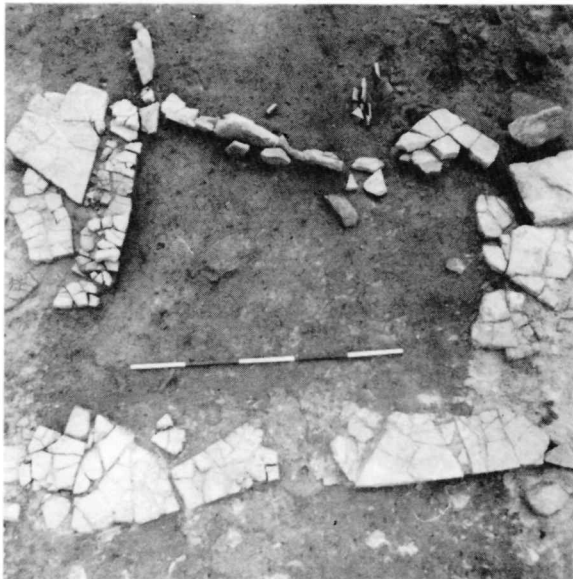




a. The SE side of the passage of Chamber 3 upon completion of excavation. Scale 0.5 m.



b. The concave wall (beneath scale) at the W end of the cairn, looking SE, before the removal of the pitched stone on its NW side. Scale 1 m.



c. The remnants of Chamber 4, looking NE. The outer cairn wall is in the foreground, and the possible passage wall on the left (p. 85). Scale 1 m.

*Portable axe-polishing or sharpening stones
from Neolithic sites in Wales*



a. Gwernvale: axe-polishing or sharpening stone No. 12, found within the basal layers of the cairn (p. 134).

b. Llandegai, Gwynedd: axe-polishing stone accompanying burial in the northern henge monument.

c. Bryn yr Hen Bobl, Anglesey: axe-polishing stone found within the cairn. (*National Museum of Wales*)

Bibliography

- Alexander, J., Ozanne, P. C. and A., 1960. 'Report on the Investigation of a Round Barrow on Arreton Down, Isle of Wight', *Proc. Prehist. Soc.*, 26, 263-302.
- Ambert, P., 1975. 'Allées de l'Aude et Dolmens à Antichambre', *Bulletin de la Société Préhistorique Française*, 72, 57-64.
- ApSimon, A. M., 1969. 'An Early Neolithic House in Co. Tyrone', *J. Roy. Soc. Antiq. Ir.*, 99, 165-68.
- Arnal, J., 1956. 'Petit Lexique du Mégalithisme', *Bulletin de la Société Préhistorique Française*, 53, 518-31.
- Arnal, J., Beguin, M., and Riquet, R., 1955. 'Les Tumulus de Bougon', *Revue Archéologique*, 46, 129-164.
- Arnal, J. and Burnez, C., 1961. 'Les Longs Tumulus de la France', *Berichte über den V Int. Kongress für Vor- und Frühgeschichte, Hamburg (1958)*, 27-37.
- Ashbee, P., 1966. 'The Fussell's Lodge Long Barrow Excavations 1957', *Archaeologia*, 100, 1-80.
- Ashbee, P., 1969. 'Timber Mortuary Houses and Earthen Long Barrows Again', *Antiquity*, 43, 43-44.
- Ashbee, P., 1970. *The Earthen Long Barrow in Britain*.
- Ashbee, P., Smith, I. F. and Evans, J. G., 1979. 'Excavation of Three Long Barrows near Avebury, Wiltshire', *Proc. Prehist. Soc.*, 45, 207-300.
- Atkinson, R. J. C., 1965. 'Wayland's Smithy', *Antiquity*, 39, 126-33.
- Bailloud, G., 1974. 'The First Agriculturalists', in Piggott, S. and Daniel, G. E. (eds), *France Before the Romans*.
- Berry, J., 1929. 'Belas Knap Long Barrow, Gloucestershire: Report of the Excavations of 1929', *Trans. Bristol Gloucestershire Archaeol. Soc.*, 51, 273-303.
- Binford, L. R., 1978. *Nunamiut Ethnoarchaeology*.
- Boon, G. C. and Lewis, J. M. (eds), 1976. *Welsh Antiquity*, National Museum of Wales.
- Brade, C., 1975. *Die Mittelalterlichen Kernspaltflöten Mittel- und Nordeuropas, Göttingen Schriften zur Vor- und Frühgeschichte*, 14.
- Breizillon, M. N., 1968. *La Dénomination des Objets de Pierre Taillée*, IVe supplément à Gallia Préhistoire, Centre National de la Recherche Scientifique, Paris.
- Britnell, W., 1979. 'The Gwernvale Long Cairn, Powys', *Antiquity*, 53, 132-34.
- Britnell, W., 1980. 'Radiocarbon Dates from the Gwernvale Chambered Tomb, Crickhowell, Powys', *Antiquity*, 54, 147.
- Brothwell, D. R., 1963. *Digging up Bones*.
- Bunch, B., and Fell, C. I., 1949. 'A Stone Axe-Factory at Pike of Stickle, Great Langdale, Westmorland', *Proc. Prehist. Soc.*, 15, 1-20.
- Burch, E. S., 1972. 'The Caribou/Wild Reindeer as a human resource', *American Antiquity*, 37, 339-68.
- Burnez, C. and Gabet, C., 1967. 'Destruction du Tumulus Géant de la Grosse Motte à Bouhet (Charente-Maritime)', *Bulletin de la Société Préhistorique Française*, 64, 623-38.
- Burton, J., 1980. 'Making Sense of Waste Flakes: New Methods for Investigating the Technology and Economics behind Chipped Stone Assemblages', *J. Archaeol. Sci.*, 7, 131-48.
- Caillaud, R. and Lagnel, E., 1972. 'Le Cairn et le Crématoire Néolithiques de la Hoguette à Fontenay-le-Marmion (Calvados)', *Gallia Préhistoire*, 15, 137-97.
- Cameron, J., 1934. *The Skeleton of British Neolithic Man*.
- Campbell, J. B., 1977. *The Upper Palaeolithic of Britain*.
- Charlesworth, J. K., 1957. *The Quaternary Era*.
- Clark, J. G. D., 1954. *Excavations at Star Carr*.
- Clark, J. G. D., 1965. 'Traffic in Stone Axe and Adze Blades', *Economic History Review*, 18, 1-28.
- Clark, J. G. D., Higgs, E. S., and Longworth, I. H., 1960. 'Excavations at the Neolithic Site at Hurst Fen, Mildenhall, Suffolk (1954, 1957 and 1958)', *Proc. Prehist. Soc.*, 26, 202-45.
- Clark, J. G. D. and Rankine, W. F., 1939. 'Excavations at Farnham, Surrey (1937-38)', *Proc. Prehist. Soc.*, 5, 61-118.
- Clifford, E. M., 1936. 'Notgrove Long Barrow, Gloucestershire', *Archaeologia*, 86, 119-61.
- Clifford, E. M., 1938. 'The Excavation of the Nympsfield Long Barrow, Gloucestershire', *Proc. Prehist. Soc.*, 4, 188-213.
- Clifford, E. M. and Daniel, G. E., 1940. 'The Rodmarton and Avening Portholes', *Proc. Prehist. Soc.*, 6, 133-65.
- Colcutt, S. N., 1977. 'Notes sur le 'L.U.P.' (Creswellien, Cheddarien, etc.) de la Grande Bretagne', in Sonneville-Bordes, D. de (ed), *La Fin Des Temps Glaciaires en Europe*, Paris, pp. 783-90.
- Coles, J. M. and Higgs, E. S., 1969. *The Archaeology of Early Man*.
- Corcoran, J. X. W. P., 1969. 'The Cotswold-Severn Group' in Powell *et al.*, 1969, 13-104.
- Corcoran, J. X. W. P., 1972. 'Multi-Period Construction and the Origin of the Chambered Long Cairn in Western Britain and Ireland', in Lynch and Burgess (eds) 1972, pp. 31-63.
- Crampton, C. B., 1967. 'Analysis on Pollen in a Soil Buried beneath a Pillow Mound at Llanelwedd, S. Radnorshire', *Bull. Board Celtic Stud.*, 22, 273-74.
- Crampton, C. B. and Webley, D., 1966. 'A Section through the Mynydd Troed Long Barrow, Brecknock', *Bull. Board Celtic Stud.*, 22, 71-77.
- Crawford, O. G. S., 1925. *The Long Barrows of the Cotswolds*.
- Cunnington, R. H., 1975. *From Antiquary to Archaeologist*.
- Daniel, G. E., 1937. 'The Chambered Barrow in Parc le Breos Cwm, South Wales', *Proc. Prehist. Soc.*, 3, 71-86.
- Daniel, G. E., 1939. 'The Transepted Gallery Graves of Western France', *Proc. Prehist. Soc.*, 5, 143-65.
- Daniel, G. E., 1950a. *The Prehistoric Chamber Tombs of England and Wales*.
- Daniel, G. E., 1950b. 'The Long Barrow in Western Europe', in Fox, C. and Dickens, B. (eds), *The Early Cultures of North-West Europe*, pp. 3-20.
- Daniel, G. E., 1960. *The Prehistoric Chamber Tombs of France*.
- Daniel, G. E., 1963. *The Megalith Builders of Western Europe*.
- Daniel, G. E., 1967. 'Northmen and Southmen', *Antiquity*, 41, 313-37.
- Daniel, G. E., 1970. 'Megalithic Answers', *Antiquity*, 44, 260-69.

