

PREHISTORIC ENGLAND & WALES



ROMAN CONQUEST

A.D. 43

IRON AGE

C. Belgae - two waves c.75 & 50 B.C.
 B. Middle LaTène (Marnian) overlords } c.300/250 B.C.
 A. Late Hallstatt - LaTène groups } c.500 B.C.

BRONZE AGE

Carp's tongue sword people c.750 B.C.
 (Millenium of integration)
 Wessex - Breton people c.1,750 B.C.

The BEAKER invasions c.1,900/1,800 B.C.

NEOLITHIC

Baltic (Peterborough) } c.2,500/2,200 B.C.
 Western (Windmill Hill & Megalithic)

MESOLITHIC

Baltic (Maglemosian)
 Western (Tardenoisian)

UPPER PALAEOOLITHIC (Creswellian)



- ⌂ Settlement
- ☐ Lake-dwelling
- ⊙ Hill-fort
- = Cemetery
- Flat grave
- ⊕ Sacred site
- △ Round barrow
- ▲ Long barrow - unchambered
- ∩ Megalithic chamber tomb
- ⊙ Neolithic 'camp'
- ↳ Cave or rock-shelter
- Various



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By
GRAHAME CLARK, F.S.A.

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*Illustrated by
Drawings, Diagrams and Photographs*



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PREFACE

No one has expressed more aptly the difficulties faced by a writer on archaeological topics than that great pioneer, William Stukeley:

The writers on antiquities generally find more difficulty, in so handling the matter, as to render it agreeable to the reader, than in most other subjects. . . . 'Tis an offence, if either we spend much time in a too minute description of things, or enter upon formal and argumentative proofs, more than the nature of such accounts will bear (*Abury* (1743), p. 1).

The same master, who, let it be confessed, failed lamentably to practise what he so eloquently preached, has left a recipe, which, were I to succeed in following it even to a trifling degree, would bring this book to life beyond reasonable expectation:

The subject of antiquities must be drawn out with such strong lines of verisimilitude, and represented in so lively colours, that the reader in effect sees them, as in their first ages: And either brings them down to modern times, or raises himself, in the scale of time, as if he lived when they were made.

It is my aim to describe, within the narrow limits imposed by existing deficiencies in the evidence, the manner in which our forefathers lived before the dawn of history—how they earned their daily bread, the sort of houses they lived in, the handicrafts they practised, their methods of mining, the extent to which they traded, their modes of transport, the means they took to defend themselves against attack, the nature of their burial rites and the character of their sacred monuments. I shall endeavour to write of ancient remains, whether monuments or small finds, in terms of the human beings who built and used them. For it is not in surveyors' plans, nor yet in the contents of museum cases that our common interest in the past centres, but rather in those generations of our forebears by whose labours the foundations of our island history were laid.

In so doing I count it a privilege to use the works of numberless colleagues and fellow-workers, the vast majority of whom have laboured for British Archaeology without either the hope or the expectation of reward, or even of recognition. As it would be impossible in a work of this kind to acknowledge their contributions individually and invidious to make a drastic selection, I have avoided reference to living archaeologists, mentioning by name only a few of those who have taken their place in the history of the subject.

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Among those whose assistance in various ways I should like to acknowledge I must first mention my wife, whose reading of the text removed many blemishes. My friend Mr. C. F. C. Hawkes, F.S.A., of the British Museum, kindly read Chapter I, and my Cambridge colleagues, Professor T. H. Hutton and Mr. T. C. Lethbridge, F.S.A., Chapters IV and VI respectively. Acknowledgments for illustrations are listed separately, but I cannot forbear from thanking Major G. W. G. Allen, F.S.A., for his great generosity in allowing me to use some of his finest air-photographs, and Dr. A. Bulleid, F.S.A., for the trouble he went to furnish me with photographs of his excavations at the Somerset lake-villages. For help and good-will of various kinds I would like also to thank my friends Mr. T. D. Kendrick, F.S.A., Keeper of the Department of British and Mediaeval Antiquities in the British Museum, Mr. C. W. Phillips, F.S.A., and Mr. H. St. George Gray, F.S.A.

CAMBRIDGE, *June* 1940

GRAHAME CLARK

PREFACE TO THIRD EDITION

OPPORTUNITY has been taken to revise some of the views expressed in the earlier editions and to incorporate some fresh information. I have to thank Sir Cyril Fox, F.B.A., for details of the new find near Holyhead, Anglesey. The publication of Dr. R. E. M. Wheeler's discoveries at Maiden Castle, Dorset, has thrown new light on more than one chapter of our prehistory, from "ridge" barrows to the westward spread of the Belgae.

GRAHAME CLARK

PREFACE TO FOURTH EDITION

FEW changes have been made in the text, but certain new discoveries have been included, notably the Neolithic house at Ronaldsway, Isle of Man, and the timber trackways recently investigated in the Somerset Fens.

CAMBRIDGE, *March* 1948

GRAHAME CLARK

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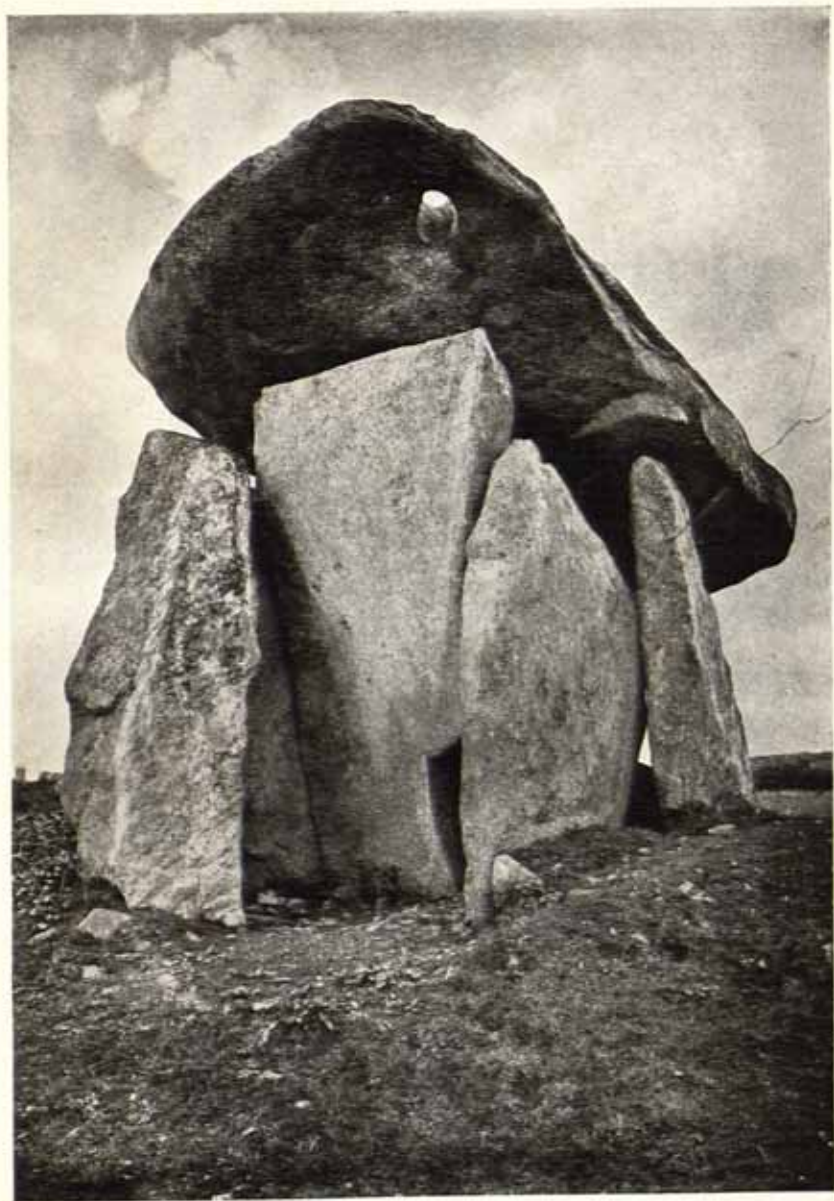
A SELECT BIBLIOGRAPHY

FROM among the numerous books available for further study the following may be recommended as a preliminary list:

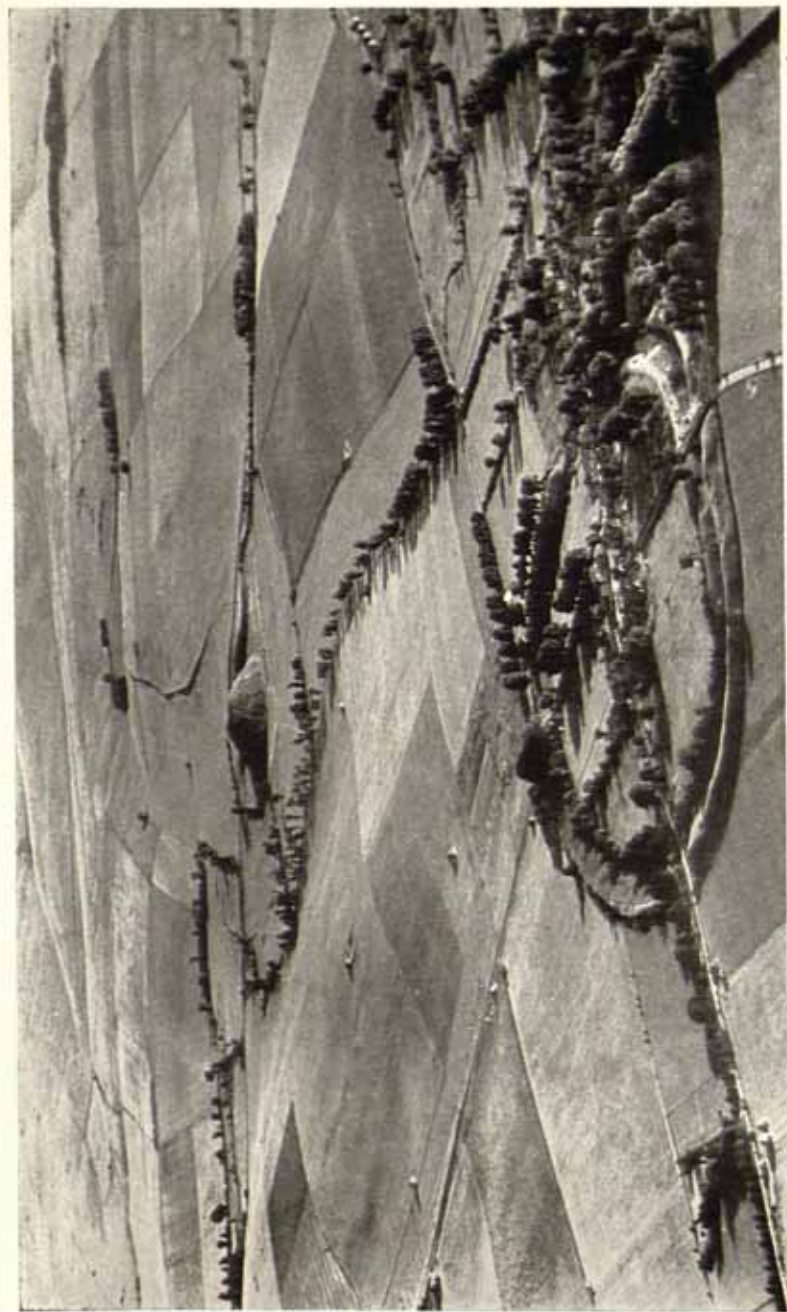
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- The Personality of Britain*. Cardiff, 1938.
- GRIMES, W. G. *Guide to the Collection illustrating the Prehistory of Wales*. Cardiff, 1938.
- HAWKES, JACQUETTA and CHRISTOPHER. *Prehistoric Britain*. London, 1944 and 1947.
- HENCKEN, H. O'N. *The Archaeology of Cornwall*. London, 1932.
- KENDRICK, T. D., and HAWKES, C. F. C. *Archaeology in England and Wales, 1914-32*. London, 1932.
- WHEELER, R. E. M. *Prehistoric and Roman Wales*. Oxford, 1925.

To obtain anything like a full picture, however, recourse must be made to periodical publications of more or less specialist character. In addition to the publications of the numerous County Societies, many of which reach a high standard of excellence, there are a number of centralized periodicals in which most of the more important articles are to be found, viz.:

- Antiquaries' Journal* (Society of Antiquaries), London.
- Antiquity*, Gloucester.
- Archaeologia* (Society of Antiquaries), London.
- Archaeologia Cambrensis*, Cardiff.
- Proceedings of the Prehistoric Society*, Cambridge.



2 TRETHEVY: dolmen



3 AVEBURY: general view from the air

INTRODUCTORY

WE are so accustomed to think of ourselves as islanders that we sometimes tend to forget that Britain is part of the European continent from which she has at certain intervals in her history become temporarily detached. During long epochs she was in very fact part of the larger land-mass: the Thames was but a tributary of the Rhine and the Eastern lowlands a margin of the plain of northern Europe stretching away to the Urals. Amidst the manifold changes of the Great Ice Age, when glaciers waxed and waned, now spreading over vast tracts of Europe, now retreating towards their centres of origin, and ocean levels fell and rose again as huge volumes of water were alternately locked up and released by fluctuating ice-sheets, the land connection was more than once severed, only to be renewed by a fresh cycle of events. When last we became an island is not known for certain. The low-lying fens on and around the Dogger Bank, the existence of which is proved by the peaty "moorlog" brought up in fishermen's trawls from 20 fathoms or more deep, were flooded over by the rising sea about 10,000 years ago. It cannot have been long after this time that connection with the continent by way of the southern part of what is now the North Sea basin was broken. Some have argued that a land-bridge was nevertheless maintained across the Straits of Dover late enough to allow the passage in the IIIrd millennium B.C. of Neolithic man and his cattle. Against this must be set the strong probability that the chalk ridge originally linking Kent and Sussex with Artois was breached during a previous insulation of Britain. Thus we have probably been an island for the last 8 to 10,000 years.

With the story of Britain during the Ice Age, which the progress of science has unfolded during the last hundred years, we cannot concern ourselves in detail. Let it suffice to say that British archaeologists and geologists, working together on the unrivalled sequence of deposits exposed in cliff sections and in commercial excavations of all kinds in East Anglia, the Thames Valley, and contiguous areas, are gradually and with infinite patience piecing together the story of Lower Palaeolithic Man and reconstructing the natural environment against which he played out his destiny. When we consider the tens of thousands of years which have elapsed,

it is perhaps hardly surprising that almost the sole evidence surviving comprises a few fragments of human crania and chipped implements of flint and chert, numerous, but possibly more limited in what they can tell us of their users than is admitted by students at the present day. These rather pitiful relics, which are all that remain of thousands of generations of men in this corner of Europe, have only too often been damaged, removed from their proper deposits, and incorporated in others during the vicissitudes of their subsequent history. Rolled in rivers which now flow in other beds, tossed on beaches long since high and dry, or torn up by glaciers born in Scandinavia, they have yet survived, rolled, bruised, and deeply scratched, to tell us what they may of human culture in the remote past.

One lesson of profound significance they do teach. Throughout our history, whether as an island or as an extension of the continental land-mass, it has been our lot to sit at the corner of Europe and receive influences from many directions, from east, south, and south-west. Hardly a major wave of civilization has surged across Europe but sooner or later it has broken upon our shores. It is in this variegated tradition, this mixture and coalescence of ideas and ways of doing things, rather than in any sterile "purity" of culture that we recognise our heritage. Already in Lower Palaeolithic times Britain reaped the benefit of her position on the flank of the Rhine, even then a great cultural divide. Among the lithic industries associated with the men of this period archaeologists recognise two major varieties, one in which finished implements were fashioned from flakes previously removed from the parent core or nodule, the other in which they were formed through the reduction of the core itself by the removal of waste flakes. The flake industries are found east of the Rhine, extending as far afield as Mongolia; west of the Rhine and south of the Himalayas, on the other hand, is the province of the core industries. Along the zone of contact the two traditions intermingled and sometimes, as in southern Britain and northern France, coalesced. Thus, even at this remote period, southern Britain found herself fertilised by what were then the two main streams of human progress.

At one time it was thought that Lower Palaeolithic implements were restricted to a line roughly joining the Wash to the Bristol Channel. Certainly the vast majority of finds come from southern England, but recent work has extended their range well into the Midlands by revealing them in the Severn and Avon valleys and in the Coventry and Notting-

ham districts. Discoveries have been claimed for Nidderdale and localities even further north, but these have not been very widely accepted. On the most conservative basis, however, it has been shown that Lower Palaeolithic industries occur well within the territory covered by ice at the maximum extent of the Pleistocene glaciers. This only goes to emphasise how man adapted himself to the rhythm of the Great Ice Age, spreading in genial periods into regions vacated by the retreating ice, just as he abandoned his old hunting grounds when it returned.

If southern England was an attractive resort for interglacial man, it must have been bleak indeed at the height of a glaciation. The one spanned by Upper Palaeolithic Man was less intense than its predecessors, but the ice-free parts of the country were not particularly pleasant to live in. The treeless tundra was roamed by a few hunting bands whose flints and meat-bones make a pathetic showing when compared with the rich material from the caves and rock-shelters of the Dordogne, the Pyrenees, and the Cantabrian mountains, crowned by engravings and paintings which breathe the very soul of the hunter. Yet, meagre as our Upper Palaeolithic antiquities are, they illustrate in embryo that trend towards regional development which was to become so much more pronounced after Britain had become an island. Scarcely touched by the Magdalenian of France and Spain, our Aurignacian stock evolved on independent lines. The "Creswellian" culture, appropriately named because first recognised in the caves opening on to the ravine of Creswell Crags, was so far from being rich that one of its characteristics is the lack of distinctive bone types. It owes its interest to us to the fact that it is peculiar to a territory destined to be included in England and Wales.