- Darvill, T. C., 1982. *The Megalithic Chambered Tombs of the Cotswold-Severn Region*.
- Darvill, T. C., forthcoming. 'Neolithic Gloucestershire—A Review', in Saville, A. (ed), *The Archaeology of Gloucestershire* (proceedings of a symposium held in Cheltenham, September 1979).
- Dawkins, W. B., 1901. 'On the Cairn and Sepulchral Cave at Gop, near Prestatyn', *Archaeol. J.*, 58, 322-41.
- Dupertuis, C. W. and Hadden, J. A., 1951. 'On the Reconstruction of Stature from Long-Bones', *Amer. J. Phys. Anthropol.*, 9, 15-53.
- Dutton, G. H., 1903. 'Notes on Glacial and Alluvial Deposits near Cardiff', *Trans. Cardiff Natur. Soc.*, 36, 109-115.
- Edeine, B., 1972. 'Nouvelles Datations par le C14 Concernant les Sites de la Brèche-au-Diable et des Longrais', *Bulletin de la Société Préhistorique Française*, 69, 197-99.
- Elliot, K., et al., 1978. 'The Simulation of Neolithic Axe Dispersal in Britain', in Hodder, I. (ed), *Simulation Studies in Archaeology*, pp. 79-87.
- Ellis, A. E., 1969. *British Snails*.
- Evans, J. G., 1972. *Land Snails in Archaeology*.
- Fisher, J., 1917. *Tours in Wales (1804-1813) by Richard Fenton*, Cambrian Archaeol. Assoc.
- Flood, J. M., 1976. 'Man and Ecology in the Highlands of Southeastern Australia', in Petersen, N. (ed), *Tribes and boundaries in Australia*, Australian Institute of Aboriginal Studies, Canberra, pp. 30-49.
- Foster, I. Ll. and Alcock, L. (eds), 1963. *Culture and Environment*.
- Froom, F. R., 1976. *Wawcott III: a Stratified Mesolithic Succession*, Brit. Archaeol. Rep., 27.
- Giot, P. R., 1960. *Brittany*.
- Green, H. S., 1974. 'Early Bronze Age Burial, Territory, and Population in Milton Keynes, Buckinghamshire, and the Great Ouse Valley', *Archaeol. J.*, 131, 75-139.
- Green, H. S., 1980. *The Flint Arrowheads of the British Isles*. Brit. Archaeol. Rep., 75.
- Green, H. S., in press. 'The Stone Age Cave Archaeology of South Wales', in Bull, P. (ed), *Limestones and Caves of Wales*.
- Grimes, W. F., 1936a. 'The Long Cairns of the Brecknockshire Black Mountains', *Archaeol. Cambrensis*, 91, 259-82.
- Grimes, W. F., 1936b. 'The Megalithic Monuments of Wales', *Proc. Prehist. Soc.*, 2, 106-39.
- Grimes, W. F., 1939. 'The Excavation of the Ty-isaf Long Cairn, Brecknockshire', *Proc. Prehist. Soc.*, 5, 119-42.
- Grimes, W. F., 1951. *The Prehistory of Wales*, National Museum of Wales.
- Grimes, W. F., 1960. *Excavations on Defence Sites 1939-1945*, H.M.S.O.
- Grinsell, L. V., 1981. 'The Later History of Ty Illtyd', *Archaeol. Cambrensis*, 130, 131-39.
- Gruet, M., 1973. 'L'Ossuaire Semi-Mégalithique de Chacé (Maine-et-Loire)', *Bulletin de la Société Préhistorique Française*, 70, 385-400.
- Guido, M., 1978. *The Glass Beads of the Prehistoric and Roman periods in Britain and Ireland*, Society of Antiquaries.
- Healey, E., 1982. 'The Lithic Industries', in Ehrenberg, M., et al, 'The Excavation of Two Bronze Age Round Barrows at Welsh St. Donats, South Glamorgan', *Bull. Board Celtic Stud.*, 29, pp. 795-811.
- Helm, J., 1968. 'The Nature of Dogrib Socioterritorial Groups', in Lee, R. B. and Devore, I. (eds), *Man the Hunter*, Chicago, pp. 118-25.
- Hemp, W. J., 1927. 'The Capel Garmon Chambered Long Cairn', *Archaeol. Cambrensis*, 82, 1-43.
- Hemp, W. J., 1935a. 'The Chambered Cairn known as Bryn yr Hen Bobl near Plas Newydd, Anglesey', *Archaeologia*, 85, 253-92.
- Hemp, W. J., 1935b. 'Arthur's Stone, Dorstone, Herefordshire', *Archaeol. Cambrensis*, 90, 288-92.
- Henderson, J., 1981. 'A Report on the Glass Excavated from Meare Village West, 1979', *Somerset Levels Papers*, 7, 55-60.
- Henderson, J., 1982. *X-ray Fluorescence of Iron Age Glass*. Unpublished Ph.D. thesis, University of Bradford.
- Henderson, J. and Warren, S. E., 1981. 'X-ray Fluorescence analyses of Iron Age Glass: Beads from Meare and Glastonbury Lake Villages', *Archaeometry*, 23 (1), 83-94.
- Henderson, J. and Warren, S. E., 1983. 'Analysis of Prehistoric Lead Glass', *Proceedings of the 22nd International Symposium on Archaeometry*, Bradford, pp. 168-80.
- Higgs, E. S., 1959. 'Excavations at a Mesolithic Site at Downton, near Salisbury, Wiltshire', *Proc. Prehist. Soc.*, 25, 209-32.
- Houlder, C., 1961. 'The Excavation of a Neolithic Stone Implement Factory on Mynydd Rhiw', *Proc. Prehist. Soc.*, 27, 108-43.
- Houlder, C., 1968. 'The Henge Monuments at Llan-degai', *Antiquity*, 42, 216-21.
- Houlder, C., 1976. 'Stone Axes and Henge Monuments', in Boon and Lewis 1976 (eds), pp. 55-62.
- Hulthen, B., 1977. *On Ceramic Technology during the Scanian Neolithic and Bronze Age*, Theses and Papers in North-European Archaeology No. 6, University of Stockholm.
- Jacobi, R. M., 1978. 'The Mesolithic of Sussex', in Drewett, P. L. (ed), *Archaeology in Sussex to A.D. 1500*, Council for British Archaeology, pp. 15-22.
- Jacobi, R. M., 1979. 'Early Flandrian Hunters in the South-West', *Proc. Devon Archaeol. Soc.*, 37, 48-93.
- Jacobi, R. M., 1980a. 'The Upper Palaeolithic of Britain, with Special Reference to Wales', in Taylor 1980 (ed), pp. 15-99.
- Jacobi, R. M., 1980b. 'The Early Holocene Settlement of Wales', in Taylor 1980 (ed), pp. 131-206.
- Jacobi, R. M., et al, 1976. 'The Southern Pennine Mesolithic and the Ecological Record', *J. Archaeol. Sci.*, 3, 307-20.
- Jacq, M., 1943. *Catalogue du Musée Archéologique de Carnac*.
- Jenkins, J., 1970 (ed). *Ethnic Musical Instruments: Identification—Conservation*.
- Jones, P. R., 1980. 'Experimental Butchery with Modern Stone Tools and its Relevance for Palaeolithic Archaeology', *World Archaeol.*, 12, 153-65.
- Jones, T., 1809. *History of the County of Brecknock*, vol. 2.
- Joussaume, R., 1976. 'Dolmen de Pierre-Levée à Nieul-sur-l'Autize (Vendée)', *Bulletin de la Société Préhistorique Française*, 73, 398-419.
- Joussaume, R., 1978. 'Le Dolmen à Couloir dit "La Ciste des Cousins" à Bazoges-en-Pareds (Vendée)', *Bulletin de la Société Préhistorique Française*, 75, 578-96.
- King, D. G., 1966. 'The Lanhill Long Barrow, Wiltshire, England: An Essay in Reconstruction', *Proc. Prehist. Soc.*, 32, 73-85.
- Lacaille, A. D., 1954. *The Stone Age in Scotland*.
- Lacaille, A. D. and Grimes, W. F., 1961. 'The Prehistory of Caldey: Part 2', *Archaeol. Cambrensis*, 110, 30-70.
- Leeds, E. T., 1927. 'A Neolithic Site at Abingdon, Berks', *Antiq. J.*, 7, 438-64.
- Lewis, J. M., 1974. 'Excavations at Rhos-y-clegyrn Prehistoric site, St. Nicholas, Pembs.' *Archaeol. Cambrensis*, 123, 13-42.
- Lewis, J. M., 1976. 'A Modern C-14 date from Rhos-y-clegyrn', *Archaeol. Cambrensis*, 125, 162.
- L'Helgouach, J., 1965. *Les Sépultures Mégalithiques en Armorique*, Rennes.
- L'Helgouach, J., 1973. 'Les Mégalithes de l'Ouest de la France: Evolution et Chronologie', in Daniel and Kjaerum (eds) *Megalithic Graves and Ritual*, Copenhagen, pp. 203-19.
- L'Helgouach, J. and Lecornec, J., 1968. 'Les Fouilles de la Sépulture Mégalithique "Mein-Goarec" à Plaudren (Morbihan)', *Annales de Bretagne*, 75, 27-51.