The manifold readjustments which followed the final withdrawal of the ice-sheets altered our landscape profoundly. The dwarf birch and willow and the *Dryas* flora of the open tundra was gradually replaced by forest trees, at first the hardy birch and pine, later the warmth-loving oak, elm, lime, alder, and hazel, and then the beech: the reindeer gave way to forest beasts, the red deer and the aurochs; and majestically the sea rose, flooding the low-lying Fens round the Dogger Bank, severing the land-bridge to the continent, and progressively covering the off-shore fens and "submerged forests," until the shape of Britain we know today had been attained, save only for the final moulding of her features by the age-long processes of erosion and deposition. Such

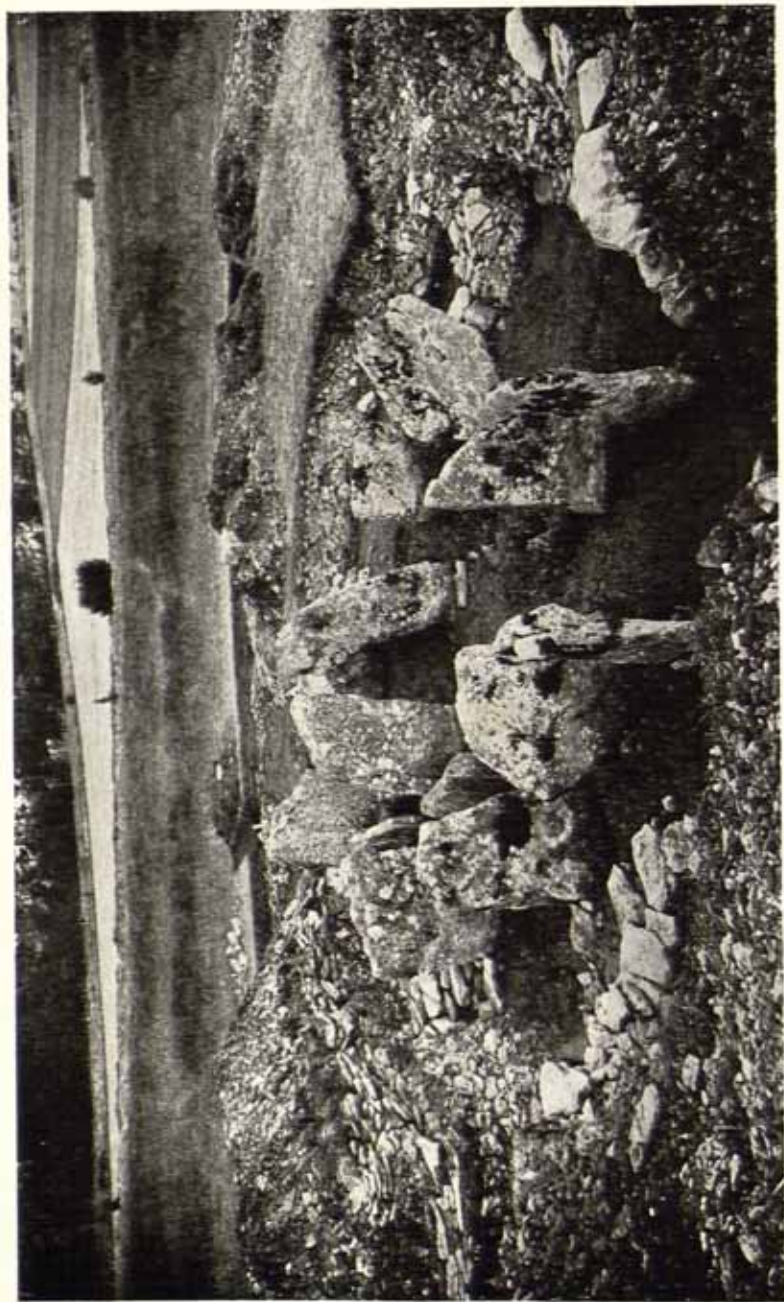
changes as these were symptomatic of the passing of an epoch. All over the world belts of climate shifted towards more extreme latitudes; temperate zones encroached upon sub-arctic, and sub-tropical on temperate. Forest replaced tundra, and desert forest. The world of Upper Palaeolithic Man was destroyed by the relentless march of natural processes.

Somewhere in Afrasia, in the zone of post-pluvial desiccation, an economic revolution was accomplished which was to open up unimagined possibilities: man learnt by domesticating animals and plants to produce and control a substantial part of his food-supply. In thus solving their immediate problem of subsistence the earliest farmers had opened a new chapter in world history, but it was one which concerned at first only narrowly defined parts of Egypt and the Middle East. Between the break-up of the Upper Palaeolithic cultures and the spread of Neolithic ways of life to Europe, it was until comparatively recently imagined that a kind of "hiatus" supervened, during which our continent remained empty and unpeopled. We now know that in fact the land was occupied by groups of food-gatherers economically at one with their Palaeolithic predecessors, except in certain details, yet culturally differentiated by adaptation to the new conditions of their environment.

The Mesolithic population of England and Wales was composed of four main elements, one perhaps of Creswellian origin, the others spread from the continent, one from the east, the others from the south and south-west. In the low plains and river valleys of eastern England, from the mere beds of Holderness to the Thames and its tributaries, and the Southampton Water district, we find traces of a culture such as occurs by rivers and old lake beds over the North European Plain from the Seine to the Gulf of Finland. The remains most commonly found in England are worked flints, including axes and adzes with cutting-edges sharpened by transverse blows and small points (microliths) used for tipping and barbing arrows, and fish-spear prongs of bone barbed along one edge. That bands of Maglemose people, to give them their usual label, crossed by dry land, hunting and fishing as they came, is suggested by the dredging of one of their fish-spear prongs from the North Sea between the Leman and Ower Banks some 25 miles from the Norfolk coast, which, since it was incorporated in a lump of "moor-log," must have been lost while the deposit was still in process of formation in the midst of an extensive freshwater



4 WINDMILL HILL: ditch of the Neolithic "camp"



5 NYMPSFIELD: a Cotswold megalithic tomb

fen. The purely microlithic industries found in the rest of England and Wales reflect more southerly traditions and recall that recognised for the first time at Fère-en-Tardenois in north-east France. Sites occur commonly on the sandy margins of the East Anglian Fens, in the sand dunes of North Lincolnshire, high up on the Pennines, on the coasts of Wales, Cornwall, and Devon, and in Man. Traces have also been detected in northern England of a culture, first recognised at Mas d'Azil, Ariège, chiefly in the form of flat bone harpoons. From this diversity of tradition hybridisations occurred which further added to the cultural wealth of prehistoric Britain. Thus, Maglemose influence has been detected on certain of our Azilian pieces, giving them a distinctive character of their own. Again, in southern England, in a district centring on Horsham, but embracing much of Sussex and Surrey and parts of Kent and Hampshire, we find a distinctive flint industry, associated with people who dwelt mainly on the Lower Greensand and other sandy formations, and owed their existence to the coalescence of Maglemose and Tardenoisian traditions. From the moment that geographical continuity with the continent was broken our insularity became a factor of immense significance. While still retaining a position which ensured our share in the main stream of European progress, we acquired a barrier behind which we could develop our own distinctive civilization. Periods of alien influence were now succeeded by periods of gestation and integration.

If her position put her in the way of influences from overseas, the shape of Britain was such as to invite them. Cornwall and Wales thrust peninsulas athwart the western sea ways; Anglesey and Man stood in their course. Christchurch and Southampton Water were ports of call for traders from Brittany and Normandy. To newcomers from the east and south-east the estuary of the Thames, the creeks of Essex and Suffolk, the Wash, the Humber estuary and the mouths of the Tees and the Tyne offered ample means of access, while numerous slow-flowing rivers allowed easy penetration into the interior.

With few exceptions traders and invaders alike came to Britain, bringing with them a higher culture than they found. But if the benefits of civilization were bestowed through economic exploitation and repeated armed invasions, our experience has not been unique. While she was yet on the edge of the civilized world Britain was the natural victim of those who coveted her natural wealth, but with each conquest

she gained in stature, adding to her heritage ideas drawn from some new source.

In trying to assess the role of alien influence one must clearly distinguish between the two main zones into which the country has been divided by nature, namely the highland zone, defined by the outcrop of palaeozoic rocks and comprising Devon and Cornwall, Wales, the four northernmost counties of England, and a southward extension of the Penine Chain, and the lowland zone of secondary and tertiary rocks, which includes the rest of England. Broadly speaking, continental ways of life tended to be imposed on the population of the lowland zone, where we find, in consequence, a well-defined layering of cultures. In the highland zone, on the other hand, they were merely absorbed, the forces of native conservatism being sufficiently strong to maintain continuity and blur the sequence. Both played an essential part, one receiving and nourishing a succession of new ideas, the other maintaining old traditions.

The bare rudiments of a higher civilization were introduced by newcomers from the south and west who were still technically within the Stone Age: when they reached us on the fringe of the ancient world, they appear to have been ignorant of the processes of metallurgy, and so can rightly be described as Neolithic. They brought with them hoe agriculture and stock-raising, and introduced megalithic tombs, earthen long barrows, flint-mining and a peculiar kind of "camp" with causewayed or interrupted ditches. Their pottery is of a kind which in its essence is common to the whole of Europe west of the Rhine and much of the North African littoral. Made as a rule from carefully prepared paste, "western" pottery was built up into thin-walled vessels inspired by leather prototypes. The leading forms were bag-shaped pots and carinated bowls, the shoulders of these latter no doubt recalling the hoops inserted into the original skin bag. Simplicity is the key-note both of form and decoration. Bases were round, rims were rarely moulded at all elaborately, and lugs, sometimes perforated for string, took the place of handles. Decoration was either absent or restrained and not infrequently inspired by details in the prototype. Though easily recognisable as a family, Western Neolithic pottery is poor in secondary features which might enable one to distinguish regional variations. This makes the task of interpreting the Western pottery found in England and Wales one of extreme difficulty. Indeed, until we have more to go upon than a few stones' weight of sherds, it would be waste of



6 NEOLITHIC POTTERY: Peterborough ware



7 NEOLITHIC POTTERY: Abingdon ware



8 BEAKER POTTERY



9 CROUCHED BEAKER BURIAL

effort to make a serious attempt. The one thing we do know is that Western pottery reached us from more than one continental source, for beneath the superficial homogeneity of the English material certain differences can already be detected, which when they are more clearly defined will help us to unravel the paths by which Neolithic civilization first reached us.

From the primitive ware found in the ditches of the "camp" on Windmill Hill, near Avebury, Wilts. (4), which may have reached us from anywhere between Brittany and Flanders, one can distinguish an eastern style, at home on the Essex coast, in the Cambridgeshire Fens, and the East Riding, undecorated, frequently with rolled rims and including carinated vessels reminiscent of the Michelsberg culture of the Rhineland. At the causewayed camp at Hembury, Devon, on the other hand, side by side with normal Windmill Hill pottery, the excavators found a fine red ware with long perforated lugs having expanded ends ("trumpet lugs"), for which parallels must be sought in central and northern France at the Camp de Chassey and other sites. A necked jar from the megalithic gallery grave at Nympsfield, Gloucestershire (5), can be matched from similar tombs in the Loire Inférieure and the Vendée. From the series of chambers which form the Mull Hill circle in the Isle of Man we find shouldered bowls built up from two pieces in such a way that the lower one overlaps and forms a sharp upturned carination, a feature at home in the North of Ireland. There is thus ample evidence that the Western Neolithic reached us by a number of streams mostly issuing from different sources between the Loire and the Rhine.

Quite distinct in origin and characteristics was the culture which began to arrive probably rather later from the east, penetrating the Thames and the creeks of Essex and Suffolk, and entering by way of the Wash. The most famous site was on a low gravel ridge near Peterborough overlooking the broad expanse of the Fens. Unlike the Westerners who in lowland Britain favoured the upland chalk and oolite, the newcomers preferred river-valleys reminiscent of their homelands on the great European plain. Their pottery was relatively barbarous, of coarse paste, built up into thick-walled bowls, the rims and upper parts of which were smothered with impressed decoration (6). Although much remains to be learnt of the origins of this pottery, many details of its decoration, notably twisted cord impressions arranged in herring-bone pattern, and pits sunk deep into

the wall of the pot below the rim, point unambiguously to the shores of the Baltic and a broad zone of country stretching down to the Black Sea as its homeland.

Thus there met on English soil towards the end of the third millennium B.C. two main streams of culture, one issuing from the civilized west and ultimately of Mediterranean inspiration, the other spreading from the outer fringe of Neolithic Europe, from lands settled by poor fisher folk with no more than the bare rudiments of the higher civilization, in many ways more Mesolithic than Neolithic in their outlook on life. Yet, even between peoples with such widely differing antecedents, intermingling and fusion seems to have occurred when they met on the chalk downs of Wessex and Sussex. Throughout prehistoric times pottery was mainly a local product; as such, subject to the few exceptions which prove the rule, it reflects fairly reliably the movements of peoples, as distinct from the diffusion of culture by trade. In the light of this general rule, the discovery at the causewayed camp at Whitehawk, Brighton, and at the open settlement on Easton Down, near Salisbury, of pots of Windmill Hill ware, decorated with Peterborough designs, must point to cultural fusion. These simple hand-made vessels are symbols of a strength born of compromise; they typify that readiness to profit from diversity of origin which seems to have characterised England from the earliest times. It has been suggested that the arrival of the Peterborough people may have stimulated the development of a peculiarly British style of Western pottery, characterised mainly by a more abundant use of ornament and first recognised at the Neolithic site at Abingdon, Berks. However that may be, Abingdon ware is certainly a British specialisation from a ceramic common to the whole of western Europe (7).

Close on the heels of the Peterborough people came fresh waves of invaders, who round about 1900 B.C. began to arrive with beaker-shaped pots, usually decorated by the impression of finely toothed stamps (8). One group hailed from the south, spreading from Brittany to Christchurch and so by way of the Avon into the heart of Wessex. The smooth S-profile and superior fabric of their pottery betray a close relationship to the true bell-shaped beakers of continental prehistory, which from their homeland in Spain spread rapidly by way of southern France and northern Italy to south Germany and Bohemia, and on the other hand followed the old megalithic route to Morbihan and Finistère. The larger group, however, was of mongrel parentage, originating

in the Rhineland, where true bell-beaker folk came into contact with battle-axe people, who with their cord-impressed beakers were at that time expanding from their homeland in Saxo-Thuringia. From their place of departure in the Lower Rhineland the hybrid Beaker people, the northern strain in whom is evinced by their flint daggers and stone battle-axes, spread over much of eastern England from Sussex and East Kent to the coast of Northumberland, penetrating deep into the country by way of the Thames, the Fen rivers, the Trent and the Humber. It is possible that the grooved and plastic decorated pottery, comprising pots of splayed flower-pot form, which was first recognised at sites on an ancient land-surface exposed at low water near Clacton, came from the same quarter about this time.

Probably because of the important part played by the bell-beaker people in opening up the trade routes essential for the development of metallurgy in Europe, the Beaker invaders of Britain have sometimes been credited with the inauguration of our Bronze Age. In truth, apart from a few dagger blades and awls, they brought no metal with them and, except in so far as they increased the demand, played no essential part in this new development.

At the dawn of the Bronze Age Ireland stood in the very vanguard of civilization in north-western Europe by reason of her wealth in alluvial gold and her easily-worked deposits of copper. England, indeed, first acquired substantial metal objects in the form of flat and flanged axes through her position athwart the natural lines of communication between Ireland and the continental seaboard. The origins of native metallurgy in England are still somewhat obscure, but it can be assumed that a knowledge of smelting and casting must soon have followed the acquisition from Ireland of simple metal forms. Thus at the beginning of the Bronze Age the influence exerted by the natural distribution of metals was sufficient to counteract one of the main tendencies of our prehistory. Compared with the early bronze founders of Ireland and Scotland, the Beaker invaders of eastern England were backward and relatively barbarous. In the Wessex school of metallurgy, however, the commonest products of which were daggers with grooved blades, the lowlands did make one important contribution, although characteristically it was inaugurated by newcomers from Brittany spreading in by way of Christchurch and the Avon. It may be noted that the Wessex people derived much of their wealth from trade, in which Irish gold played an important part.

Leaving aside the Breton incursion, which, far from being a folk-movement, involved only a few leaders endowed with special prestige through their control of trade in precious commodities, Britain enjoyed a respite from large-scale foreign immigration for over a thousand years from the time of the arrival of the Beaker peoples. During this lengthy period of tranquillity earlier immigrants were absorbed and their cultural innovations gradually assimilated. Above all we can observe that, though the natural wealth of the lowlands made itself felt, for instance, in the attraction of Irish gold from the west, the cultural influences which were to dominate the Middle Bronze Age emanated from the highland zone. The strength and persistence of the native tradition in face of the Beaker invasions was indeed reflected in the so-called "food-vessels," which during the full Early Bronze Age (1700-1400 B.C.) were in general use in Yorkshire, the Peak District, Northumberland, and Durham (10). Although the precise time and place of origin of the English "food-vessels" remain in doubt, the most likely explanation is that they represent the persistence of an earlier tradition of pot-making, which in most of Lowland Britain was more completely obscured by the invaders. The flat base and truncated conical form of the lower part of the pot, and the groove placed at the shoulder of the commonest variety of English food-vessel are innovations, but many features characteristic of Neolithic Peterborough ware can still be recognised, notably the heavily moulded rim, the concave neck, and the lavish impression of twisted cords for surface decoration.

During the Middle Bronze Age the native tradition in pot-making made itself felt over the whole country, as much in East Anglia and Wessex as in the East Riding and the highland zone. All the features common to food-vessels and bowls of the Neolithic Peterborough ware were equally present in the "collared" and "overhanging-rim" urns of this time (11, 12); one of the early forms of cinerary urn was in fact no more than an enlarged food-vessel. Deepening of the rim so as to form a distinct collar above the neck produced a tripartite urn. Further magnification of the collar at the expense of the neck gave rise to the overhanging-rim form, in which the heavy rim literally overhung the sides of the pot. Traces of a neck in the form of a shallow depression were at first retained, but this was ultimately suppressed, the urns becoming bipartite.