- L'Helgouach, J. and Lecornec, J., 1976. 'Le Site Mégalithique "Min Goh Ru"', près de Larcuste à Colpo (Morbihan)', *Bulletin de la Société Préhistorique Française*, 73, 370-97.
- L'Helgouach, J. and Le Roux, C. T., 1965. 'La Sépulture Mégalithique à Entrée Laterale du Champ-Grosset en Quessoy', *Annales de Bretagne*, 72, 5-31.
- Lynch, F. M., 1969. 'The Megalithic Tombs of North Wales', and 'The Contents of the Excavated Tombs in North Wales', in Powell *et al*, 1969, pp. 107-74.
- Lynch, F. M., 1972. 'Portal Dolmens in the Nevern Valley, Pembrokeshire', in Lynch and Burgess (eds) 1972, pp. 67-84.
- Lynch, F. M., 1976. 'Towards a Chronology of Megalithic Tombs in Wales', in Boon and Lewis (eds) 1976, pp. 63-79.
- Lynch, F. M., and Burgess, C. (eds) 1972. *Prehistoric Man in Wales and the West*.
- Maier, R. A., 1962. 'Neolithische Tierknochen-Idole und Tierknochen-Anhänger Europas', *Berichte der Römisch-Germanische Kommission des Deutschen Archäologischen Instituts*, 42, 171-305.
- Manby, T. G., 1976. 'Excavation of the Kilham Long Barrow, East Riding of Yorkshire', *Proc. Prehist. Soc.*, 42, 111-59.
- Margary, I. D., 1967. *Roman Roads in Britain*.
- Megaw, J. V. S., 1960. 'Penny Whistles and Prehistory', *Antiquity*, 34, 6-13.
- Megaw, J. V. S., 1961. 'Penny Whistles and Prehistory: Further Notes', *Antiquity*, 35, 55-57.
- Megaw, J. V. S., 1968. 'Problems and Non-Problems in Palaeo-Organology: a Musical Miscellany', in Coles, J. M. and Simpson, D. D. A. (eds), *Studies in Ancient Europe*, pp. 333-58.
- Mohen, J.-P., 1977. 'Les Tumulus de Bougon: Cinq Années de Recherches (1972-1977)', *Bulletin de la Société Historique et Scientifique des Deux-Sèvres*, No. 2-3.
- Moore, D., 1976. 'Cambrian Antiquity: Precursors of the Prehistorians', in Boon and Lewis (eds) 1976, pp. 193-221.
- Moore, P. D., 1973. 'The Influence of Prehistoric Cultures upon the Initiation and Spread of Blanket Bog in Upland Wales', *Nature*, 241, 350-53.
- Moore, P. D., 1975. 'Origin of Blanket Mires', *Nature*, 256, 267-69.
- Moore, P. D., 1978. 'Studies in the Vegetational History of Mid-Wales. V. Stratigraphy and Pollen Analysis of Llyn Mire in the Wye Valley', *New Phytol.*, 80, 281-302.
- Moore, P. D., 1981. 'Neolithic Land Use in Mid-Wales', *IV Int. Palynol. Conf., Lucknow (1976-77)*, 3, 279-90.
- Moore, P. D. and Beckett, P. J., 1971. 'Vegetation and Development of Llyn, a Welsh Mire', *Nature*, 231, 363-65.
- Moore, P. D. and Chater, E. H., 1969. 'The Changing Vegetation of West-Central Wales in the Light of Human History', *J. Ecology*, 57, 361-79.
- Mordant, C. and D., 1970. 'Le Site Néolithique des Gours-aux-Lions à Marolles-sur-Seine (Seine-et-Marne)', *Bulletin de la Société Préhistorique Française*, 67, 345-71.
- Morgan, F. de M., 1959. 'The Excavation of a Long Barrow at Nutbane, Hants.', *Proc. Prehist. Soc.*, 25, 15-51.
- Morgan, W. E. T. and Marshall, G., 1921. 'Excavation of a Long Barrow at Llanigon, Co. Brecon', *Archaeol. Cambrensis*, 76, 296-99.
- Newcomer, M. H., 1971. 'Some Quantitative Experiments in Handaxe Manufacture', *World Archaeol.*, 3, 85-93.
- Nielsen, S. V., 1951. 'Blokfløjter fra oldtid og middelalder' *Kuml*, 145-53.
- Ó Nualláin, S., 1972. 'A Neolithic House at Ballyglass, Near Ballycastle, Co. Mayo', *J. Roy. Soc. Antiq. Ir.*, 102, 49-57.
- Petrequin, P. and Piningre, J. F., 1976. 'Les Sépultures Collectives Mégalithiques de Franche-Comté', *Gallia Préhistoire*, 19 (2), 287-394.
- Piggott, S., 1962. *The West Kennet Long Barrow*, H.M.S.O.
- Piggott, S., 1969. 'Problems in the Interpretation of Chamber Tombs', in Daniel and Kjaerum (eds), *Megalithic Graves and Ritual*, Copenhagen, pp. 9-15.
- Pitts, M. W., 1978a. 'On the Shape of Waste Flakes as an Index of Technological Change in Lithic Industries', *J. Archaeol. Sci.*, 5, 17-37.
- Pitts, M. W., 1978b. 'Towards an Understanding of Flint Industries in Post-Glacial England', *Bull. Inst. Archaeol. Univ. London*, 15, 179-97.
- Pitts, M. W. and Jacobi, R. M., 1979. 'Some Aspects of Change in Flaked Stone Industries of the Mesolithic and Neolithic in Southern Britain', *J. Archaeol. Sci.*, 6, 163-77.
- Powell, T. G. E., Corcoran, J. X. W. P., Lynch, F. M. and Scott, J. G., 1969. *Megalithic Enquiries in the West of Britain*.
- Price, M. D. R., 1981. *Palynological Studies on the Black Mountains, South Wales*, unpublished Ph.D. thesis, University of London.
- Probert, L. A., *et al*, 1968. 'Excavations at Abergavenny 1962-69: 1, Prehistoric and Roman Finds', *Monmouthshire Antiq.*, 2, 163-98.
- Pryor, F. M., 1974. *Excavations at Fengate, Peterborough, England: the First Report*, Royal Ontario Museum Archaeological Monograph 3, Toronto.
- Renfrew, A. C. (ed), 1974. *British Prehistory: A New Outline*.
- Renfrew, A. C., 1976. 'Megaliths, Territories and Populations', in de Laet, S. J. (ed) *Acculturation and Continuity in Atlantic Europe*, Brugge, pp. 198-220.
- Roose, H. E., 1979. 'Recent Field Observations on Neolithic and Bronze Age Monuments in South-East Wales', *Bull. Board Celtic Stud.*, 28, 129-35.
- Rozoy, J. G., 1978. *Les Derniers Chasseurs: L'Épipaléolithique en France et Belgique: Essai de Synthèse*, Bulletin de la Société Archéologique Champenoise, Reims.
- Saville, A., 1977. 'Two Mesolithic Implement Types', *Northamptonshire Archaeol.*, 12, 3-8.
- Saville, A., 1979. 'Further Excavations at Nympsfield Chambered Tomb, Gloucestershire, 1974', *Proc. Prehist. Soc.*, 45, 53-91.
- Saville, A., 1980a. 'On the Measurement of Struck Flakes and Flake Tools', *Lithic Studies Society Newsletter*, 1, 16-20.
- Saville, A., 1980b. 'Five Flint Assemblages from Excavated Sites in Wiltshire', *Wiltshire Archaeol. Mag.*, 72, 1-27.
- Saville, A., 1981. *Grimes Graves, Norfolk: Excavations 1971-72, Vol. II: The Flint Assemblage*, Dept. of the Environment Archaeol. Rep. 11.
- Savory, H. N., 1952. 'The Excavation of a Neolithic Dwelling and a Bronze Age Cairn at Mount Pleasant, Nottage, Glam.', *Trans. Cardiff Natur. Soc.*, 81, 75-92.
- Savory, H. N., 1956. 'The Excavation of the Pipton Long Cairn, Brecknockshire', *Archaeol. Cambrensis*, 105, 7-48.
- Savory, H. N. with Lloyd, J. C., 1958. 'Excavations at an Early Iron Age Hillfort and a Romano-British Iron Smelting Place at Gwernyfed Park, Aberllynfi in 1951', *Brycheiniog*, 4, 53-71.
- Savory, H. N., 1960. 'The Excavation of a Bronze Age Cairn at Sant y Nyll, St. Brides-super-Ely, (Glam.)', *Trans. Cardiff Natur. Soc.*, 89, 9-30.
- Savory, H. N., 1963. 'The Personality of the Southern Marches of Wales in the Neolithic and Early Bronze Age', in Foster and Alcock (eds) 1963, pp. 25-52.
- Savory, H. N., 1973. 'Pen-y-wrldod: a New Welsh Long Cairn', *Antiquity*, 47, 187-92.
- Savory, H. N., 1977. 'The Role of Iberian Communal Tombs in Mediterranean and Atlantic Prehistory', in Markotić, V. (ed), *Atlantic Europe and the Mediterranean*, pp. 161-80.

- Savory, H. N., 1980. 'The Neolithic in Wales', in Taylor (ed) 1980, pp. 207-32.
- Scott, J. G., 1955-56. 'The Excavation of the Chambered Cairn at Brackley, Kintyre, Argyll', *Proc. Soc. Antiq. Scot.*, 89, 22-54.
- Simmons, I. G., 1975. 'The Ecological Setting of Mesolithic Man in the Highland Zone', in Evans, J. G., Limbrey, S. and Cleere, H. (eds), *The Effect of Man on the Landscape: the Highland Zone*, Council for British Archaeology, pp. 57-63.
- Simpson, D. D. A., 1968. 'Timber Mortuary Houses and Earthen Long Barrows', *Antiquity*, 42, 142-44.
- Smith, A. G., 1981. 'The Neolithic', in Simmons, I. and Tooley, M. (eds), *The Environment in British Prehistory*, pp. 125-209.
- Smith, A. G. and Pilcher, J. R., 1973. 'Radiocarbon Dates and the Vegetational History of the British Isles', *New Phytol.*, 72, 903-14.
- Smith, A. G., Pilcher, J. R. and Pearson, G. W., 1971. 'New Radiocarbon Dates from Ireland', *Antiquity*, 45, 97-102.
- Smith, I. F., 1968. *Windmill Hill and Avebury: Excavations by Alexander Keiller, 1925-39*.
- Smith, I. F., 1968. 'Report on Late Neolithic Pits at Cam in Gloucestershire', *Trans. Bristol Gloucestershire Archaeol. Soc.*, 87, 14-28.
- Smith, I. F., 1974. 'The Neolithic', in Renfrew (ed) 1974, pp. 100-36.
- Smith, I. F. and Childe, V. G., 1954. 'Excavation of a Neolithic Barrow on Whiteleaf Hill, Bucks.', *Proc. Prehist. Soc.*, 20, 212-29.
- Straus, L. G., 1977. 'Of Deerslayers and Mountain Men: Paleolithic Faunal Exploitation in Cantabrian Spain', in Binford, L. R. (ed), *For Theory Building in Archaeology*.
- Taylor, J. A. (ed) 1980. *Culture and Environment in Prehistoric Wales*, Brit. Archaeol. Rep., 76.
- Tixier, J., 1974. *Glossary for Description of Stone Tools*, Newsletter of Lithic Technology, Special Publication No. 1 (translated by M. Newcomer).
- Tixier, J., et al, 1980. *Préhistoire de la Pierre Taillée. I, Terminologie et Technologie*, Cercle de Recherches et d'Études Préhistoriques, Paris.
- Trotter, M. and Gleser, G. C., 1952. 'Estimation of Stature from Long-Bones of American Whites and Negroes', *Amer. J. Phys. Anthropol.*, 10, 463-514.
- Trotter, M. and Gleser, G. C., 1958. 'A Re-evaluation of Estimation of Stature Taken During Life and Long-Bones after Death', *Amer. J. Phys. Anthropol.*, 16, 79-123.
- Tyler, A., 1976. *Neolithic Flint Axes from the Cotswold Hills*, Brit. Archaeol. Rep., 25.
- Vatcher, F. de M., 1961. 'The Excavation of the Long Mortuary Enclosure on Normanton Down, Wilts.', *Proc. Prehist. Soc.*, 27, 160-73.
- Vulliamy, C. E., 1921. 'The Excavation of a Megalithic Tomb in Breconshire', *Archaeol. Cambrensis*, 76, 300-305.
- Vulliamy, C. E., 1922a. 'Note on a Long Barrow in Wales', *Man*, 22, no. 6, 11-13.
- Vulliamy, C. E., 1922b. 'Excavation of a Long Barrow in Breconshire', *Man*, 22, 150-52.
- Vulliamy, C. E., 1923. 'Further Excavations in the Long Barrows at Ffostill', *Archaeol. Cambrensis*, 78, 320-24.
- Vulliamy, C. E., 1929. 'Excavation of an Unrecorded Long Barrow in Wales', *Man*, 29, no. 20, 34-36.
- Wainwright, G. J., 1962. 'The Excavation of an Earthwork at Castell Bryn Gwyn, Llanidan Parish, Anglesey', *Archaeol. Cambrensis*, 111, 25-58.
- Wainwright, G. J., 1963. 'A Reinterpretation of the Micro-lithic Industries of Wales', *Proc. Prehist. Soc.*, 29, 99-132.
- Wainwright, G. J. and Longworth, I. H., 1971. *Durrington Walls: Excavations 1966-1968*, Society of Antiquaries.
- Ward, J., 1915. 'The St. Nicholas Chambered Tumulus, Glamorgan', *Archaeol. Cambrensis*, 15, 253-320.
- Ward, J., 1916. 'The St. Nicholas Chambered Tumulus, Glamorgan', *Archaeol. Cambrensis*, 16, 239-67.
- Webley, D., 1954. 'Neolithic Sandstone Disk from Cwm Cadlan, Breckn.', *Bull. Board Celtic Stud.*, 15, 303.
- Webley, D., 1956a. 'An Unrecorded Chambered Long Cairn in Brecknockshire', *Bull. Board Celtic Stud.*, 17, 54-55.
- Webley, D., 1956b. 'An Earthen Mound of the Long Barrow type in Brecknockshire', *Bull. Board Celtic Stud.*, 17, 55.
- Webley, D., 1959. 'The Neolithic Colonization of the Breconshire Black Mountains', *Bull. Board Celtic Stud.*, 18, 290-94.
- Webley, D. P., 1969. 'Aspects of Neolithic and Bronze Age Agriculture in South Wales', *Bull. Board Celtic Stud.*, 23, 285-90.
- Webley, D., 1976. 'How the West Was Won: Prehistoric Land-Use in the Southern Marches', in Boon and Lewis (eds) 1976, 19-35.
- Wheeler, R. E. M., 1943. *Maiden Castle, Dorset*, Society of Antiquaries.
- Whittle, A. W. R., 1977. *The Earlier Neolithic of Southern England and its Continental Background*, Brit. Archaeol. Rep. Supp. Series, 35.
- Williams, A., 1952. 'Clegyr Boia, St. David's, Pembrokeshire: Excavations in 1943', *Archaeol. Cambrensis*, 102, 20-47.
- Woodbridge, K., 1970. *Landscape and Antiquity*.
- Wymer, J. J., 1962. 'Excavations at the Maglemosian Sites at Thatcham, Berkshire, England', *Proc. Prehist. Soc.*, 28, 329-61.
- Yellen, J. E., 1977. *Archaeological Approaches to the Present*.