The Late Bronze Age was ushered in by a revolution in metal-working. The use of bronze became far commoner



10



11

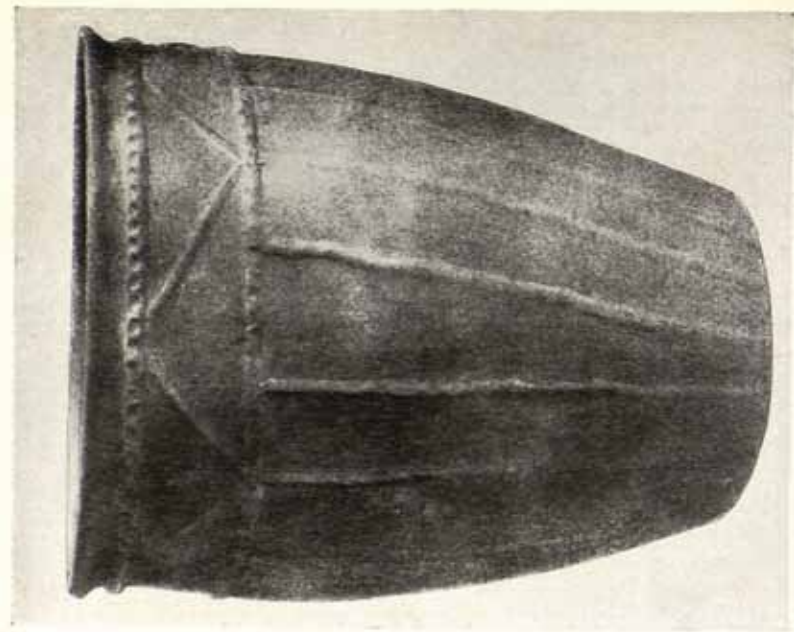


12

10-12 BRONZE AGE POTTERY: 10 "Food-vessel"; 11 Collared urn; 12 Overhanging-rim urn



13



14

BRONZE AGE POTTERY: 13 Encrusted urn; 14 Barrel urn

than ever before, the leaf-shaped slashing sword displaced the native rapier, socketed axes supplemented the native palstave, and earlier forms of spearhead were replaced by more efficient socketed varieties. Yet there is no reason for thinking that immigration took place on any extensive scale during the earlier half of the period (1000-750 B.C.). A few groups crossed the Channel from northern France and settled parts of the Sussex Downs, but the diffusion of the new metal types over both highland and lowland zones, far beyond the restricted regions affected by this immigration, must have been accomplished by trade, for which evidence is afforded by numerous hoards of bronzes.

Throughout the earlier half of the Late Bronze Age the native Middle Bronze Age culture was maintained even in lowland England. It was not until the middle of the 8th century B.C. that immigrants began to arrive in numbers sufficient to introduce broad cultural, as distinct from merely industrial, changes. With their arrival in the lowland zone one can observe, not only new metal forms, such as winged axes, socketed chisels and gouges, straight-sided swords with "carp's tongue" tips and "bugle-shaped" objects, all typical of the West Alpine area, but also a new system of agriculture, round houses with central posts, and the practice of urnfield burial in barrel and bucket-shaped urns (14). The immediate source of the immigrants was the seaboard of the continent from north France to the Lower Rhine. There is some evidence for an independent immigration to the coasts of north-eastern England and of eastern Scotland, but this does not materially affect the picture in England and Wales as a whole, where, outside the zone occupied by the newcomers from the south and south-east, native traditions survived and even gave rise to new developments. The collars of cinerary urns tended to disappear, the line of the overhang surviving in the form of a raised rib. Hooped urns arose through multiplying the ribs, and encrusted urns (13) through the application of plastic strips, in the Skara Brae tradition, to enlarged "food-vessel" urns.

Although iron began to be used for cutting implements as early as the 14th century B.C. in Asia Minor and had spread to what was later to become the Roman province of Noricum round about 1000 B.C., it was not until some five hundred years later that people accustomed to the use of iron on an extensive scale began to reach Britain. They brought with them a much-devolved form of the culture named after the cemetery of Hallstatt in Austria. Some hailed from the regions

contiguous to the mouth of the Rhine and entered from the south-east by way of the Thames and the Wash, making landings as far north as Scarborough and bringing with them shouldered pots decorated by finger-printing. Others crossed the Channel from northern France and penetrated Wessex from the south: their deeply incised and fine haematite coated wares, found on such sites as All Cannings Cross and Hengistbury Head, compare closely with pottery from the cemetery of Les Jogasses in Champagne. To appreciate the hybrid character of our earliest Iron Age culture it is necessary, however, to bear in mind that, though of devolved Hallstatt origin, it flourished during the first flowering of the La Tène, which on the continent succeeded that of Hallstatt. Another element which must not be overlooked is that provided by the Celtic groups who settled part of lowland England in the Late Bronze Age. Until greater definition has been achieved archaeologists are agreed upon calling this hybrid culture "Early Iron Age A."

The second major spread of iron-using people to Britain began with the arrival in the middle of the 3rd century B.C. of bands of warriors who crossed the Channel from the Marne district of northern France in all the panoply of a developed La Tène culture. Their martial character is reflected as much in the magnificence of their weapons (15) and trappings as in the defences thrown up against them on the downs of Sussex and Wessex by the established A people. That they brought few women with them is shown by the comparative rarity of Marnian pottery, which is confined to quite a few sites in Wessex, Sussex and east Kent, where a few pockets of invaders seem to have established themselves among a predominantly Iron Age A population. Further afield the immigrants, usually described as having introduced the Iron Age B culture, seem to have been in the nature of an aristocracy. Their taste was reflected in the schools of metal craftsmanship which they fostered, schools wherein developed the Celtic art which was to flourish so exceedingly during the closing years of our prehistory. Fresh waves of B people reached us from the south-west, the earliest yet identified bringing with them pottery decorated by impressions of duck-like birds, a style at home in Brittany and the Atlantic seaboard of Iberia. Some settled in the tin-producing regions of west Cornwall, where their pottery is found at Chûn Castle and elsewhere, but others passed up the Bristol Channel to the Cotswolds, a few sailing north to land near Aberystwyth. It is likely that the duck-people, who arrived

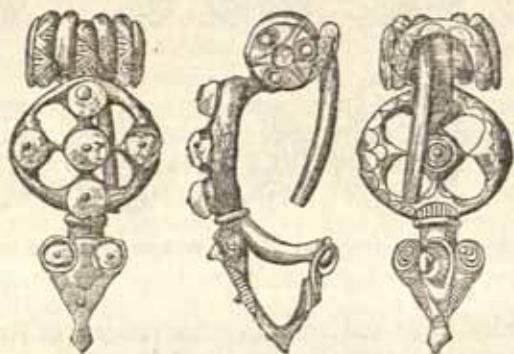


15 LA TÈNE SWORD AND SCABBARD MOUNT: from the Witham



16 GLASTONBURY LAKE-VILLAGE: foundations and palisade

in the late 2nd or early 1st century B.C., as well as their possible predecessors, were attracted in the first instance by the prospect of tin. On the other hand the various groups of B people who followed them were refugees, possibly from Caesar's conquest of Armorica (56 B.C.): some spread into the south-western counties, where they occupied lake-villages like Glastonbury (16) and Meare, as well as caves and defended hill-top sites; others are supposed to have entered Dorset, leaving few traces in the material culture of western Wessex, but introducing a novel style of military architecture; and a third group is thought to have reached east



LA TÈNE BROOCH WITH CORAL STUDS, NEWNHAM
CAMBRIDGE

Sussex, north Kent and Essex, where innovations in the decoration of pottery, possibly of Breton origin, appeared about this time.

The third major spread into lowland Britain during the Iron Age was that of the Belgae or C people. Of mixed Celtic and Germanic stock, they left their homeland and took passage overseas under pressure of German expansion. The invaders, among whom may be numbered the Catuvellauni, Suessiones and other south Belgic tribes, settled in the south-eastern counties. They probably reached Kent by 75 B.C., where their cremation cemeteries with wheel-turned pedestal urns were first recognised decisively at Aylesford and Swarling. By the time of Caesar's abortive expedition (55-4 B.C.) they had already occupied Hertfordshire, whence they later spread into Essex and southern Cambridgeshire, settling on the fen margin as far north as Peterborough. During the first half of the 1st century A.D the Belgae spread westwards and occupied Wessex. Until recently it had been thought

by some archaeologists that the occupation of Wessex was brought about by a second invasion from overseas. This theory has now been abandoned in favour of an overland spread. It has been suggested that this westward trek of the Belgae may have been led by minor princes seeking outlet from the centralised administration of Cunobelin at Colchester. Collectively the Belgic people made a two-fold contribution, welding the greater and richer part of lowland England into



BELGIC COINS DERIVED FROM THE GOLD STATER OF PHILIP OF MACEDON
(left)

larger political units and initiating that process of Romanisation by which the resistance of Celtic Britain was undermined in the century before the conquest.

Finally, if we are to view the Iron Age in its proper perspective, it is essential to realise that outside the Belgic principalities, in which coins were minted and of which the upper classes already shared some of the amenities of the Gaulish province, there were territories still occupied by A and B peoples and their hybrids, and that beyond these there were others more extensive to which there is little sound evidence that Iron Age civilization had penetrated in any form. In the northernmost counties of England and in parts of Wales the Bronze Age lasted to all intents and purposes well into the Christian era.

II

THE FOOD QUEST

LIFE in prehistoric Britain was moulded more by the exigencies of the food-quest than by any other factor. Then, as now, the whole structure and tempo of society was governed by the nature of its economic life. For all but a tiny fraction of our history—a mere week-end in the year of human experience—man has lived as a parasite on nature, hunting and gathering his food and collecting such materials as he required for his handicrafts. Yet farming, although a comparatively recent innovation, which did not reach these islands before the middle of the IIIrd millennium B.C., was the sole key to human advancement and emancipation, giving man for the first time some measure of control over his food-supply over and above what was possible through the storage of wild products.

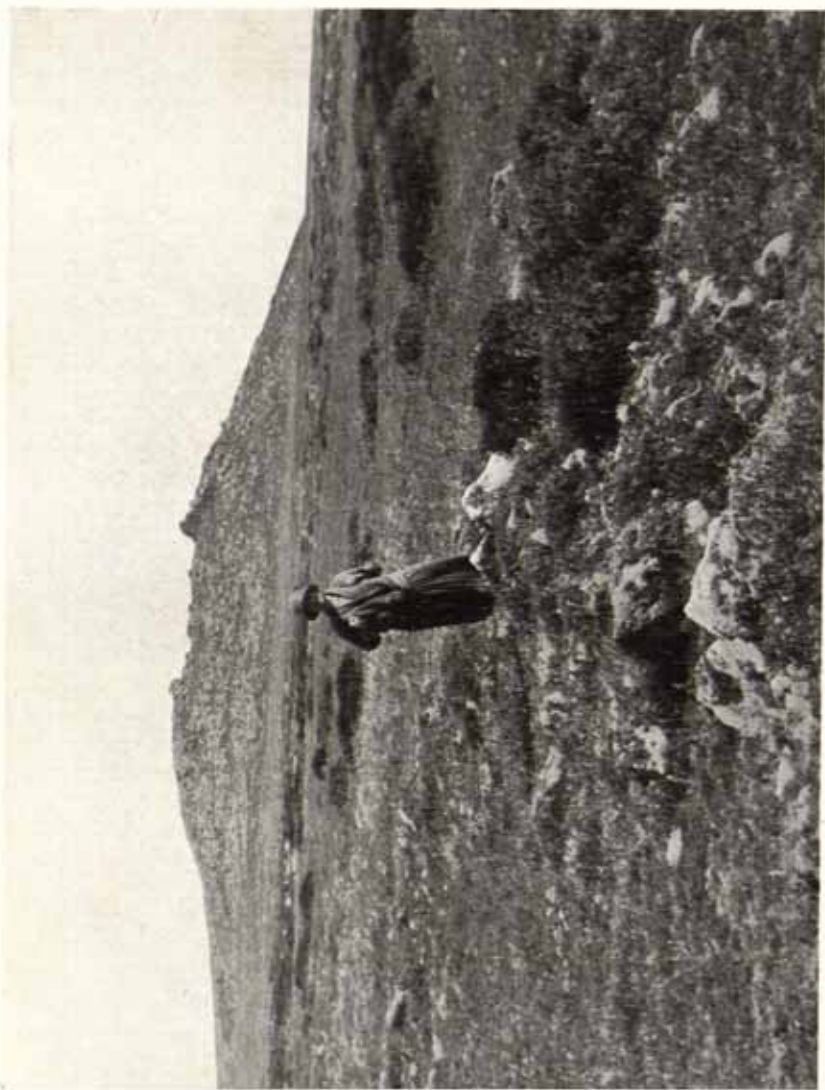
The immediate predecessors of man in the evolutionary succession were vegetarian, and it seems, therefore, reasonable to assume that wild vegetable food entered largely into the diet of the earliest men. It can be taken for granted that the people who made the Lower Palaeolithic flints found in the drift deposits of southern England exploited to the full the plant life of the genial interglacial epochs during which they roamed these northern latitudes. Roots, shoots, nuts, fruits, and berries were gathered each in their due season by small bands comprising one or two families, who wandered over familiar trails their own well-recognised territory, visiting at appropriate times localities favoured by the various species. If it were only possible to recover their vocabulary we may be sure that it would reflect an accurate and intimate knowledge of the plant world. Of the receptacles used to contain the natural harvest or of the digging-sticks needed to grub up the roots no trace has survived, though from Mesolithic times until the Bronze Age we have digging-stick weights in the shape of quartzite pebbles with hour-glass perforation, resembling those used by the modern Bushman of South Africa. Among the earliest traces of vegetable food are the carbonised hazel-nut shells from the Farnham pit-dwellings and other Mesolithic sites. Wild vegetable food continued to supplement diet throughout prehistoric times, and the sloe, haw, and blackberry, collected by the Glastonbury lake-dwellers, are not despised by country folk in our

own day. Wild plants of different kinds also produced various raw materials of value to primitive farming communities. Moss was used by prehistoric carpenters for caulking bevel-and-groove fittings and plugging cracks in wooden huts. Ferns and bracken were gathered for bedding, hair-moss and osiers for basketry, and certain fungi for tinder. Birch bark was stripped for making receptacles and possibly even canoes. Caraway and poppy seeds were used to add interest to cereal foods, and certain plants, for example the weld, were taken to provide natural dyes for textiles.

To judge by analogy with modern primitive peoples, insects must from the earliest times have contributed their quota to the food supply. Succulent grubs, snails, and above all the sweet honey of wild bees, were eagerly gathered and relished to relieve the monotony of the diet. Bees' wax would also be used for many purposes, in later times for casting bronze.

The gathering of wild vegetables and insects was largely relegated to women and children. Hunting game and fur-bearing animals was a man's work. The methods employed varied at different periods. In Lower Palaeolithic times the horse, various cervids, and such giant fauna as elephant, rhinoceros, and hippopotamus were the chief quarries. They were hunted by indirect methods, being caught in traps set by trails leading to watering places, or driven over precipices. Great masses of mammoth bones found at some continental sites suggest that by such means numerous victims were caught, presumably over a considerable period of time, at favourable localities, since it can be assumed that the carcasses were butchered as they lay. After a kill it can be imagined that everyone ate to repletion, not knowing when another opportunity might occur. The alternation of gorging and enforced fasting, bred of an uncertain food supply, is one of the characteristics of existing hunting peoples which strikes travellers most strongly.

Hunting from a distance by means of missiles was introduced in Upper Palaeolithic times. The cave dwellers of Creswell and Paviland killed their reindeer, wild horse, and bison with flint, bone or ivory headed lances propelled from spear-throwers. The chase now played a dominating part in life, the appetite for animal food being sharpened by the rigours of a late glacial climate. The extent of this pre-occupation with wild animal life is reflected in the content of the art of this time as displayed on the walls of the caves and rock-shelters of the Dordogne or the Pyrenean region, or on carved objects from the deposits resting on their floors.



17 DARTMOOR: ancient corn-plots



18 FYFIELD DOWN: Celtic fields

From the meagre British Upper Palaeolithic material it is possible to cite only a few engraved bones, among them a broken piece of rib bone with a rather crude delineation of the forepart of a horse from Robin Hood's Cave, Creswell.

In Mesolithic times the character of the fauna changed. Temperate forms like the elk, red deer, roe deer, wild pig, and aurochs became the chief food quarries. The lance was replaced by the bow and arrow, the latter tipped by tiny microliths. For fur-bearing animals, such as the fox and marten, special arrowheads were used to avoid damage to the pelt. It is possible that the dog, the only domesticated animal possessed by the Mesolithic food-gatherers, was used in hunting.

With the coming of agriculture hunting declined in importance, although it continued to supplement the food supply throughout the prehistoric period, as it does today. The elk had disappeared by Neolithic times, and the aurochs by the Bronze Age, but wild deer and boar survived until recent times. As for fur-bearing animals, the Glastonbury lake-villagers hunted the fox, wild cat, otter, and beaver. It is interesting to note that in the course of the Bronze Age the bow and arrow gave way to the spear as the chief projectile. The



BARBED AND TANGED
FLINT ARROWHEAD, EARLY
BRONZE AGE

sling seems to have appeared in the Late Bronze Age in restricted areas, and to have spread more widely in lowland Britain during the Early Iron Age. Although certainly used in warfare, as witness the dumps of pebbles at Maiden Castle, Dorset, the sling was also used in hunting. At the peaceful village settlement of Glastonbury clay sling-pellets were evidently a home product, many of those found being still unfired. Probably they were used to shoot birds, remains of which include pelicans, cranes, swans, and ducks. It is unlikely that hunting had developed as a sport prior to the emergence of pronounced class distinctions during the Early Iron Age. Possibly the use of wild boar designs as helmet crests or shield decorations may be one reflection of a love of the chase. A Belgic prince's idea of sport would probably have been to assist at a battue of animals stampeded into nets by dogs and horsemen.

Evidence of ancient fishing is not always easy to come by, but there is no doubt that the art was practised by Upper

Palaeolithic man: representations of fish are not uncommon in cave art and fish-bones have been found in cave deposits. The discovery of fish-shaped bone lures and pointed gorges shows that the line was used. When the fish swallowed the gorge a sudden tug would cause it to swivel and the points to pierce the gullet. The hook was not introduced until Mesolithic times on the continent, and it remained barbless until the spread of metal. Although barbless bone fish-hooks are a common feature of the Maglemose culture they have yet to be found in England. Barbed ones of bronze occur freely in the Swiss lake-villages, but are excessively rare here. It should be remembered that there are plenty of ways of making hooks without using bone or metal. Net fishing, an integral part of the Maglemose culture, must have been carried on in Eastern England away back in Mesolithic times, though the earliest evidence we can yet adduce for it in this country is from the Glastonbury lake-village, where lead net-sinkers were quite common. The villagers caught roach, perch, trout, and shad. Large fish, notably pike and salmon, were sometimes speared. The inland fisher-folk of Mesolithic times commonly used leisters consisting of two or more barbed prongs of wood or bone lashed to a wooden handle. Isolated bone prongs have been dredged from the Thames and from the old inland fishing and hunting grounds on the present North Sea bed, and others have come from ancient mere beds in Holderness. Iron fish-spears, their form modified by the possibilities of the material, were in common use in parts of Britain until comparatively recent times. A late 18th-century observer throws an interesting sidelight on the methods used, when he tells us of the River Dyfi, that it "abounds in salmon, which are hunted in the night, by an animated but illicit chace, by spear-men who are directed to the fish by lighted whisps of straw." The most primitive method of catching fish, and one that would leave little or no archaeological trace, is the use of various forms of traps. Three distinct kinds of eel trap are used in the Fenland today.

Fishing from boats in the open sea is likely to have been a late development, though it is by no means improbable that the currachs seen by Caesar off the south coast were sometimes used for this purpose. On the other hand, the resources of the seashore, notably shell-fish and an occasional seal, were fully appreciated in early times (28). Strand-looping was especially common in Mesolithic Europe. It can be assumed that shell-middens from this period must have accumulated along many stretches of the contemporary coast-



19 GRASSINGTON: Celtic fields



line of southern Britain, since covered by the rising sea. Neolithic middens have been lost to us from the same cause. Beaker sherds were found in a midden at Cataclews, near Harlyn Bay, but the majority of the middens in this part of Cornwall date from the Early Iron Age. To this period belong those heaped up along the shores of the meres at Southchurch, Essex, among which oyster, cockle, mussel, periwinkle, and whelk are represented. The only shell middens available for study in southern Britain, in fact, date from a time when the collection of shell-fish had long become an ancillary occupation. The Romans were quick to recognise the virtues of British oysters, which soon established themselves as delicacies in Rome itself.

During the Early Iron Age the sea-shore produced a commodity of outstanding economic importance among primitive communities, namely salt. There is no evidence that rock-salt was mined in prehistoric Britain, as it was in Austria, and the sea was the natural alternative source. It is strongly suspected that the "Red Hills" of the Essex coastal strip acquired their characteristic colour through burning associated with the extraction of salt from sea water. Quantities of burnt briquetage in the form of bars and stands are associated with the sites, which cluster on the estuaries of the Colne, Blackwater and Crouch and neighbouring marshes. It is possible that these were arranged in stacks and heated, sea water then being poured over them and the resultant salt removed by scraping. Similar briquetage, which is known to have been associated with salt production in the lower Rhineland, one source of our Iron Age A culture, has been recorded from the East Anglian Fenland, from the Lincolnshire coast at Ingoldmells Point, and at Hook, near Warsash, Hampshire, where it was found with fired clay platforms. An alternative explanation of the Red Hills is that they were discoloured through the burning of kelp, but there is no evidence that the principle of manuring was understood by the prehistoric farmers.

In the earliest history of British husbandry three main stages can be recognised according to the type of implement used in cultivating the soil and the size and shape of the units tilled. In Neolithic times and during the greater part of the Bronze Age the growth of crops was subsidiary to stock-raising, and such cultivation as there was does not seem to have been fixed for any great length of time. Small garden plots of irregular form would be broken up by the hoe, worked for a few years, and abandoned. Such plots

would hardly have left much trace even had they not been obliterated over most of the country by the later Celtic fields. Only on Dartmoor and Bodmin Moor have they survived, outlined by rings of stones gathered from their surfaces and dumped on their margins by farmers of long ago (17). The introduction of the light Mediterranean plough by the Late Bronze Age and Early Iron Age colonisers of southern England, although by modern ideas it did not make for a very high standard of tillage, nevertheless marked a big stage forward. It is true that rich, heavy soils had to be passed over in favour of poor, light ones, such as are found on the chalk uplands of southern England, but the use of the plough did make possible settled farming with fixed fields. The new implement was little more than a crooked timber drawn through the soil by a pair of oxen guided by a ploughman. In default



HEAVY PLOUGH WITH COULTER (SAXON)

of any device for turning the sod it was necessary to cross-plough, a process which resulted in fields of squarish shape. Once the turf was removed from the chalk slopes, ploughing and the processes of natural erosion tended to induce a certain terracing, the upper margins of the field cutting into the hillside, the lower ones being raised in height through accumulation of soil working downwards. The system of horizontal banks or lynchets, formed in this way, can be quite prominent even when viewed from ground-level, especially when the sun is casting long shadows. From the air, in conjunction with the lower banks formed where the plough turned on its course along the slope, they reveal the Celtic field system almost as clearly as a map (18, 19). The heavier plough, needing a plough-team of several oxen and commonly provided with wheel, coulter and mould-board, a type which turned the furrow and so obviated the necessity of cross-ploughing, was not generally used until Saxon times, although it may have been introduced locally by the Belgae.

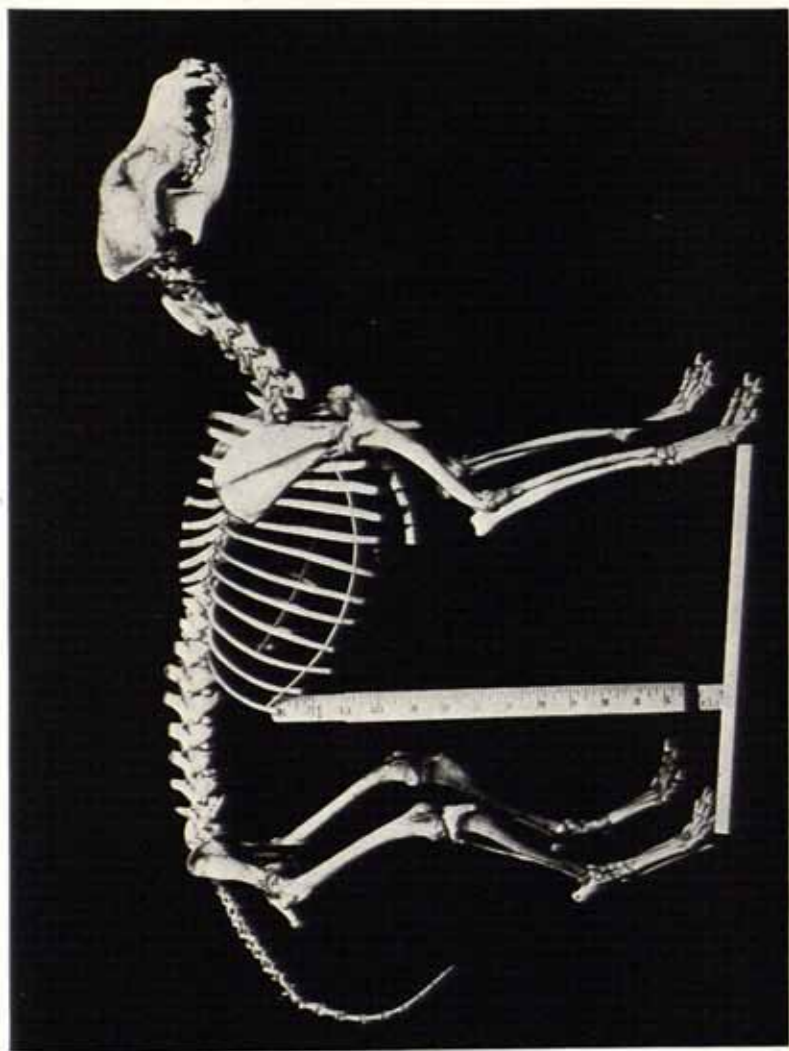
Yet it is certain that the old "scratch agriculture" persisted on the poorer soils throughout Belgic, and, with the possible exception of the villa estates, throughout Roman times. Most of the Celtic fields of the Sussex Downs are known to have been cultivated during the Roman era, and some may even have been laid out at this time. The strip field, associated with the heavy plough, did not spread over the lowland generally until the Teutonic invasions, and it was during the so-called Dark Ages that the forests on the heavier richer soils were first cleared for settlement.

Our knowledge of the cereal crops grown in the fields of prehistoric Britain still depends upon quite a small number of finds of carbonised grains. A much more complete picture will be obtained when we know the results of a recent investigation of grain impressions on ancient potsherds which, received while the pots were yet unfired, give easily identifiable casts of ancient grains. By statistical studies of impressions on sherds from successive periods in various parts of the country it should be possible to learn much about regional differences as well as major trends of crop growth over a long period. At present no very precise statement can be given about the crops grown in prehistoric Britain. We know that varieties of Barley, common Bread Wheat and Emmer were already grown in Neolithic times. Oats and Rye were comparative newcomers, although the former has been recorded from the Early Iron Age. Small broad beans were cultivated at least as early. The occurrence of linen in Bronze Age barrows shows that flax must have been grown at this time—on the Continent it certainly dates back to the Stone Age. If Caesar's statement that the Britons painted themselves with woad before going into battle is accepted, this must have been cultivated during the Early Iron Age, although up to the present tangible evidence, in the shape of impressions of the fruit on potsherds, only goes back to Anglo-Saxon times.

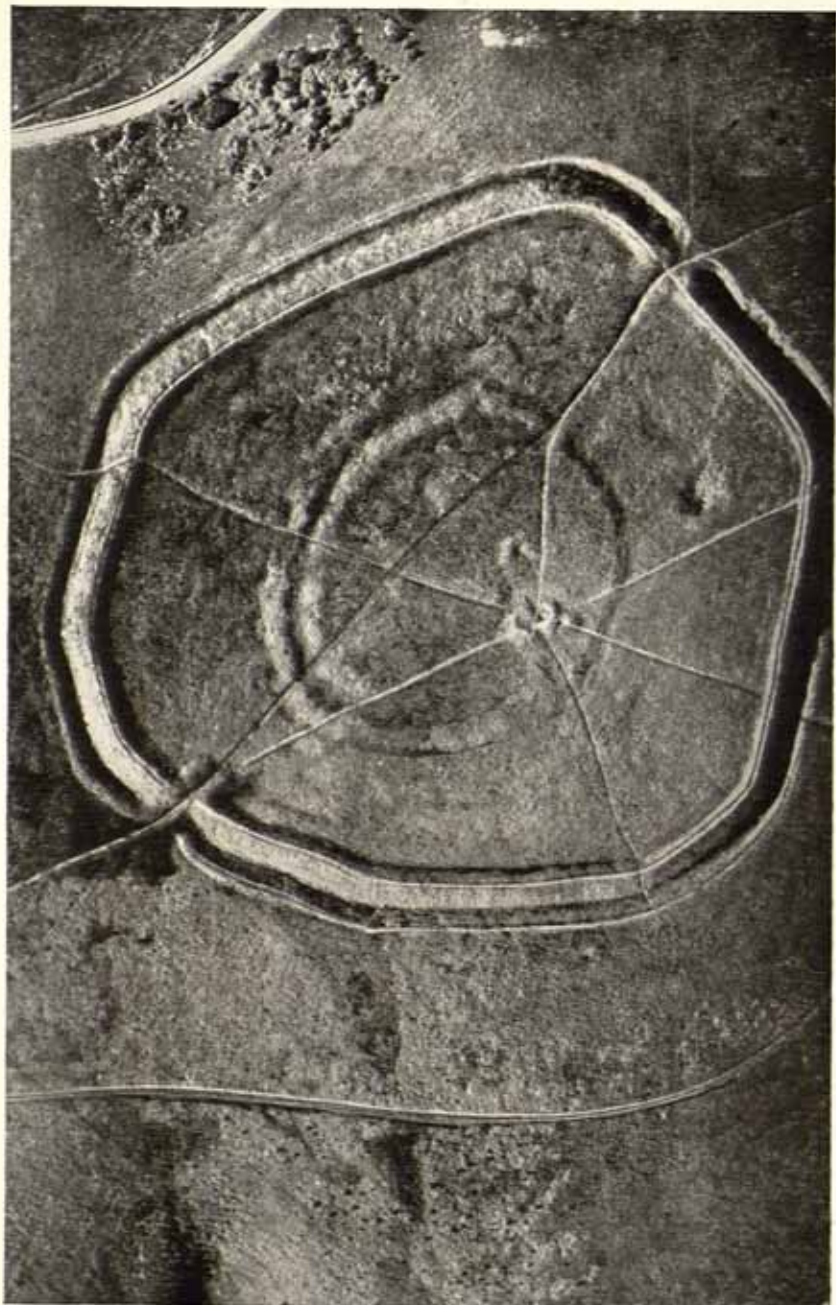
Among the commonest traces of prehistoric agriculture are the sickles used for reaping, though it may be emphasised that of themselves they do not necessarily imply the practice of agriculture, being equally adapted for cutting wild grasses. The early type of sickle, consisting of a slotted wooden handle of jaw-bone shape with flint teeth inserted, has not been recognised in Britain, nor do we know what kind of sickle the Western Neolithic people used. From the close of Neolithic times and the earlier half of the Bronze Age, how-

ever, we have numerous flint sickle blades, sometimes crescentic in form, but often with a more pronounced curve at the tip (20). Their blunted or constricted butts show that they were hafted at right-angles to their wooden handles. Their use as sickles is confirmed by the diffuse lustre caused by friction with the silica in cornstalks, which is sometimes to be found covering a zone half an inch deep on one edge. During the Middle Bronze Age single-edged metal sickles, reinforced by one or more ridges and secured to the handle by a knob, came into fashion. The two-edged socketed sickle was a British invention of the Late Bronze Age, though a few specimens were traded to France and Switzerland. It is notable that the great majority of sickle blades, whether of flint or bronze, both knobbed and socketed, have been found in East Anglia and the Thames Valley. In so far as they were used to reap corn this suggests that, prior to the spread of the Celtic field system, corn-growing was concentrated in these regions. Querns for grinding the grain are other material evidences for early agriculture. The earliest querns were operated by rubbing an upper stone against a lower one, culminating in the shapely saddle-quern with its bolster-like topstone. Rotary querns comprising two circular stones, the lower one conical with a socket for the spindle on which the upper one revolved, were introduced by the Iron Age B people.

Of the domesticated food animals of our earliest farmers the ox, a robust variety with a broad skull and large horns, was by far the most numerous. Next came the pig. Goat-horned sheep (*Ovis aries palustris*) and the goat itself were comparatively rare. The domestic animals of the Iron Age people differed in more ways than one from those of their predecessors. Oxen continued to be numerous, but they were of a smaller type (*Bos longifrons*), having short horns and long narrow foreheads. It is from the Iron Age also that we first have evidence of polled oxen. At Glastonbury and All Cannings, again, we find that the sheep was second only to the ox. Moreover, the sheep were of a different type (*Ovis aries studeri*), slender, large horned creatures resembling the somewhat deer-like sheep of the island of Soay near St. Kilda. Goats and pig were less numerous. The history of the horse in prehistoric Britain is not yet clear. It is entirely absent from the Western Neolithic "camps," though there are scanty records from certain chambered long barrows in the Cotswolds. On the other hand it occurred at Peterborough and may well have been introduced by the Neolithic people who



21 NEOLITHIC DOG: Windmill Hill



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22 THE TRUNDLE, GOODWOOD: Neolithic "camp" within Iron Age hill-fort

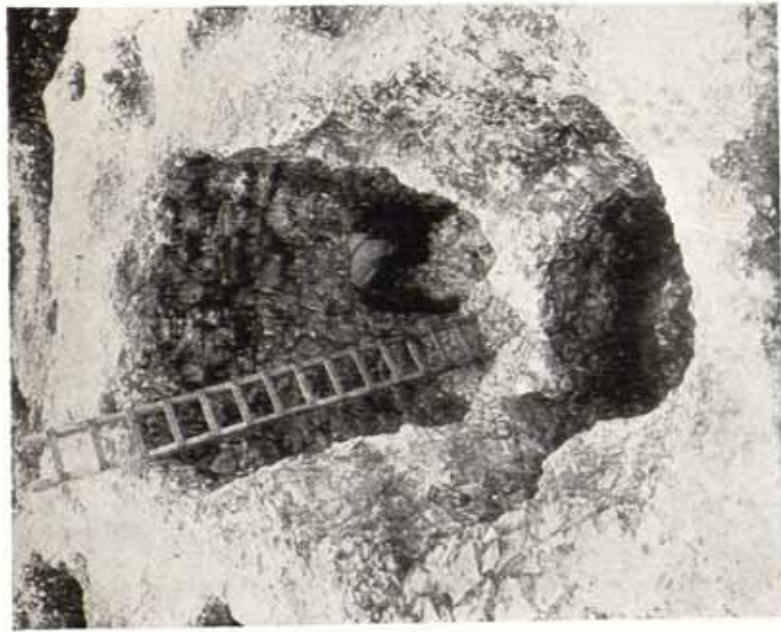
reached us from the Baltic region. There is, however, no evidence that the horse was of any great importance until towards the end of the Bronze Age. The animal kept by the Iron Age A people was small in size, standing $11\frac{1}{2}$ to $12\frac{1}{2}$ hands, and slender-limbed, recalling the ponies of Exmoor. Remains of dogs have been found in each of our Neolithic "camps" tested by excavation, and may therefore be presumed to have played an important role, most probably helping in the herding of animals. Dog droppings commonly survive owing to their high content of calcium salts, due to a diet of gnawed bones. The oldest reasonably complete skeleton from Britain must be that excavated from the ditch of the Neolithic "camp" on Windmill Hill, Avebury. While not resembling closely any existing breed, it recalls in certain respects a largish fox-terrier (21). Long-legged, short-backed and small-headed with an exceptionally wide thorax, it belongs to the sub-species *Canis familiaris palustris*, first recognised from the Swiss lake-villages. Later dog remains from prehistoric Britain seem to conform to the same general type.