Index

- Abergavenny, Gwent, 110
 aerial photographs, 15
 Ancient Monuments Board (Wales), 13
 Ancient Monuments Laboratory, 49
 animal bones *see also* bone artefacts, 9, 19, 20, 33, 35, 38, 51, 64, 70
 Apted, Dr M., 13
 Arrowcourt, Herefords., 129
 Arthur's Stone, Dorstone, Herefords., 4, 15, 144
 Ascott-under-Wychwood, Oxon., 24, 29, 30, 33, 34, 144
 Ashbee, P. A., 35
 Atkinson, Professor R. J. C., 43
- Ballyglass, Co. Mayo, 139
 Ballynagilly, Co. Tyrone, 139
 Bangor, University College, 97
 Barnenez, Finistère, 30, 34
 Barnett, C., 13
 Barry, Glam., 114
 beads *see* glass beads
 Beaker *see* flintwork, pottery
 Beckhampton Road long barrow, Wilts., 144, 150
 Beer Head, Devon, 114, 132
 Belas Knap, Glos., 33, 144
 Bennison, B., 43
 Benson, D., 43, 108
 Berridge, P., 113*n*
 Bevins, Dr R., 113*n*
 Black Mountains (Brecknockshire)
 distribution of long cairns, 3, 9, 15, 43, 138
 economic potential, 3, 136
 morphology of long cairns, 3-5, 15, 144, 146
 pollen evidence, 138
 stone sources, 16, 56-57
 blocking *see* long cairns, chamber, forecourts and passages
 bone artefacts
 ?flute, 14, 20, 27, 38
 pin *see* Ty-isaf
 Boon, G. C., iii
 Bougon, Deux-Sèvres, 31, 34, 35
 Brackley, Argyll, 26
 Brade, C., 27
 Brassil, K. S., 13, 43, 134
 Brecknock *see* Black Mountains
 Brecon Beacons National Park, 43
 Brecon High School, 13
 Brecon Museum, 46*n*
 Breiddin, Mont., 110
 Briggs, Dr S., 43, 44, 113*n*
 Britnell, J., 43
 Britnell, W., 4, 9, 32
 Bronze Age *see* flintwork, pottery
 Brothwell, Dr D. R., 14, 36
 Browne, Dr D., 43
 Bryn y Groes *see* Croesllechau
 Bryn yr Hen Bobl, Anglesey
 axe polishing stone, 132
 pottery, 110
- burials *see* human remains
 Burn Ground, Glos.,
 long cairn, 7, 23, 34, 59, 147, 148
 pottery, 110
 quern, 134
 buttress pit, 9, 24, 34, 92
- Caldey Island, 110, 114
 Cambrian Archaeological Association, iii, 24, 45*n*
 Camden, W., 45
 Campbell, J. B., 121
 Capel Garmon, Gwynedd, 144
 capstones *see* chambers, passages
 Cardiff Public Library, 45*n*
 Cardiff, University College, 152
 Carn Fach, Rhigos, Glam., 129
 Carn Goch, Llangattock, Brecs., 4, 44
 Carreg Coitan, Dyfed, 108
 Casey, M., 43
 Castell Bryn Gwyn, Anglesey, 110
 Castellec, Lannvras, Morbihan, 31
 Cathole, Gower, 114
 caves, 31, 129
 Cefn Hill, Craswell, Herefords., 138
 cereals
 grain, 49, 51, 138, 141
 pollen, 138
 Chacé, Maine-et-Loire, 32
 chambers *see also* France
 ancestry of forms, 30-32
 ante-chamber, 7, 9
 blocking, 6, 7, 9, 32, 33, 35, 62, 63, 75, 82, 93
 capstones, 7, 8, 19, 20, 32, 35, 59, 65, 79, 143, 146-147
 cists, 4, 5, 6, 19, 22, 32, 33, 36, 86, 87
 construction, 16, 32, 59, 146-147
 corbelling, 19, 32
 entrance passage, 59, 61
 entry method, 7, 8, 9, 20, 32, 33, 61, 77, 143, 148-149
 functional differences, 5
 graduation of height in cairn, 5, 142, 143
 lateral chambers, 4, 9, 32
 paving, 19, 67, 68-70
 polygonal, 4, 64, 144
 rectangular, 4, 32, 33
 sills, 17
 terminal chambers, 4, 144
 transepted, 4, 16, 32, 144
 T-shaped, 4, 32, 70, 144
 ?unused, 5
 walling, 57, 64-65, 70-71, 79, 146
 Champ-Grosset, Quessoy, Côtes-du-Nord, 26
 Champ Pourri, Angoulême, 32
 charcoal, 19, 22, 23, 24, 50, 52, 55, 65, 70, 90
 chert, 114, 129
 Chez Vinaigre, Angoulême, 34
 cists *see* chambers
 Clark, Professor J. G. D., 116
 Clarke, Dr D. V., 27*n*