The introduction of a farming economy did not for some time result in the development of settled life as we understand it. Our Neolithic forbears—and those of the earlier stages of the Bronze Age—were essentially pastoral nomads, who supplemented their food-supply by cultivating corn-plots, and by hunting, fishing, and the collection of wild plant products. It is likely that in the so-called "camps" of the Western Neolithic people of southern England, the best-known example of which is that on Windmill Hill, Avebury, we can see the head-quarters of predominantly pastoral tribes. The leading feature of the "camps" today is the concentric rings of discontinuous ditches with low internal banks. The character of the ditches (4) shows them to have been in the nature of quarries, while the banks built from the excavated material were themselves too slight to be of defensive value. It is probable that their chief purpose was to hold in position concentric palisades set at intervals. Entrances into the inner area are marked by gaps in the banks and ditches. The total area of the Windmill Hill camp is about 23 acres. The one at Whitehawk on Brighton racecourse covers $11\frac{1}{2}$ acres, the innermost of the four rings enclosing rather less than 2 acres. The herdsmen appear to have squatted in stretches of ditch in which they lit fires and discarded rubbish, bones—mainly animal, but including a few human ones, perhaps indicative of cannibalism—broken pots, chipped flints, and a few fragments of rubbing stones. Other camps of this kind

which have been excavated include one destroyed by gravel diggings at Abingdon, Berks., and others on the sites later occupied by the Iron Age hill-forts of the Trundle, Goodwood (22), Maiden Castle, Dorset, and Hembury, Devon. Constructed by Western Neolithic folk, some of them remained in use until the spread of Beaker pottery.

Settled farming based mainly on husbandry came in with the plough. Already from the Late Bronze Age one can recognise in certain limited parts of southern England a number of farmsteads, in some instances integral with systems of Celtic fields. The farms consist of embanked compounds enclosing timber huts, of which post-holes are today the sole remaining trace. Most of those so far explored are in Sussex, including those on Park Brow and New Barn Down, near Worthing, and two on Plumpton Plain, Brighton. From Wiltshire one may cite another recently excavated on Thorny Down, Winterslow. During the Early Iron Age people seem to have lived either in single farms or in small hamlets. Of the latter, in most respects merely aggregations of individual farms, but with rather more scope for specialised activities such as smithing and potting, very little is known. Their exploration constitutes, indeed, one of the major desiderata of British archaeology. Thanks in the main to the highly intelligent excavation of a site known as Little Woodbury in the parish of Britford, Salisbury, we are much better placed for the single farms. The mental picture we are enabled to form about them as the result of digging is all the more remarkable that as a rule there are no surface traces other than crop-marks, and that nothing other than post-holes remains of their timber structures. Both Little Woodbury and the analogous site on Meon Hill, near Stockbridge, Hants., were discovered from the air (24).

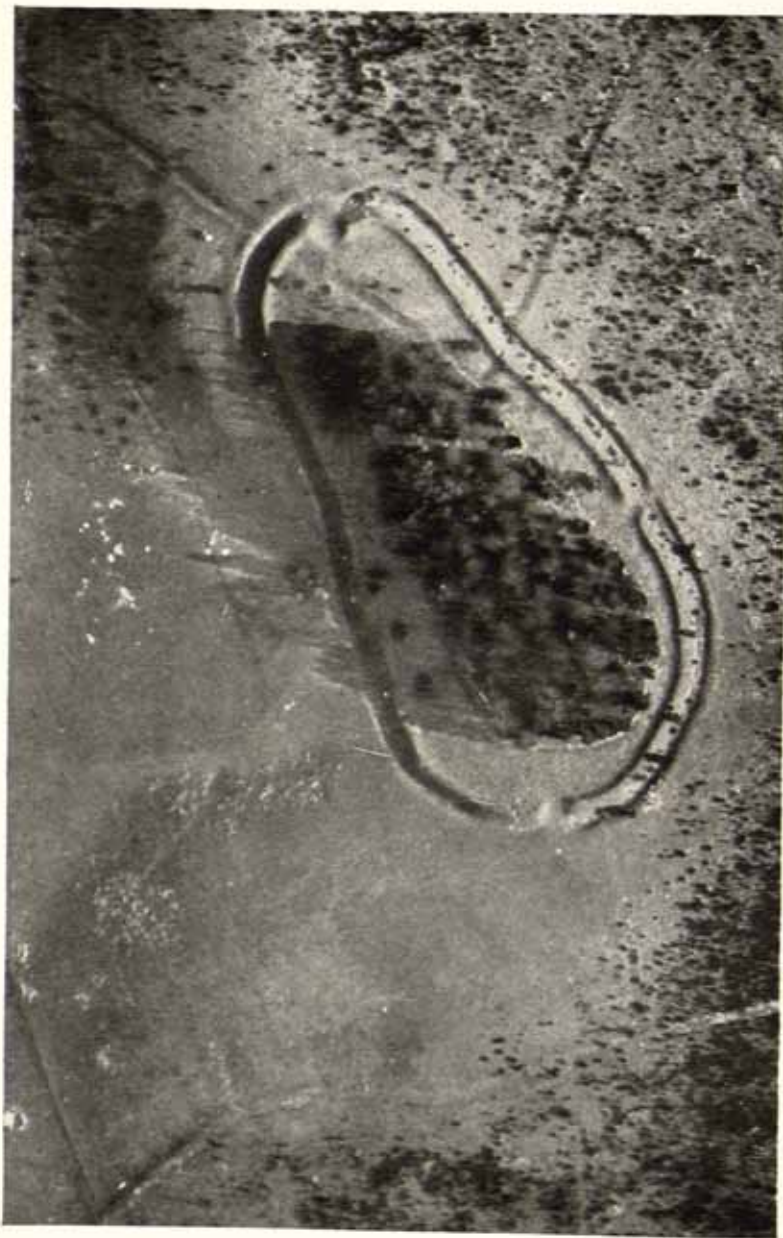
The main activity of the Little Woodbury people was the cultivation of their land by the light two-ox plough. The farm was probably about 20 acres in extent, although probably a half of this would be fallow land. At harvest the corn would be reaped, brought into the farm enclosure, and dried on frames, pairs of stout posts set 6 to 8 feet apart with numerous cross pieces, similar to those used in damp climates in some parts of Europe today. The grain was then husked in an oblong hollow, scooped out of the ground and probably provided with a rough shelter to keep off sun and rain. Some would be set aside for seed and stored in a small rectangular granary raised from ground level on wooden piles. The bulk, however, would be roasted in preparation for storage in



23 MAIDEN CASTLE: storage pits



24 LITTLE WOODBURY: Iron Age farmstead
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25 QUARLEY HILL: Hill-fort and ranch boundaries

subterranean silos, circular pits, perhaps from 3 to 5 feet in diameter (23), and sunk anything up to 8 or 9 feet in the chalk, lined with some kind of large receptacle, probably of plaited straw. The silos must have been entered by ladders, either runged ones like that recovered from the Glastonbury lake-village, or notched timbers resembling those found in old iron-mines in the Forest of Dean. Since the silos were rendered stale by bacteriological action in a matter of five years or so, they had to be discarded and new ones cut at frequent intervals. Disused storage-pits would be filled with spoil from newly excavated ones, mixed with rubbish of all kinds, old meat bones, potsherds, and debris from the grain-roasting, crackled flints, fragments of clay ovens, charcoal, and ashes. Sometimes, even, they would be used for a burial. Their interpretation as "pit-dwellings" is surely one of the strangest aberrations of archaeology! While not actually engaged in cultivating the ground or dealing with the crops, activities must have centred on repairing and making implements, weaving and plaiting, wood-turning, and the maintenance of buildings, drying-frames, palisades, and the like. The conservatism displayed in the maintenance of the farm, the same drying-frame being rebuilt up to ten times on the same spot, for example, implies a long era of peace, although there is evidence of a short spasm of anxiety when the site was hastily and incompletely defended. Further work alone can prove definitely whether this phase of defensive preparation coincides with those troublous times in the 3rd century B.C. when bands of Middle La Tène warriors crossed the Channel.

Tangible traces of pastoral activities are afforded by the linear banks and ditches and the associated quadrilateral enclosures found (51) on the downlands of southern England. The best known of the enclosures, which are generally interpreted as cattle kraals, is South Lodge Camp on Cranborne Chase, Dorset. Others have been excavated in Somerset, Wiltshire, and Sussex. The travelling earthworks probably served both to define tracts of grazing ground and as drove-ways for herding cattle and sheep. In origin the system appears to date from the Late Bronze Age, although it persisted, except where encroached upon by cultivation, into the Early Iron Age. The junction of a number of such ranch boundaries can clearly be seen on the air-photograph of Quarley Hill, Hants., within the oval hill-fort (25). The system of parallel banks, up to 17 in number, at Scamridge, Yorks., probably relates in some way to

early pastoral activities—possibly as barriers to cattle raiders.

It is likely that during the Early Iron Age in southern England herds were mainly in the hands of folk, who dwelt in villages close to water and rich pastures, rather than in those of the dwellers in isolated upland farms. Examination of discarded meat-bones on early sites confirms what might on general grounds be expected, that in default of adequate fodder the bulk of the livestock was habitually killed off before the onset of winter.

There is a close relation between the abundance, and above all the certainty, of food supply and the density and grouping of population, vital aspects of ancient society about which we know disappointingly little. Thus a food-gathering economy implies a low density of population and an organisation in small scattered groups. Conditions in Upper Palaeolithic Britain must have resembled those recently obtaining in the waste lands of northern Canada. The population is unlikely to have been greater than two or three hundred. Under the more genial conditions of Mesolithic times, when the withdrawal of ice-sheets had increased the area open to settlement and strand-looping offered an additional source of nourishment, it is possible that the population density approximated to that of Alaska, giving a total of perhaps from three to four thousand for England and Wales. It can rarely have happened that more than 15 persons met together, save at times of tribal gatherings, when for a few days, coinciding in all likelihood with the ripening of certain wild fruits, scattered bands of food-gatherers congregated to express their solidarity in dancing and feasting. On such occasions we can imagine that hunters and fishers of outstanding ability, natural leaders of their bands, extolled their prowess in boasting song and that all rejoiced in momentary freedom from the quest for food.

The stage of semi-nomadic pastoralism and garden plots must have allowed a considerable increase in population—perhaps as much as tenfold by the Middle Bronze Age. In daily life social groups would still have been small, though here again we must allow for seasonal gatherings, of which sacred sites like Avebury, Stonehenge, and Arbor Low would have been the natural centres. It is likely that society was organised on a strictly patriarchal basis, a clue to which is perhaps afforded by the burials in the earthen long barrows. The conclusion that certain members of society exercised functions of a priestly character seems irresistible in the

presence of the great sanctuaries. The adoption of settled agriculture not only brought a further increase of population, but by making settled life in larger communities practicable it made for economic progress in a variety of ways. Iron Age A society was pre-eminently one of peasant equals. This may explain the ease with which comparatively small bands of well-armed Iron Age B warriors established themselves in different parts of the country, reducing the native population to the status of hewers of wood and drawers of water. On the other hand there is evidence in the defensive earthworks thrown up against the invaders that external menace may have stimulated leadership and enhanced the cohesion of social groups, although one has the impression that these were still comparatively small at the time of the hill-forts. The predominant impression remains that of peasant communities easily dominated by alien aristocrats, among whom it is worth noting that women were able to attain the highest rank. It was the improvement in agricultural methods in Belgic Britain, typified above all by the introduction of the heavy plough, that provided the economic basis for political organisation on an altogether larger scale, and helped to intensify disparities in wealth among different sections of the population. When the Roman conquerors came they found princes wielding authority over extensive tracts of country, minting coins, and maintaining at their courts schools of craftsmanship, together with a large class of well-to-do people able to import quantities of goods from Gaul and even from Italy herself.

III

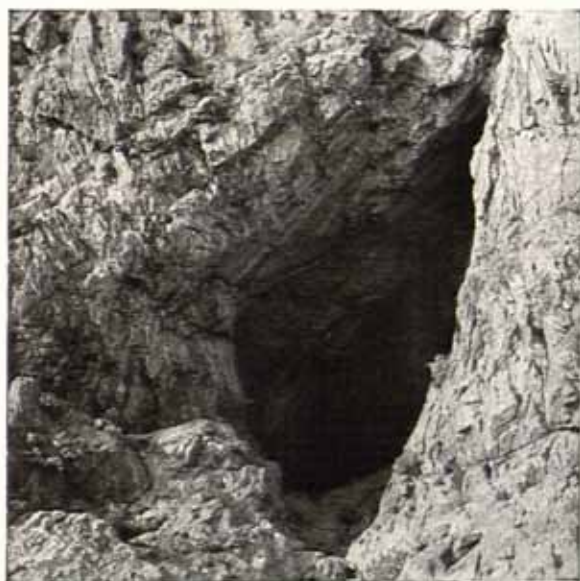
DWELLINGS

THE most ancient dwellings discovered in Britain are the natural rock-shelters and caves inhabited by Upper Palaeolithic man during the long winters of Late Glacial times. The most carefully explored are the caves which open on to Creswell Crags (26), a ravine in the limestone near Worksop, Derbyshire—notably Robin Hood's Cave, the Church Hole, Mother Grundy's Parlour, and the Pin Hole. Langwith is another cave in the neighbourhood which has yielded traces of Upper Palaeolithic man. Further north the Victoria Cave, Settle, has produced a few objects of reindeer antler which may be of similar age. Ffynnon Beuno and Cae Gwyn on the north side of the gorge opening into the Vale of Clwyd, near St. Asaph, have given definite evidence of the presence of Upper Palaeolithic hunters in North Wales. Richer traces are found in the south-west in the Carboniferous limestone of South Wales (Cat's Hole, Paviland (27), and Hoyle's Mouth), the Wye Valley (King Arthur's Cave), and Mendip (Aveline's Hole, Gough's Cave, Wookey Hole, and Uphill), and in the Devonian limestone of South Devon (Kent's Cavern and Bench Cavern). Leaving on one side La Cotte de St. Brelade, Jersey, which at the time of its occupation by Middle Palaeolithic man formed part of the French mainland, Kent's Cavern and the Pin Hole, both of which have yielded quantities of Mousterian implements, have the best claim to be the most ancient dwellings yet discovered in Britain.

The idea of sheltering in the mouths of natural caves or under the cover of overhanging rocks was not confined by any means to Upper Palaeolithic man. Mesolithic people sheltered in the Victoria Cave and at Creswell. Many Derbyshire caves have yielded sherds of Peterborough ware, proving occupation by late Neolithic man. The most famous associated group of metal objects of the British Bronze Age came from Heathery Burn Cave, Co. Durham, to which a well-to-do family had evidently retreated, perhaps in the troubled times which heralded and accompanied the arrival of iron-using peoples. The high-water mark of cave dwelling in Britain, judged by the actual number of troglodytes at any one time, came in the 2nd and 3rd centuries A.D. Down to the present day quite a number of caves, walled across the entrance, are inhabited in the limestone regions of France.



26 CRESWELL CRAGS



27 PAVILAND CAVE



28 BURRY HOLMS: Mesolithic site



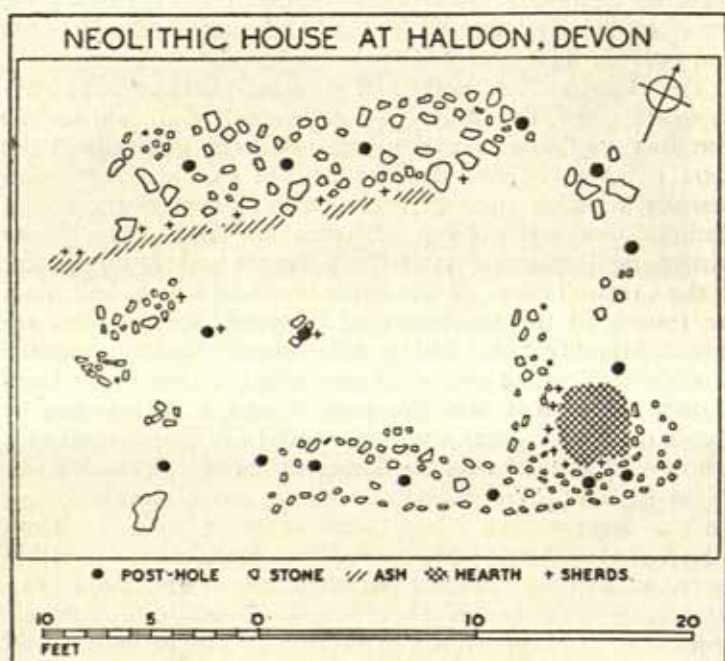
29 FARNHAM (SURREY): Mesolithic pit-dwelling

The term "Cave Dweller," applied to Upper Palaeolithic man, is not very apt, because men have tended at all times to avail themselves of natural rock shelters, and Upper Palaeolithic man himself only lived in caves during the winter months, spending the summer in light artificial dwellings of the type illustrated in the French cave art. Further, in regions like the loess belt of South Russia, where caves are absent, he built himself winter houses, sinking the floor below the surface of the ground to eliminate draughts and provide material for a low wall.

The oldest artificial dwellings yet discovered in Britain are those of the Mesolithic food-gatherers. High up on the Pennines we find traces of summer shelters, generally in the form of more or less circular patches of flint chips with perhaps a hearth close by, but occasionally with the added testimony of burnt birch branches and ling. During the winter the Tardenoisians of the Pennines sought the shelter of the Creswell caves, in the upper levels of which their flints are found. In the south-east of England, where caves are absent, Mesolithic man had to make himself dwellings capable of withstanding the cold of Boreal winters. One of his best-known settlements was grouped around a spring-head at Farnham, Surrey. Here were uncovered the foundations of a group of huts in the form of irregular hollows scooped out of the gravel (29). Although they may seem inhospitable as we see them to-day, when banked around with soil from the original excavation and roofed with branches and possibly turves, these semi-subterranean earth-houses must have been quite snug in their time. There is no evidence in the form of post-holes to suggest that our Mesolithic people understood the principle of frame construction; the nearest approach was the placing of a post at the entrance of one of the Farnham dwellings, presumably to give head clearance.

From the stage of pastoral nomadism and hoe agriculture (Neolithic-Middle Bronze Age) evidence relating to houses is hard to come by, and, in all cases, save where stone has entered largely into the construction, is liable to be exiguous. Timber, of course, would decay rapidly, save when water-logged, leaving only post-holes, wall-slots, or, at best, carbonised stumps. Yet, from excavations carried out on Haldon Hill, a prominent and commanding site a few miles south-west of Exeter, we are able to infer that the Western Neolithic folk were acquainted with timber frame construction. The arrangement of the post-holes indicates a dwelling of quadrilateral form, some 20 feet in length. The entrance was at

the north-east corner. In the south-east, marked off by loose stones, was a cooking-place of baked clay around which were clustered numerous sherds of broken pottery. Post-holes down the middle of the house, one of them with stone-packing, suggest that the roof was gabled. A similar gabled house, also of Neolithic age, was recently found at Ronalds-way in the Isle of Man, although in this case the floor was



sunk from $1\frac{1}{2}$ to $2\frac{1}{2}$ feet into the ground and the hearth was placed at the centre. At both only the stone footings of the walls remained. Probably the walls themselves were made of earth or turf, reinforced by the timber posts, of which socket-holes were noted in the sub-soil.

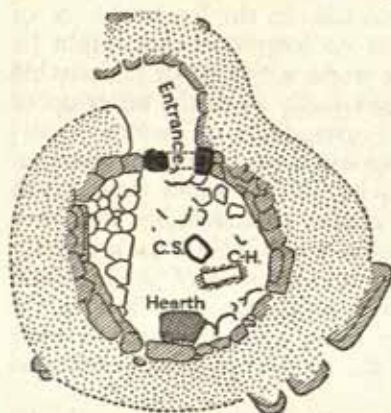
The huts of the Beaker flint-miners on Easton Down, Salisbury, were irregularly oval in shape, the floors being quarried out of the chalk to a depth of between 6 and 18 inches. The walls were of wattle or some other light material attached to slender posts set at intervals of a foot or so from the edge of the hollow. They were, thus, in a sense transitional between the simple pit-dwelling and the true frame house. It is possible that these rather lowly dwellings were merely temporary shelters for bands visiting the flint-

mines, yet among them were found traces of an earlier rectangular frame building associated with sherds of Western Neolithic pottery. The conclusion that the Westerners, although the first to reach southern Britain, nevertheless built houses of a more advanced type than their Peterborough and Beaker successors, accords entirely with what we have learnt of their origins. Plans of Middle Bronze Age huts have yet to be recovered.

In general the evidence for ancient houses tends to be more abundant in the highland than in the lowland zone of Britain, though even here it is no longer all that might be desired. The properties of the stone which made it desirable to the ancient builders made it equally so to the setter-up of stone hedges, for whom the aggregations of material incorporated in ancient structures appeared as convenient quarries. In contemplating the hut-circles of Dartmoor and North Wales, therefore, one ought always to remember that they represent only a fraction of what was visible even a century or two ago. Again, these stone monuments of the highland zone should remind us of how much we have lost in the richer lowlands, where there must once have stood busy farms and hamlets in place of the meagre post-holes revealed by the excavator today.

The simplest form of dry stone dwelling is the single-roomed hut, traceable far back into the Bronze Age, and even locally into Neolithic times, and associated with the small irregular corn-plots mentioned earlier. The best explored of the more ancient ones are those on Dartmoor. Sometimes these stand, like those seventy or more on Standon Down above the Tavy, alone upon the open moor, but many of them in this part of the world are enclosed within low-walled "pounds," of which Grimspound near Moreton Hampstead is the best-known example (30). The Dartmoor huts are more or less circular in plan, ranging in diameter from 6 to 25 feet (31). The single entrance, formed of two stone uprights and a lintel, was narrow and low, rarely exceeding $2\frac{1}{2}$ by $3\frac{1}{2}$ feet, and sometimes the interior was further kept snug and warm by the addition of a shelter wall to screen the doorway from the prevailing west wind. The walls composed of turf or loose stones retained by facings of vertical slabs are generally between 4 and 6 feet thick, and seldom, if ever, more than 4 feet high. The roof, probably of branches covered with turf, was supported by the walls and the central post which rested either in a hole or on a stone slab. The floor was of beaten clay, sometimes with a stone paving. Drainage was

provided for by siting the huts on sloping ground. At the highest part of the interior, generally on the right of the entrance, there was often a low stone dais or bench, which, covered with fern or heather, served as a seat by day and a bed by night. On the edge of Dartmoor, where wood was more easily to be obtained, the benches were made of timber, only a few retaining stones remaining in position. As a rule each hut has a hearth sunk in the floor. Generally these are associated with heaps of fire-crackled pebbles,



A DARTMOOR HUT

showing that pebbles heated in the hearth played an important part in cooking and in boiling water. From one hearth in a hut at Hay Tor nearly two barrow-loads of charcoal were removed, the fuel including stunted oak, alder, and peat. At Legis Tor a round-based crock was actually found in position in one of the stone-lined cooking-holes, having inside it a fire-crackled flint.

Hut-circles of simple form lasted well into Romano-

British times. Examples in North Wales include those at Parc Dinmor, Anglesey, and more elaborate ones with annexes and central fireplaces at Ty Mawr, Holyhead Island, dating from the 2nd to the 4th centuries A.D. In Cumberland and Westmorland, into which pre-Roman iron-using people hardly penetrated, simple hut-circles have more than once been found in apparent association with barrow groups. The huts of the open villages which flourished in Northumberland under the *Pax Romana* were equally primitive in appearance. Very little attention has been paid to the hut-circles of the Cleveland hills, but some at least can be attributed to the Bronze Age urn people. They seem, however, to differ from those already described, appearing today as shallow depressions. Excavation has shown that the floor was lowered by quarrying of the rock, while the roof was supported by a central post.

A second class of dry masonry dwelling found in the highland zone is the courtyard house, in which more than one room opens on to a central unroofed courtyard. Possibly the best-known examples are those at Chysauster in western



30 GRIMSPOUND, MORETON HAMPSTEAD: general view



31 GRIMSPOUND, MORETON HAMPSTEAD: one of the huts

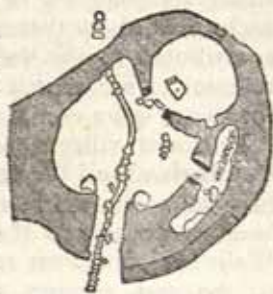


32 CHYSAUSTER: looking into a courtyard house

Cornwall (32), where we have eight arranged along a street, four aside, each with terraced garden plots attached. House 5, of which a plan is given, shows most of the characteristic features, namely an asymmetrical courtyard rather larger on the left as one enters, a circular room with a hollowed slab to carry the roof post straight ahead, and on the right a long narrow cell which may have sheltered cattle. The walls at Chysauster, which at one point still stand to a height of $5\frac{1}{2}$ feet, are built of dry masonry with facings of heavy blocks and a core of earth and rubble. The courtyard presumably was left open, but the compartments were roofed with timber and turf. A system of drains, consisting of shallow gullies covered by stone slabs, is a feature of the main room of many courtyard houses. As a rule they are designed to carry away water, but in at least one instance at Chysauster they acted rather as a conduit to bring it in.

There is some doubt as to when courtyard houses were first constructed. In North Wales, where they occur on both sides of the Menai Strait and down the coast of Merioneth, the only dated examples have been assigned to the mid-Roman period, and have generally been regarded as a product of the *Pax Romana*, locally enforced from Segontium. Recently excavated examples include two at Caerau, Clynnog, Carnarvonshire, which, though perhaps more evolved in form, nevertheless belong to the same general class as Chysauster. In western Cornwall itself the courtyard houses at Porthmeor, Zennor, have been shown to belong to the 2nd-4th centuries A.D. Yet the excavators of Chysauster were convinced of the pre-Roman age of that site. One can in any case be fairly sure that the type is a native one, and has not, as some have argued, been inspired by the many-roomed Roman villa. The same general idea in house design is common not only to Cornwall and North Wales, but also to the Hebrides, where it is embodied in the wheel-houses, and the Shetlands, where at Jarlishof it can be traced back to the Late Bronze Age. The prehistoric origin of the type can hardly be doubted: whether particular examples are of Roman or pre-Roman age can only be determined by excavation.

A third type of stone-built dwelling-place is the enclosed hut village of North Wales and the northern counties of



COURTYARD HOUSE AT
CHYSAUSTER

England. The enclosures themselves, which tend to be of basically rectangular form with rounded corners, consist of low walls with stone facings and rubble cores, designed to contain rather than to defend the community within. Near the middle there is usually one hut rather larger than the rest, presumably that of the chief man. Other huts are often placed near the entrance or even outside the enclosure. The enclosed area, which varies in extent from less than one-half to more than one and one-third acres, is subdivided by interior walls, probably to facilitate the penning of cattle or sheep. The "Celtic" fields, which are generally to be found either adhering to, or in the close neighbourhood of, the enclosures, show that agriculture as well as pastoral activities contributed to the well-being of the inhabitants. The huts themselves are mostly circular in plan, but sub-rectangular forms are quite common.

Enclosed villages of this kind are difficult to date. In Cumberland and Westmorland where such sites abound, over fifty being known from the latter county alone, a few have been attributed to the pre-Roman period. Urswick Stone Walls has somewhat rashly been relegated to the 1st, if not to the 2nd, century B.C., on the strength of a decorated bronze fragment, while the way in which the Roman road swerves to avoid the Ewe Close village shows that this may at least mark the site of a pre-Roman settlement. However, it must be admitted that most of the sites competently investigated in the northern counties have been proved to be Roman and specifically of 2nd century date. To this time must be assigned the recently excavated example at Milking Gap, Highshield, Northumberland, which together with others in the region flourished under the protection of Hadrian's Wall. Further south the characteristic enclosed village site at Grassington in the West Riding of Yorkshire has been shown to belong to the same period. In North Wales villages and hut-groups of similar type have been proved to date from even later times. Din Lligwy, Anglesey, a polygonal enclosure with two circular and several rectangular structures within, has been dated to the 4th century, while Pant-y-Saer in the same island is not earlier than the 6th century. Yet, late as many of the enclosed hut-groups and villages undoubtedly are, they, like the courtyard house, have their roots in a prehistoric past.

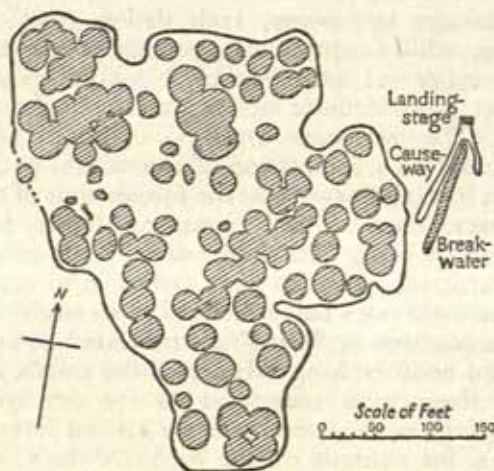
Our knowledge of the dwellings of the peoples engaged upon plough-agriculture and settled farming is less exiguous than for the preceding era in lowland England, although we

have to rue the fact that the regions mainly affected by the more advanced economy are precisely those where timber buildings were the rule. It is all the more unfortunate that we have little to compare with the crannogs of Ireland and Scotland, or the lake-villages of Switzerland and south Germany. Moreover, the English material is not only scarce, but also disappointing in that only the foundation platforms have been recovered. The most ancient marsh structures yet discovered in England are those near the village of Ulrome in Holderness, a region which in early times was covered by a net-work of lakes. Here at two sites, West Furze and Round Hill, timber and brushwood platforms were found during modern drainage operations, each dating from the Late Bronze Age, with suggestions, especially strong at Round Hill, of an earlier and quite possibly Neolithic stage. Unfortunately there is no definite information about the dwellings themselves. The platforms consisted of about $1\frac{1}{2}$ feet of brushwood laid on a foundation of tree-trunks packed with loose twigs. It was observed that the foundations of the upper platforms were more skilfully constructed than the lower ones; instead of being laid promiscuously the trunks were sometimes crossed, and piles were driven in to ensure their stability, the outer ones being inclined at an angle. The Late Bronze Age platform at West Furze measured 50 by 72 feet. It was placed with the long side across the marsh, and from either end there were causeways to the dry land. Sites apparently of the same general type are known from the Vale of Pickering, for example on the banks of the Costa Beck. The few finds suggest that the sites were occupied from some time in the Early Iron Age until about A.D. 70.

The Cambridgeshire and Lincolnshire fens, which might be expected to have produced useful evidence, have in fact proved curiously barren. The meres of East Anglia have been slightly more fruitful. Traces of piles and timber were found in the beds of West and Mickle Meres, Wretham, while the stone and piles which came to light during drainage works at Barton Mere, near Bury St. Edmunds, seem to indicate an artificial island or crannog. Several bronze spear-heads and rings show that it was occupied during the Late Bronze Age. A comparable but undated structure was found in Llangorse Lake, near Brecon.

Far and away the best explored are the marsh villages of Glastonbury and Meare in Somerset, which between them throw a flood of light upon life in the Early Iron Age. At the present day the Glastonbury village consists of a group

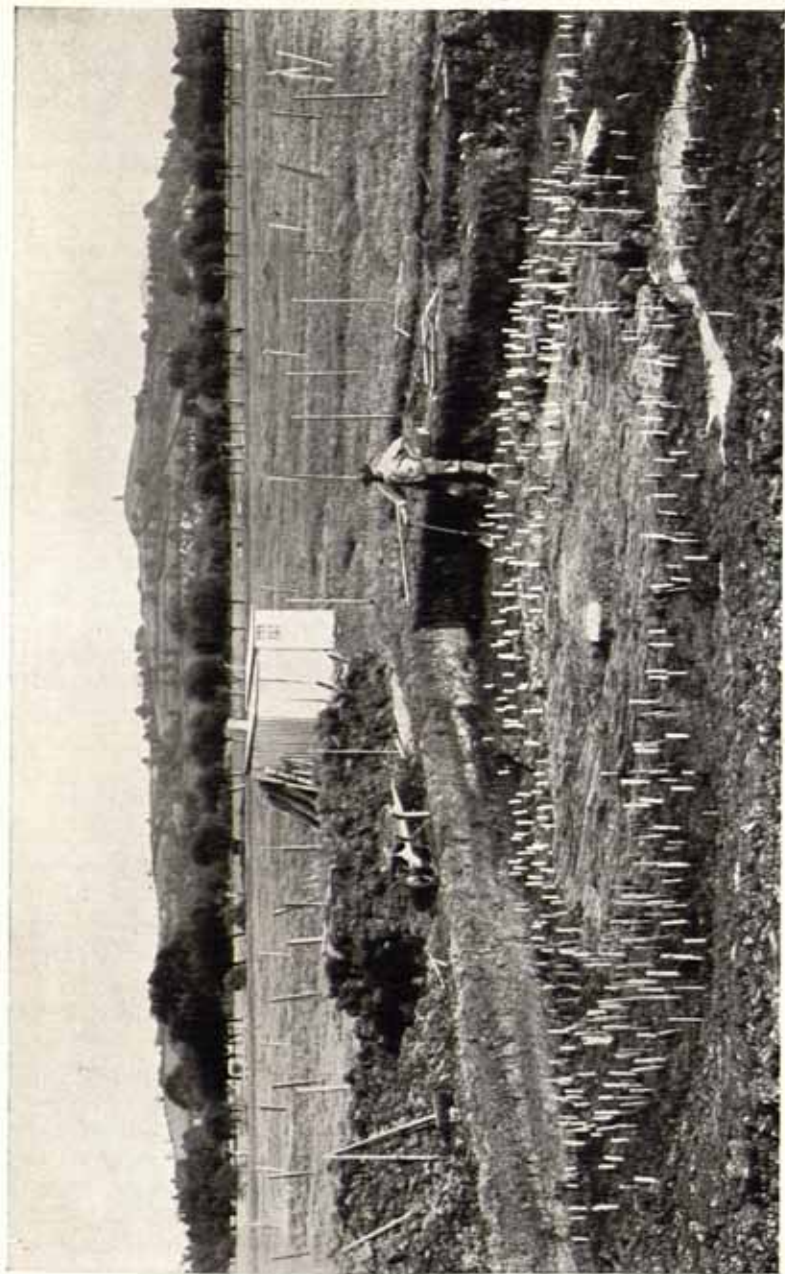
of low mounds barely visible above the general level of the marsh, bounded to the east by a natural watercourse known as the "Old Rhyne," which in early times was a broad sheet of water affording added protection as well as access to the site. The village, which occupied a triangular area some 3 to 4 acres in extent, was enclosed by a palisade formed of piles up to 12 feet long, bound together by intertwined timber, brushwood, and hurdle work. Within was a massive substructure varying in character in different parts of the site: its margins were formed of heavy logs laid parallel to the palisade with offsets at right-angles, the interstices being filled



GLASTONBURY LAKE-VILLAGE: GENERAL PLAN

with brushwood, peat, and clay; in the interior it was most strongly developed under the actual sites of huts, where it was sometimes three beams thick, each layer being laid at right angles to the last. The foundation of the village was held together partly by the border palisade, into which new rows of piles had frequently to be driven to replace those pushed outwards by pressure of the huts within (16), and partly by the mortising of horizontal beams to uprights driven into the underlying peat.