- Clayton, Dr C., 113*n*
 Clegyr Boia, Dyfed, 106, 109
 Clettraval, North Uist, 26
 climate, 136
 Clwyd-Powys Archaeological Trust, 43
 coal, 68
 coin, 94
 Colnpen, Glos., 29
 corbelling *see* chambers, passages
 Corcoran, Dr J. X. W. P., 4, 7, 35, 144, 145
 Cotswolds,
 long cairns, 34, 44
 sources of flint, 114, 142
 Coxe, Archdeacon W., 45-46
 Craig-y-Llyn, Glam., 114
 Crawford, O. G. S., 3, 47
 Creche-Collé, St Pierre, Quiberon, Morbihan, 26
 Croesllechau (Bryn y Groes), Brecks., 3, 45
 Crone, A., 43
 Cunnington, W., 45
 Cwm Fforest, Brecks., 4
- Daniel, Professor G. E., 3, 4, 31, 48, 144
 Danubian Neolithic culture, 31
 Darvill, T. C., 43, 97, 108, 109, 110, 141, 145
 Department of the Environment, 16
 Dresser, Dr P. Q., 43
 Dyffryn Ardudwy, Gwynedd, 106-108
- earthen long barrows *individual sites listed separately; see also*
 timber structures
 ancestry, 31
 chronology, 29, 150
 form, 9, 144, 148, 150
 internal subdivisions, 34
 timber chambers, 6, 29
 timber façades, 34, 144
 tradition, 6, 143
 earthworms, 49, 62, 74
 economy (prehistoric), *see also* Mesolithic, Palaeolithic
 animal husbandry, 138, 141, 154
 hunter-gatherer, 129-130, 136, 138
 mixed farming, 138, 141
 transhumance, 136, 138
- Edwards, P. C., 47
 Edwinstford, Carm., 47
 Ehenside Tarn, Cumb., 132
 Evans, Emlyn, 16
 Evans, Rev Evan, 45
 Evans, G., 13, 24
 Evans, G. E., 47*n*
 Evans, Dr J. G., 43, 49
 Everest, T., 46-47, 94
 Everest, Sir G., 46*n*
 extra-revetment material *see* long cairns
 exposure platforms *see* timber structures
 Eyford, Glos., 108, 109
- farming *see* economy
 Fengate, Northants., 113
 Fenton, R., 44, 45*n*, 46-47
 Ffostill (Ffostyll) North and South, Brecks., 4, 109
 flintwork *see also* chert, igneous rock, quartz, quartzite,
 stone
 Beaker, 93, 128, 130
 Bronze Age, 93, 132
 Late Upper Palaeolithic, 50, 114-116, 120, 129, 136
 Maglemosian assemblages, 129-130
 Mesolithic, 26, 50-51, 52, 64, 90, 95, 114-118, 121-122,
 127-130, 136-138
 Neolithic, 6, 19, 20, 26, 50, 54, 64, 70, 74, 77, 93, 95,
 114-118, 122-128, 130-132
 prestige products, 132
 sources and supply, 114, 118-119, 129, 131-132, 142, 150
- flotation, 49, 82, 96
 forecourts
 blocking, 7, 22, 33, 35, 52, 57, 63, 64, 142
 lintel of portal, 22, 33
 portals, 4, 6, 22, 33, 35, 36, 63, 143
 ritual activities, 22, 54, 57, 63, 89
 walling, 7, 22, 23, 33, 57-58, 63, 144, 147
 Frainslake, Pemb., 114
 France: megaliths *individual sites listed separately*
 'antechamber dolmens', 33
 dry-stone walling, 30
 forecourts, façades, 34
 laterally-chambered tombs, 33, 34, 35
 long mounds, 31, 32, 35
 polygonal and round chambers, 30, 32
 radiocarbon dating, 30, 31
 rectangular cairns, 30
 rectangular chambers, 30, 32
 round cairns, 30, 31
 T-shaped chambers, 32, 144
 terminal chambers, 32
 timber components, 31
 trapezoidal cairns, 30
 trapezoidal chambers, 30, 32
 Tumulus Géants, 30, 31
 Fussell's Lodge, Wilts.
 revetment, 144, 146, 150
 timber structure, 141
- Gell, Admiral, 46-47
 Gilbert, A., 43
Giraldus Cambrensis, 45-46,
 Glamorgan, sources of flint, 114, 142
 glass beads
 Iron Age, 93, 135
 post-medieval, 74
 Gloucestershire long cairns, 4, 32, 144
 Gop Cave, Clwyd, 110
 Gough's Cave, Mendip, Som., 129
 grave goods and offerings, 19, 26, 35, 88, 142
 Green, Dr H. S., 43, 116, 136
 Greuter, S., 43
 Griffiths, P. P., 13, 15
 Grimes, Professor W. F., 3, 26, 33, 43, 48
 Gros Dognon, Tusson, Charente, 30
 Grosse Motte, Bouhet, Charente-Maritime, 31
 Guido, M., 43, 135
 Gwernvale, Brecks. (references excluding main report), 3, 4,
 5, 6, 7, 9, 15, 26, 28, 29, 32, 33, 34, 35
 Gwernvale Manor Hotel, 43
- Hambledon Hill, Dorset, 113
 Hazelton, Glos., 148
 Healey, E., 43, 136
 hearth, 50, 65
 Henderson, Dr J., 43
 Herefordshire long cairns, 3
 Hillman, G. C., 43, 96, 141
 Hoare, Sir R. Colt, 3, 4, 44, 45-47, 93, 146
 Hogg, Dr A. H. A., 13
 Horniman Museum, London, 27*n*
 Houlder, C. H., 43
 houses *see* timber structures
 human remains, 3, 7, 9, 13, 18, 19, 20, 22, 23, 36-38, 52,
 67, 70, 74-75, 77, 88, 113, 142, 149, 153-154
 articulated, 5
 charnel deposit, 36
 cremated and burnt, 6, 19, 22, 24, 35, 36
 disarticulated, 5, 6, 19, 32, 36
 'direct' collective burial, 6, 35
 exposure, 6
 family groups, 33
 foundation deposits, 5, 6, 7, 33, 35