The hut-floors, of which there were at least 61 and possibly 15 more, were circular in plan, ranging from 18 to 28 feet in diameter, with small vestibules projecting from the entrance. An oak door $3\frac{1}{2}$ feet by $1\frac{1}{2}$ feet found in the peat outside the settlement had pivots cut from the solid and two holes about half-way down near the opposite edge, presumably for a



33 GLASTONBURY LAKE-VILLAGE: foundations of a hut



34 MEARE LAKE-VILLAGE: clay ovens

handle or a fastening device. It probably formed half of a double swing door. In some parts of the village individual huts were linked by means of pathways of sandstone rubble. Floors were made of clay paved with split wood flooring-boards from 6 to 8 inches wide, arranged either concentrically or across the hut from side to side. The weight of the huts compressing the underlying marsh frequently made it necessary to throw down fresh layers of clay. Sometimes as many as ten floors accumulated in this way in one hut. To help counteract the tendency for the huts to sink and spread, piles were driven in at the edge in much the same way as they were around the whole settlement. The heaping on of new floors, which was nevertheless necessary, involved the driving of more piles, several concentric rows of which were found

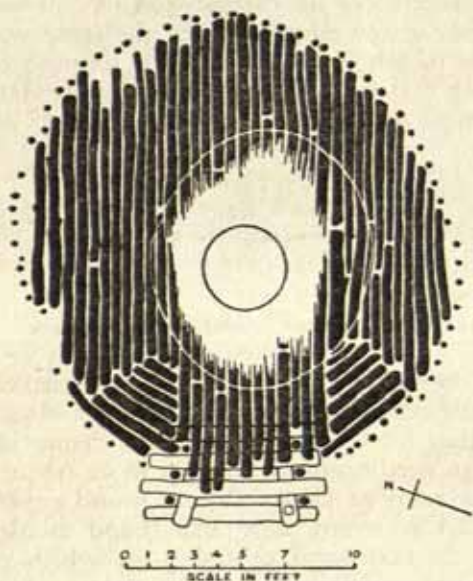


GLASTONBURY LAKE-VILLAGE: HUT FOUNDATION

under some mounds (33). Hearths were of baked clay or occasionally of lias slabs arranged to form a circular paved area. Since they were normally near the centre of the hut they tended to need replacement even more frequently than the floors, as many as thirteen being found superimposed. Dome-shaped clay ovens were also found at Meare (34). Apart from an occasional central post, which no doubt carried a conical reed-thatched roof, no trace of the superstructure of the huts was recovered. Thus, much as we have learnt of their foundations, we know little of the huts themselves, save that they were circular in plan, with vestibules and conical roofs. It is likely, in view of the necessity of raising their floors at frequent intervals, that the huts were of light construction, easily dismantled and re-erected.

For actual plans of the houses lived in by the plough-agriculturalists we have to rely upon the excavation of sites on chalk or gravel, at which little more than arrangements of post-holes can be expected to survive. From a study of these it has been established that the Late Bronze Age immigrants, who first introduced the plough to southern England, also brought with them a characteristic type of house, round with a central post. The walls were probably of timber attached to the main frame of stout timber uprights,

the conical roof being of reed or straw thatch. Houses such as these with an average diameter of about 20 feet have been investigated at Park Brow, Plumpton Plain, and New Barn Down on the Sussex Downs, the floor at the first-mentioned being cut into the slope of the chalk down to give a level surface. Another was recently brought to light by a road excavation on Gore Down, Chale, Isle of Wight. Frequent repairs to rotted posts have so complicated plans of the group of huts found within an embanked compound on Thorny

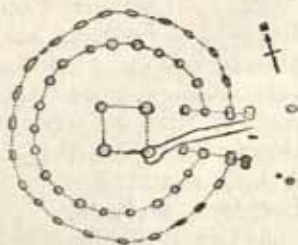


GLASTONBURY LAKE-VILLAGE: HUT FOUNDATION

Down, Winterbourne Gunner, as to render them difficult of interpretation. Where, however, distinct plans can be made out, they conform to the round pattern of other houses assignable to the Late Bronze Age immigrants. It may be noted that, while lacking central posts, they are provided with projecting vestibules or porches.

There is up to the present no satisfactory evidence about houses lived in by the Iron Age A people during the first century or two of their settlement in southern England. The earlier of the two houses recently excavated at Little Woodbury, however, gives us some inkling of what the isolated farmhouses of Wessex were like during the 3rd century B.C. The house was round in plan, having two concentric settings of stout posts, the outer having a maximum diameter of nearly

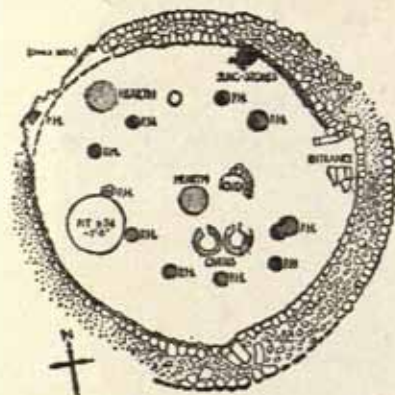
50 feet, the inner enclosing a central setting of four posts approached by an entrance-hall or vestibule. It is possible to reconstruct the missing parts of the house—the walling and roofing—in a variety of ways, none of which is absolutely conclusive. The probability is strong, however, that the outer wall was solid, possibly constructed of split timbers, and the roof thatched. The size of the house is impressive and raises tantalising questions relating to social organisation. It seems unlikely that the farm could have been run by one family alone, or that so large a dwelling would be



IRON AGE FARMHOUSE AT LITTLE WOODBURY, NEAR SALISBURY (MAX. DIAM. c. 50 FEET)

required, unless servants or possibly another family shared the accommodation, though some space would of course have been required for domestic animals. No sign of a hearth survived, but this would probably have been within the area defined by the four central posts. The part between the two rings may well have been subdivided radially to provide stalls and sleeping accommodation. Such a house plan has been interpreted as, in origin, a dwelling house and out-

buildings brought together under one roof. Traces of houses from the same period have come to light from Frilford, Berks.; the excavations were too limited to reveal their full plans, but it is possible to see that they were round. Important house remains were revealed during the recent excavations at Maiden Castle, Dorset. One hut in particular is worthy of note. Circular in plan (diameter 22 feet), it had a chalk wall, still standing to a height of $2\frac{1}{2}$ feet, with a circular setting of timber posts about



IRON AGE HUT AT MAIDEN CASTLE

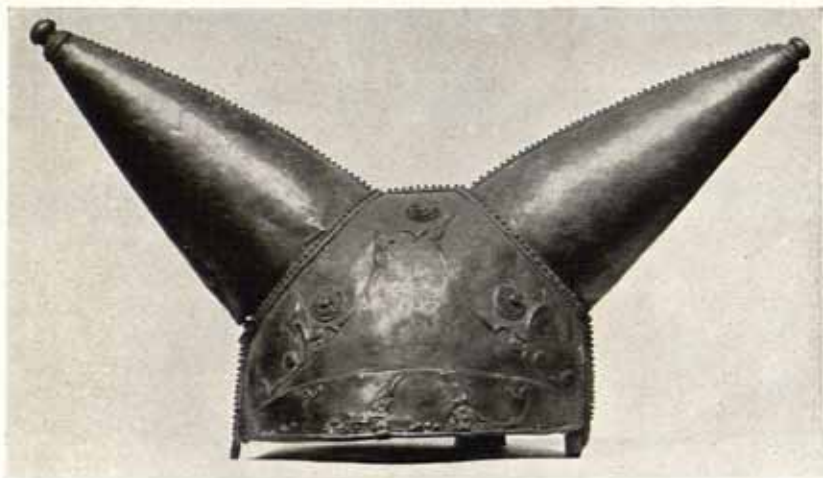
4 feet within, presumably to support the roof. In the inner part of the hut there were three clay ovens, originally dome-shaped, like those at Meare. The central hearth belongs to a later stage when a new floor was laid over the ovens and new posts were set in stone-lined post-holes. A hut some-

what similar in plan has just been found at Castle Dore, Cornwall, having a ruined stone wall and an inner ring of post-holes.

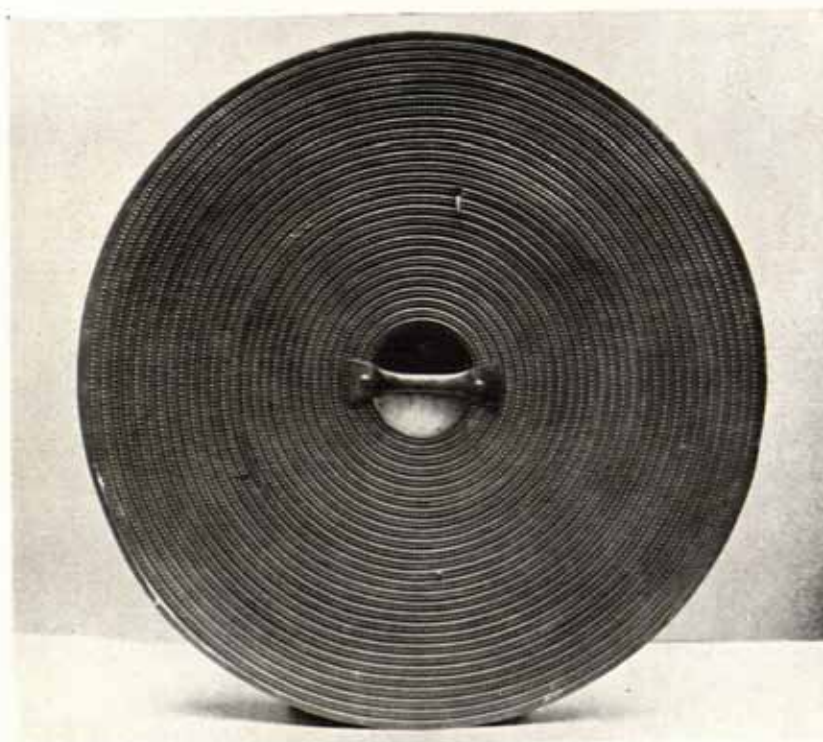
The full measure of our ignorance of prehistoric houses in England is brought home by the reflection that we know practically nothing of those of Belgic times, the most prosperous in our prehistory. The small circular hut with central post at Salmonsbury, Bourton-on-the-Water, recalls most closely those described for the Late Bronze Age in Sussex. A little round shack was found under the Roman villa at Lockley's, Welwyn.

At Camulodunum (Colchester) and Præ Wood, Verulamium (St. Albans), we have dykes and loose finds—at the former even dirty patches which may have marked the sites of dwellings—but of the nature and range of the houses at these capital centres we know nothing. Yet, how much would we learn, could we but measure the floors of Cunobelin's palace against those of his headmen and his humbler subjects!





35 IRON AGE HELMET from the Thames



36 BRONZE BUCKLER from Moel Siabod



37 AMBER CUP from Hove



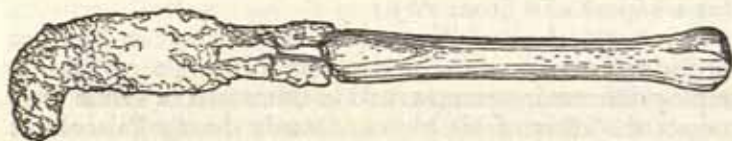
38 GOLD BEAKER from Rillaton

IV

HANDICRAFTS

PREHISTORIC man was a craftsman who by the work of his hands fashioned his tools and his weapons, his means of transport, his dwellings and his tombs, and all those externals by the study of which archaeologists attempt to reconstruct the social life of the past. In other chapters the products of his hands are considered functionally as they illuminate certain broad aspects of his existence: here an attempt will be made to appraise them as indications of his capabilities as a craftsman.

Many of the handicrafts practised in prehistoric times have survived unchanged or with slight modification down to recent times, a few even to the present day. When one remembers how close is the link between the craftsman and his material, the survival of methods of construction or of manufacture for centuries, and sometimes millennia, is to be



BILL-HOOK FROM GLASTONBURY LAKE-VILLAGE

expected: only some drastic break in cultural tradition, like the Industrial Revolution, would be sufficient to disturb relations harmoniously established between men and material through the ages. It is more difficult to appreciate this continuity in England than in most countries because economic change has here been all-pervading; yet a visit to the Bygones Gallery in the National Museum of Wales or to one of our all too rare folk-museums, like those at York and Cambridge, will often help. Many of the exhibits dating from the days before machine-made objects had displaced the products of village craftsmen to anything like the present extent, might have come from a prehistoric settlement where conditions of preservation had been exceptionally favourable: conversely much of the wood and iron work and baskets from the Glastonbury lake-village could easily have been made a century ago, or even in some cases at the present day. In the more outlying parts of Britain the picture is naturally clearer: indeed, up to a few years ago a traveller in the Hebrides or

some of the remoter parts of Ireland could experience conditions approximating broadly to those of the Early Iron Age. He could study at first hand primitive dwellings and a whole series of handicrafts from spinning and weaving to potting and quern-making which archaeologists have laboriously to reconstruct from such evidence as remains.

In any review of prehistoric craftsmanship it is inevitable that attention should first be directed to flint which has played a more vital role in the evolution of human culture than any other material available to the archaeologist. Although it is true that its enduring qualities have caused flint to survive where other materials have disappeared and so to bulk unduly large in our picture of early craftsmanship, this fact of itself makes it of unique importance for the deciphering of the earliest chapters of human history. Moreover, the degree to which flint and allied materials combine tractability with toughness made them peculiarly acceptable to early man, while the diversity of forms into which it can be worked and the variety of techniques employed provide at the same time the clues most useful to archaeology. It is not for nothing that we speak of a Stone Age.

The technical possibilities open to a worker in flint are surprisingly numerous. He can vary his angle of flaking, employ different instruments and in all manner of subtle ways control the effect of his blows. Already during Palaeolithic times the three chief methods of flaking had been brought into use: flakes with pronounced scars were struck by rounded hammerstones impacting on the flint at a single point; shallower ones resulted from the use of a wooden bar, such as would strike the flint along an arc; and an even smoother surface was obtained by pressure applied by bone or antler flakers like those used by the modern Eskimo. Yet a certain roughness of surface is bound to result from even the most skilful flaking, since the intersection of flake-scars is of the essence of the technique. To obtain an absolutely smooth surface it was necessary to grind away the traces of flaking on a stone rubber, a technique which, originally evolved in the working of bone, was first applied to stone by Mesolithic, and to flint by Neolithic, man.

No greater mistake could be made than to suppose that the working of flint was confined to the Stone Age: on the contrary, it reached its apogee during the earlier stages of the Bronze Age, when metal was still too rare to satisfy the demand for more advanced forms, and persisted even when new materials had become more generally available. Quite a

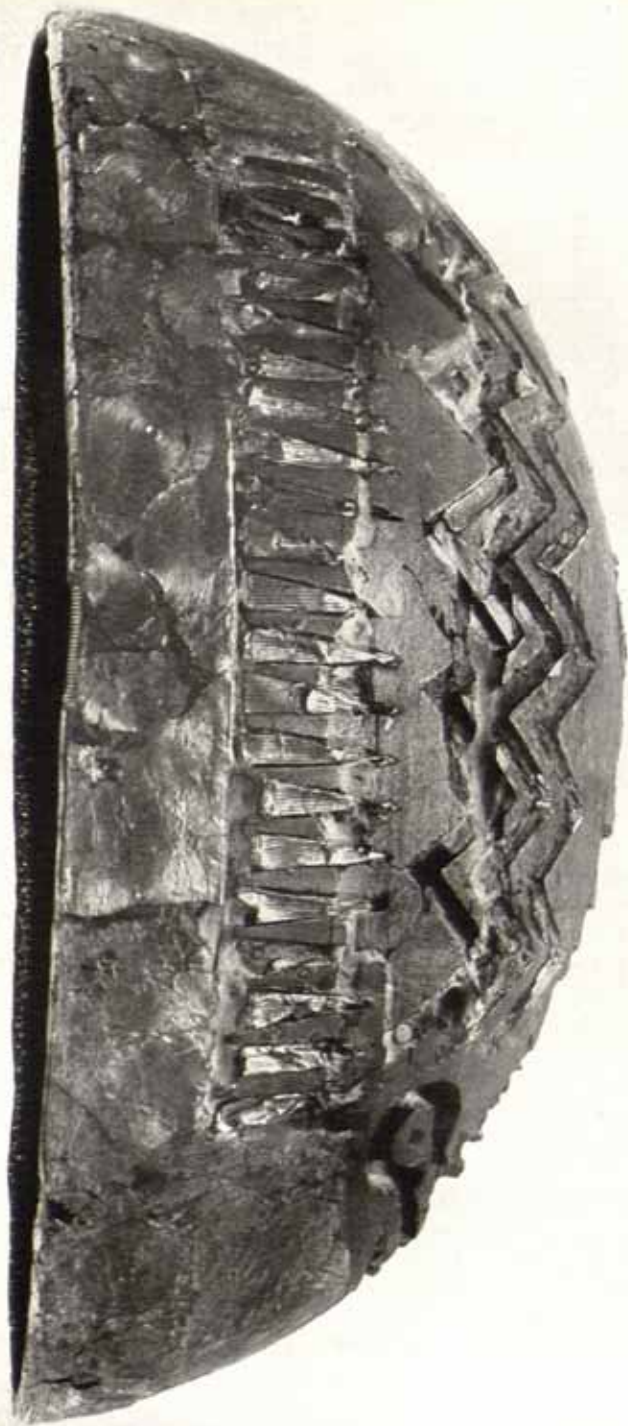
distinctive flint industry has been recognised in lowland Britain for the Late Bronze Age and flint-working was still carried on, albeit with greatly reduced standards, during the Early Iron Age. The subsequent survival of the craft was due to properties of flint which in prehistoric times were of secondary importance, namely its ability to produce sparks and its suitability as building material. The Romans certainly dressed flint for buildings, although little is known of its employment for other purposes during the occupation. From Saxon times onwards, however, its use as a component of the strike-a-light is well attested. With the adoption of fire-arms gun flint manufactories grew up in most of the cretaceous areas of England. The pedigree of the modern industry may not be as straightforward as some have argued, but in some sense the Brandon knappers must embody a tradition of craftsmanship almost as old as man. Watching them turn out gun-flints for West Africa, one cannot but be impressed by the speed at which they work—an average worker will produce from 5,000 to 7,000 flakes and up to 2,500 gun-flints a day—and by the high proportion of waste resulting from their activities. Both are points to be borne in mind when interpreting ancient working floors. Again, let those who marvel at the flaking on, say, the hand axes used by Lower Palaeolithic man, reflect that modern workers can turn them out in a few moments. Prehistoric man must have been every bit as expert.