- ossuary, 18, 19
removal, 35
'reserved' collective burial, 35
successive, 6
hunting *see* economy
Hurst Fen, Suffolk, 118, 131
- Iberian megaliths, 32
igneous rock, 114, 142, 154
Ile Bono, Côtes-du-Nord, 30
Ile Carn, Finistère, 30
Ile Gaignog, Finistère, 30
Iron Age *see* glass beads
- Jacobi, Dr R. M., 113*n*, 114
Jenkins, Dr D., 43, 97
Jenkins, J., 27*n*
Jones, B. L. R., iii
Jones, Theophilus, 45*n*, 46-48
- Keeley, Dr H. C. M., 43, 49, 57
Kercado, Morbihan, 30
Kilham long barrow, Yorks, 141
King Arthur's Cave, Herefords., 129
Kinnes, Dr I., 43
Kirkham, C., 45*n*
Knight, J. K., 43, 93, 94
Kujavish tombs, Poland, 31
- La Boixe, Charente, 30, 32
La Commune-Sèche, Colombiers-sur-Seulles, Calvados, 30, 34, 35
La Frébouchère, Vendée, 32
La Hogue, Fontenay-le-Marmion, Calvados, 30, 31
Lamborough Banks, Glos., 29
Lanhill, Wilts., 141
Le Colpo, Finistère, 30, 31, 34
Le Norterio, Morbihan, 34
Leicester University, 27*n*
Leighterton, Glos., 29
Lewandowicz, M. de, 43
Lhuyd, E., 45
Little Lodge, Brecks.,
 long cairn, 4
 pottery, 109
L'Helgouach, Dr J., 144
Llandegai, Gwynedd,
 axe polishing stone, 132
 pottery, 106
 radiocarbon date, 106, 139
 timber structure, 139
Llandudno, Gwynedd, 110
Llanelwedd, Rads.,
 pollen evidence, 138
 pottery, 108-110
Lligwy, Anglesey, 109
London University, Institute of Archaeology, 36*n*
long cairn *individual sites listed separately; see also* chambers,
 forecourts, passages, radiocarbon dating, Severn-
 Cotswold tombs
 affinities with earthen long barrows, 143
 ancestry of form, 30-32
 axial ridging, 35, 144
 axial symmetry, 4, 144
 bonding of stones, 34, 56, 58, 61, 67, 72
 building materials, 16, 19, 22, 23, 34, 55-57, 63, 64, 72
 closure, 77, 88-90, 142-143, 149-150
 constructional techniques, 142, 146
 design, 142, 143, 146
 end of long cairn tradition, 150
 external appearance, 7, 9, 34, 144, 150
 external revetment walls, 4, 7, 8, 17, 19, 20, 23, 32, 34,
 35, 54, 57-58, 60-63, 74-77, 79-80, 142, 143, 146, 148
 extra-revetment material, blocking, 7, 8, 9, 16, 20, 23,
 24, 32, 34, 62, 70, 77, 84-85, 88-90, 90-93, 142,
 143, 150
 foundations, 7, 8, 23, 24, 34, 60, 62, 146
 function, 143, 148-150
 internal revetment walls, 4, 19, 23, 32, 34, 35, 58, 59-60,
 61, 72, 79, 85, 143
 internal divisions and walling, 4, 24, 33, 34, 59, 87, 146
 lateral profile of cairn, 65, 144
 laterally-chambered cairns, 4, 7, 29, 33, 32
 length, 4, 15, 58, 142, 143
 longitudinal profile of cairn, 143
 multi-period construction, 7, 35, 142
 orientation, 5, 15, 142
 outer casing, 16, 20, 22, 34, 35, 82
 'rotunda', 24
 sequence of construction, 7, 33, 35, 57, 59, 61, 63, 67,
 146-148
 setting out and use of marker stones, 23, 34, 59, 60, 146
 siting, 3, 15, 59
 stepped profile, 148
 symbolism, 31, 150
 tail of long cairns, 23, 24, 58, 143
 terminally chambered cairns, 6, 7, 29, 30, 32, 33, 144, 145
 territorial markers, 150
 thrust blocks, 16
 trapezoidal cairns, 4, 142
 weathering, 8, 9, 23, 34, 61-62, 150
Luckington, Wilts., 29, 144
Lucy Cavendish College, Cambridge, 36*n*
Luff, M., 13, 14, 19, 35, 36
Lugbury, Wilts., 29
Lynch Llewellyn, F. M., iii, 3*n*, 43, 112, 141
- Maglemosian industry *see* flintwork
Maiden Castle, Dorset, 108
Maier, R., 27
marker stones *see* long cairns
Manby, G. W., 45
Meare, Som., 135
medieval *see* pottery
Mediterranean, 31
Megaw, Professor J. V. S., 14
Mein-Goarec, Plaudren, Morbihan, 26
Mescall, K., 43
Mesolithic *see also* flintwork
 eclipse of economic system, 3, 138
 economy, 136-138
 clearance, 138
 occupation sites, 136
 radiocarbon dating, 50, 130, 136
Millaran passage graves, 33
Mohen, J. P., 31
mollusca see snails
Mont St-Michel, Carnac, Finistère, 30
Moore, D., 43
Moore, Dr. P. D., 43, 138
Morgan, G. C., 27*n*
mortuary structures *see* timber structures
Motte de la Garde, Fontenille, Charente, 31
Musson, C. R., 35, 43, 110
Mynydd Rhiw, Gwynedd, 131
Mynydd Troed (Cwm Sorgwm), Brecks.,
 long cairn, 4, 15
 pollen evidence, 138
- Nanna's Cave, Caldey Island, 114
Nash, J., 47
National Library of Wales, 45*n*, 47
National Museum of Antiquities of Scotland, 27*n*
National Museum of Wales, 3, 13, 16, 24, 36, 43, 47*n*
Newbridge-on-Wye, Rads., 138
Newport Museum, Gwent, 13

- Normanton Down, Wilts., 141
 Notgrove, Glos., 35, 63, 147
 Nottage, Glam., 108
 Nutbane, Hants, 139, 141
 Nympsfield, Glos.,
 long cairn, 63, 141
 pottery, 110
- O'Connor, T. P., 14, 36, 43
 Ogof-y-Darren, Llangattock, Brecs., 129
 Ordnance Survey, 13, 15
 Ouseley, Sir W., 46
- Palaeolithic (Late Upper); *see also* flintwork
 hunting strategies, 129, 136-137
 Pant-y-Saer, Anglesey, 26
 Parc-ar-Castel, Tréguennec, Finistère, 26
 Parc le Breos Cwm, Glam., 108
 Parfit, K., 43
- passages,
 blocking, 9, 19, 20, 22, 33, 65, 67, 74-77, 80, 82-84,
 93, 149
 blocking wall, 57, 67-68, 74-77, 80, 82-84, 143, 147-149
 capstones, 59, 72, 74-75, 146-147
 corbelling, 18, 19, 75
 crooked passages, 142, 144, 146
 dummy entrance passage, 19, 33, 39
 exposed lintel, 143
 paving, 17, 18, 19, 20
 ritual, 33
 roofing, 20, 32, 143
 sills, 65, 67
 walling, 17, 18, 19, 20, 65, 72, 74, 79-80, 86, 142, 143,
 146, 147
 passage graves, 30, 31, 32, 33
 Payne, Rev H. T., 46-47, 48*n*
 Pennant, T., 45
 Penderyn, Brecs., 26
 Pen-y-wyrlod, Llanigon, Brecs.,
 long cairn, 4, 7, 15
 pottery, 109
 Penywylod, Talgarth, Brecs. (references excluding main
 report), 3, 4, 5, 6, 7, 8, 58, 59, 92, 108, 109, 143,
 144, 147
 Phillips, Dr W. J., 43
 Pierre Levée, Nieul-sur-l'Autize, Vendée, 30
 Pierson-Jones, A., 13
 Piggott, Professor S., 35, 43, 142
 Pipton long cairn, Brecs.,
 animal bone, 33
 burials, 35
 flintwork, 6
 long cairn, 4, 5, 6, 7, 8, 16, 23, 24, 29, 33, 34, 35, 59,
 143, 144
 pottery, 109
 pits, 9, 24, 34, 50, 52, 77, 79, 80, 88-89, 90, 141, 150
 plant remains *see* cereals and flotation
 Poland *see* Kujavish tombs
 pollen analysis, 49, 138
 Pollock, D., 43
 Poole, E., 47*n*
 portal *see* forecourts
 portal dolmens, 33, 106
 postholes, 6, 33, 35, 50-55, 58, 89, 90, 139-141
 post-medieval *see* glass beads, pottery, roads
 pottery
 Abingdon Ware, 6, 28, 106, 108, 110, 112, 141
 Beaker, 6, 130
 Bronze Age, 6, 109
 Cerny, 31
 Ebbsfleet, 6, 85, 108, 110, 112-113
 Food Vessel, 130
 function, 113
 Grimston/Lyles Hill, 106, 112, 141
 Hembury Ware, 109
 Irish Sea Group, 106, 109
 Linear Pottery cultures, 113
 medieval, 93
 Neolithic, 6, 26, 28, 35, 51, 64, 70, 74, 77, 85, 88, 89-90,
 97-113, 141, 150
 Peterborough, 6, 88, 108, 110, 112-113, 142, 150
 post-medieval, 52, 65, 74, 93-94
 sources of material, 112-113
 technology, 113
 thin sectioning, 110-113
 Western Neolithic, 24
 Probert, A., 13, 43, 135
 Probert, S., 43
 Price, Jane, 43
 Price, Dr J., 43
 Price, Dr M. D. R., 43, 138
- Quant, V., 43
 quartz, 115
 quartzite, 115
 querns *see* stone
- radiocarbon dating,
 English Neolithic, 29-30, 139, 144
 French Neolithic, 30-31
 Gwernvale, 6, 29, 50, 55, 88, 106, 109, 136, 139, 142,
 144, 150, 152
 Irish Neolithic, 139
 Long cairns, 7, 29
 Penywylod, 6, 29, 144
 Welsh Neolithic, 106, 138, 139
- Radnorshire long cairns, 3
 Randwick, Glos., 34
 Rees, Dr S., 108
 revetment walls *see* long cairns
 Rhos-y-clegyrn, Dyfed, 138
 Rhuddlan, Clwyd
 Mesolithic flintwork, 129
 pottery, 110
- roads
 modern, 43, 44, 51, 85, 90-91
 post-medieval, 3, 58, 59, 63, 79, 85, 90-91, 93-94, 96
 Roman, 94
 turnpike, 47, 94
 Turnpike Acts, 47*n*
- Roberts, R., 43
 Rodmarton, Glos., 8, 141, 143, 147
 Roese, Dr H. E., 15
 Roman *see* roads
 Royal Commission on Ancient and Historical Monuments
 in Wales, 3, 4, 13, 45*n*
- St Martin-la-Rivière, Poitou, 31
 St Suzanne, Laval, Mayenne, 32
 Sant-y-Nyll, St Brides-super-Ely, Glam., 109
 Savory, Dr H. N., 3*n*, 4, 7, 8, 27*n*, 43, 47*n*, 48, 58
 settlement *see* Mesolithic
 Severn-Cotswold tombs *individual tombs listed separately; see*
 also long cairns
 Belas Knap-Rodmarton type, 4, 144
 chronology, 3, 6, 29, 30, 144-145
 'hybrid or miscellaneous cairns', 4, 144
 morphology, 4, 27, 33
 Notgrove-Parc le Breos Cwm type, 4, 144
 Randwick—Tinkinswood type, 4, 144
 tradition, 3, 4, 6, 7, 9, 29, 31, 32, 33, 34, 57, 59, 141-
 142, 143-144, 147
- Shirley, R., 43
 sieving, 49, 74, 80, 85, 96, 114
 sills *see* chambers and passages
 Skara Brae, Orkney, 27*n*

- Smith, Professor A. G., 43, 49
 Smith, Dr C. A., 43, 110
 Smith, Dr P., 45*n*
 snails, 36, 39, 49
 soils, 3, 17, 24, 49, 58, 63
 Soumont-St Quentin, 31
 Southampton University, 111
 South Street, Wilts., 150
 Spurgeon, C. J., 108
 Stackpole Warren, Dyfed, 108
 stakeholes, 52, 54, 64
 Stanford, Dr and Mrs S., 13
 Star Carr, 130
 stone *see also* coal, chert, flintwork, igneous rock, quartz,
 quartzite; *for building materials see* long cairns
 axe polishing, grinding, sharpening, 132, 134-135, 142
 discs, 24, 26
 querns, 51, 52, 54, 57, 58, 63, 134, 141
 polishing stones, 52, 135
 polissoir, 57, 63, 116, 132
 rubbing stones, 52, 134, 141
 sources of materials, 134
 thin sectioning, 154
- Thatcham, Berks., 129
 Thawley, C., 27
 Thomas, D., 13
 Thompson, Dr M. W., iii
 Thou, Charente-Maritime, 31
 Thurnham, Dr J., 4
 timber structures *see also* earthen long barrows
 Danubian, 31
 domestic, 139
 exposure platforms, 6, 35, 141
 mortuary structures, 6, 31, 35, 141
 ceremonial, 22, 26, 33, 139-141, 143
- Tinkinswood, Glam., 108
 Tithe Award Schedule, Crickhowell, 47
 Trefignath, Anglesey, 110
 Triscott, J., 43
 Trwyn Du, Anglesey, 129
 Tumulus de Crucheau, Charente-Maritime, 31
 Tumulus Géants *see* France
 Twyn-y-Gaer, Gwent, 135
 Ty Illtud, Brecks., 15, 45
- Ty-isaf, Brecks.,
 bone pin, 6
 burials, 5-6
 flintwork, 6, 130
 long cairn, 4, 5, 7, 15, 16, 23, 24, 29, 32, 33, 34, 35, 59,
 144, 147
 pottery, 6, 28, 108, 109
 stone discs, 26
- Usbourne, Mr and Mrs J. H., 43
 Usk Valley, 43, 129, 136
- vegetation clearance, 138
 Vyner, B., 13
- walling *see* chambers, forecourts, long cairns, passages
 Ward, P., 45*n*
 Waterhouse, M., 13
 Wayland's Smithy, Berks.,
 axe polishing stone, 132
 dating, 30, 144
 long barrow, 34
 timber structure, 6, 141
- Webley, Dr D. P., 13
 Welsh Office, iii, 13, 43, 45
 Welsh St Donats, Glam., 114
 West Kennet, Wilts.,
 axe polishing, 132, 142
 burials, 35
 pottery, 110
 stone disc, 26
- West Tump, Glos., 8
 Williams, B. V., 43
 Williams, T., 43
 Wiltshire long cairns, 32
 Windmills Hill, Wilts.,
 flintwork, 118, 130
 pottery, 108, 110, 113
- Woodbridge, K., 45
 Wye Valley, 136, 138
 Wyndham, H. P., 45
- Y Gaer, Gwernyfed, Brecks., 108
 York Archaeological Trust, 36*n*