What has been said about flint applies equally to certain other stones which share its essential properties, such as augite granophyre, sarsen and various kinds of chert. Rocks which could not be flaked had to be pecked into shape and smoothed by grinding. Unlike flint, however, they could be perforated for hafting without undue difficulty. Already in Mesolithic times we find quartzite pebbles perforated by the junction of hollows worked from opposite faces, resulting in holes of "hour-glass" section. Direct perforation of stone appears to have been introduced to England by Beaker people. During the Early Bronze Age some very shapely axe-hammers were made in southern England (20). It is quite possible to perforate hard stone by hand, using a solid wooden drill and abrasive sand, but much quicker to employ a tubular drill rotated by a bow. Probably both methods were employed in prehistoric Britain.

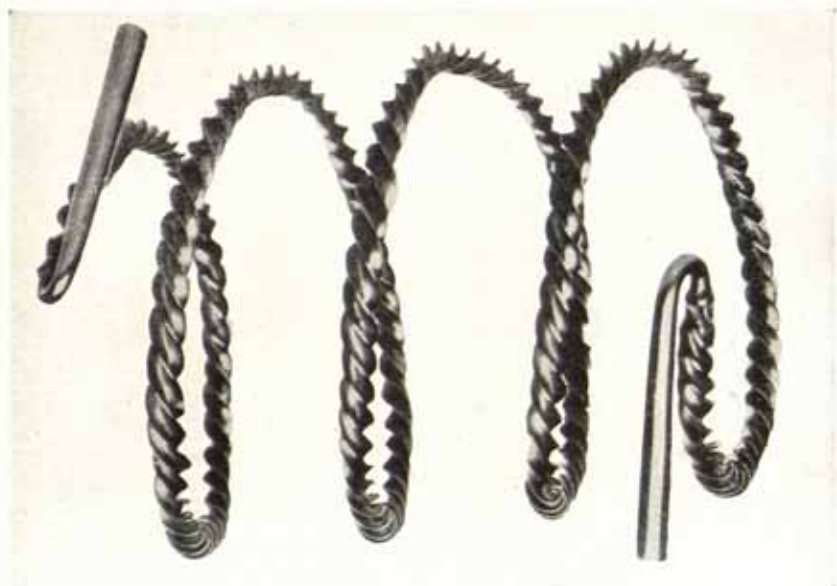
The introduction of copper and its alloy, bronze, opened up new vistas to the prehistoric craftsman. Two main ways of shaping his material were open to him; he could take advantage of its low melting-point by casting it in moulds,

or exploit its relative softness by cold hammering. The evolution of casting methods went hand in hand with improvements in form. Flat shapes could be cast in an open mould. More elaborate forms having surface relief required valve moulds composed of two or more parts. Finally, the adoption of the ingenious *cire perdue* process greatly widened the scope of the worker in bronze. The procedure was as follows. The craftsman would begin by making a wax model of the object he desired to make, sometimes by means of a mould. Then, first dipping it in a liquid solution, he would coat it with a stout envelope of plastic clay. Slowly baking this over a fire, he would simultaneously harden the clay and expel the wax, leaving room for the molten metal which could then be poured in and allowed to solidify before being broken out of its mould. By suspending a clay core it was a simple matter to cast sockets or even bronze vessels by this process. The hammering technique was used for beating up flanges on the sides of flat axes and sword hilts, for toughening cutting edges, spreading rivet-heads and flattening and shaping sheet metal, such as was needed for the shields and cauldrons of the Late Bronze Age. The hammer was also used in conjunction with the tracer or chisel-shaped punch to produce "incised" decoration on metal objects. Repoussé decoration on the other hand, such as can be seen on the Mold peytrell (63) or the shield from Moel Siabod (36), Carnarvonshire, could be wrought by hammering around pieces of hard wood, bone or metal held inside the sheet.

In working gold the smith took full advantage of the softness of his material. During the earlier part of the Bronze Age ornaments made of gold sheet hammered to the thinness of a visiting card were the vogue, prominent among them being the lunulae and twisted ribbon torcs of the highland zone and the famous gold beaker from Rillaton Manor (38). The metal was used even more sparingly at this time in Wessex, where it was applied in the form of plating to bone and bronze discs and shale cones and in the form of lozenge and rectangular shaped plaques attached to a backing, probably of wood or leather. The thin gold leaf applied to the wooden bowl from Caergwrle (39) illustrates in its concentric circle ornament the accuracy with which the old goldsmiths were able to use compasses on the soft metal. By the Middle Bronze Age the supply of available gold had increased sufficiently for them to strive for a richer three-dimensional effect by using the metal in bars. Sometimes, as in the plain penannular bracelets with simple or expanded terminals (41),



39 WOODEN BOWL WITH GOLD INLAY from Caergwle



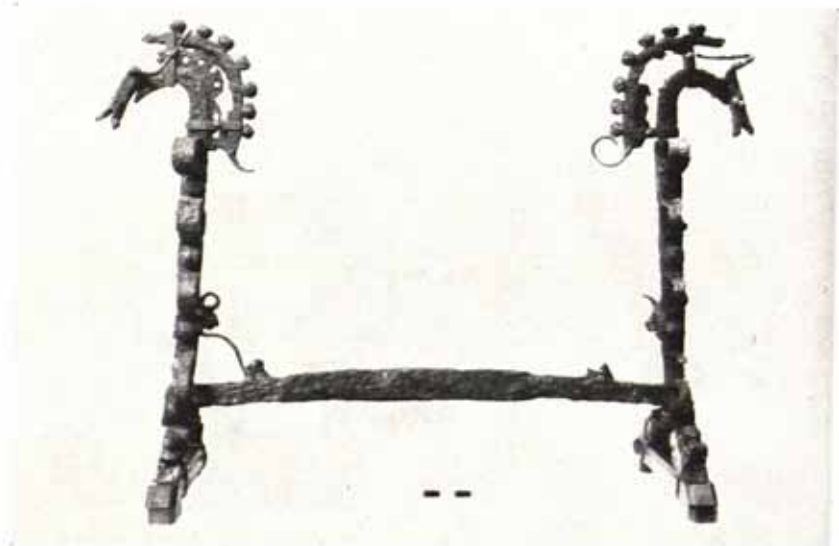
40 GOLD TORC OF TARA TYPE from Grunty Fen, nr. Ely



41 GOLD ARMLET WITH "RING-MONEY" from Grunty Fen, nr. Ely



42 HEAD OF IRON FIRE-DOG from Barton (Cambs.)



43 IRON FIRE-DOG from Capel Garmon



44 HANDED BEAKER from Bottisham, Note base at larger scale

the appeal of the ornament depended upon its smooth massive appearance. A richer effect was produced by the wreathed torcs of Tara type, the twisted flanges of which were designed to catch the light (40). It was at one time supposed that these were fabricated from two, three or four ribbons of gold twisted together and reunited at either end to form the characteristic tapered terminals, but in fact they were produced from a single bar. The smith began by cutting grooves along the whole length stopping short only as he approached the two ends; next he hammered or punched each of the members so defined into a flat flange; then he annealed the whole and twisted it into a screw pattern; finally, he shaped and bent the terminals. Sometimes, however, as in the torc from Yeovil, he cut right through the bar, reducing it to four strips united only by the unworked terminals; after they were flattened the individual flanges were reunited by a gold and copper alloy—the earliest known use of this process in Britain.

During the Early Iron Age and up till Tudor times, when the blast furnace was introduced, iron was produced exclusively by the primitive bloomery process. The ore, which had to be used in a rich form, was heated on a charcoal fire intensified by bellows. By hammering out the cinder impurities from the resultant mass only small quantities of wrought iron could be produced at a time, but it was ready for immediate hand forging. In working the iron the craftsman went through the two stages of "mooding" and "smithing," the former covering the moulding of the heated bar to approximately its desired shape, the latter the drawing and final finishing of the object. It is probable that the iron "currency-bars" found in the province of the Iron Age B people were primarily sword "moods," although this by no means precludes their use as currency. The most famous find of such objects was that made in Wayland's Smithy, a megalithic tomb on the Berkshire Downs. The legend, according to which "a traveller whose horse had cast a shoe on the adjacent Ridgeway had only to leave a groat on the capstone, and return to find his horse shod and the money no longer there," lends colour to the currency theory, though we cannot yet associate the invisible smith with the tomb earlier than the Compton Beauchamp charter of A.D. 955. In the final stage of his work the smith sometimes showed an astonishing mastery of his material. If we look, for instance, at the terminals of the Barton fire-dog, we cannot but marvel at the assurance and withal the economy with which the head was beaten into shape, the eyes and nostrils indicated by a

few deft blows (42). By comparison the Capel Garmon example (43) is commonplace, although not without interest for comparison with modern wrought-iron work.

Potting is another craft which, thanks to the persistence of fired clay, is well represented in the material available to archaeological enquiry. The wide range of possibilities open to the potter makes the choice of particular styles and methods of outstanding significance. It is important, also, to bear in mind that in prehistoric times pottery was essentially a domestic product, which, unlike metal, was rarely traded far afield. Of pottery it can truly be said that it bears the plastic imprint of culture, though its physical composition illustrates that we have also to take account of the influence of locality. Thus, we are justified in attributing to cultural differences the distinction which can everywhere be made between the homogeneous Western and the coarse-grained, badly mixed Peterborough ware of Neolithic times. On the other hand the minor differences, revealed by petrological examination, between sherds of the same ware from different parts of the country often reflect no more than varying geological endowments; indeed, when checked by examination of natural deposits, it may sometimes allow one to detect importation of raw material or possibly of finished pots.

It is probable that the simpler forms of Western pottery were modelled from a single lump, but some at least of the shouldered bowls were built up from two pieces. The more elaborate coil method by which the pot was built up from the base by the addition of successive rolls of clay, or spirally as in coiled basketry, was introduced by the Peterborough people and persisted throughout the Bronze Age in food vessels and native cinerary urns, serving to emphasise their community of tradition. Both the leading Neolithic wares were round-based, flat bases making their first appearance in Clacton ware and Beakers. The device of raising the base of the pot on a hollow foot or pedestal was introduced by La Tène immigrants from the Marne district during the 3rd century, though it did not become common until spread over the south-eastern counties by the Belgae. The possibilities of rim treatment are too numerous to follow out in detail, but without going into the matter more closely one may say that the prehistoric potter ranged from tapering to flattening, everting, inbending, thickening, rolling and variously moulding the rims of his pots. Spouts, on the other hand, have yet to be found on British prehistoric pottery. Handles are poorly represented. True handles are confined

to the rare class of handled Beaker, to a small series of more or less contemporary cups from Wessex, to biconical cinerary urns dating from various stages of the Cornish Bronze Age and to a few globular vessels of the Late Bronze Age in Sussex. Ledge handles are found on a few Late Bronze Age cinerary urns and on certain Iron Age bowls. The lug is the only common form of handle. In its plain and vertically perforated forms it occurs on Neolithic pots of the Western culture and on Late Bronze Age cinerary urns. Horizontally perforated, it is found on grooved food-vessels, on Cornish cinerary urns, on exotic pottery from Late Bronze Age settlement sites and on certain Early Iron Age vessels.

Among the methods of improving the appearance of his vessels the prehistoric potter resorted to surface slips, burnishing and various kinds of decoration. Apart from the haematite-coated pottery of the Iron Age A people and a single Hallstatt vessel from near Eastbourne, showing concentric black lozenges on a red haematite ground, there is no evidence for the painting of pottery in early Britain. The commonest types of decoration were incision, grooving and scoring with a blunt tool, pricking, surface roughening or rustication, moulding by pinching up, the application of plastic strips and pellets, and finally impression by diverse means, including twisted cord, bird-bones, finely toothed stamps and the human fingertip or nail. Certain incised or impressed decoration, it should be added, was made more prominent by the rubbing in of a white filling. There is little evidence that the colour of the finished pot was deliberately influenced by the final process of firing in the kiln.

The prehistoric potter was often guided by traditions emanating from non-ceramic sources. Thus the rounded bowls of the Western Neolithic culture are clearly based on leather bags, while the more ambitious carinated bowls look back to the same simple container stiffened by withy hoops inserted at shoulder and lip. Such a derivation is supported by the decoration found on vessels of the Abingdon variety (7), on which diagonal scoring on rim and shoulder recall the stitching by which the hoops were sewn to the leather and vertical scoring on the neck brings to mind the puckering which would naturally occur where the leather was constricted. The mode of manufacture of Peterborough ware, on the other hand, together with certain elements in its decoration, argue for its derivation from coiled basketry. Wooden vessels were another source of inspiration. The well-known handled Beaker from Bottisham, Cambs., for instance,

is not only "wooden" in form, but the decoration on its base suggests such growth rings as would be visible on a wooden mug cut from the solid (44). The shallow tub-like pots from the Caburn and from Glastonbury are likewise influenced by wooden prototypes, such as, indeed, were found on the latter site. During the Early Iron Age the potter was frequently inspired by metal vessels: thus, the angular shouldered pots decorated by finger printing, common during its earlier stages, recapitulate the riveted bronze buckets of Italian origin, which spread over western Europe with the Hallstatt culture; pedestaled La Tène and Belgic pots can be traced to bronze beaked flagons of Graeco-Italian origin, by way of such vessels as those from the Waldalgesheim grave; and bead-rim bowls of the type found at Maiden Castle are almost certainly modelled on bronze bowls like those from Glastonbury and Spettisbury. The appearance of metal was sometimes imitated by surface treatment of pottery; thus, the glow of copper might be rendered by the rich red of haematite paint.

So far we have dealt with materials which have survived in bulk, the flints and stones, metal work and pottery which form, as it were, the bony framework of archaeology. An even greater part was played in contemporary life, however, by substances of organic origin, which have seldom come down to us. Of these wood was perhaps the most important. The felling of medium-sized timber such as would be required for house frames or palisades was doubtless accomplished by axes, even polished flint ones having been proved effective by experiment. For the extra large trunks needed for the uprights of "henge" monuments, dug-out canoes or coffins the process was sometimes assisted by fire. Saws played no material part in prehistoric carpentry. For splitting timber wedges were much used, as indeed they were for hollowing out canoes (68, 69) or coffins: holes would be bored at intervals and the intervening wood splintered off by wedges until the walls were reduced to the right thickness, after which the ends would be dressed smooth by an adze. Before specialised types of metal tool were available the wood worker had to content himself with simple forms—shafts and handles for implements and weapons, bows, shields, paddles, bowls and tubs cut from the solid and the like. Although certain handled cups of amber and shale from graves in Sussex and Wessex have been held to show that the lathe was already available during the Early Bronze Age (37), it is more likely that these were cut by hand. The earliest certainly wheel-turned objects so far discovered in England are the wooden



45 OSIER BASKET-WORK from Glastonbury lake-village

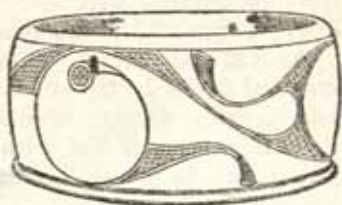


46 HAIR-MOSS BASKET-WORK from Newstead



47 HURDLE-WORK: Glastonbury lake-village

tubs and axle-hubs from Glastonbury and some bowls from Harpenden, bracelets of Kimmeridge shale from Dorset and some exquisitely turned vessels of the same material from the graves of well-to-do Belgae. The art of turning wooden vessels on a simple pole lathe survives in parts of Wales today. It is unlikely that the forms turned out by the modern craftsmen differ greatly from those of antiquity. There is evidence that the device of the tenon and mortise was known already by the Early Bronze Age. Metal gouges and chisels made it possible during the Late Bronze Age to cut grooves into which boards could be inserted with sufficient accuracy to fit canoes with separate stern boards and tubs with separate bases. It was not until the Early Iron Age, however, that it became practicable to build tubs out of staves held together by metal bands; added security was given by dowelling neighbouring staves by wooden pegs. At this time also we have evidence, in the form of oak and ash loom frames from Glastonbury, of the use of heated metal for burning holes in woodwork and tracing simple decorative patterns.



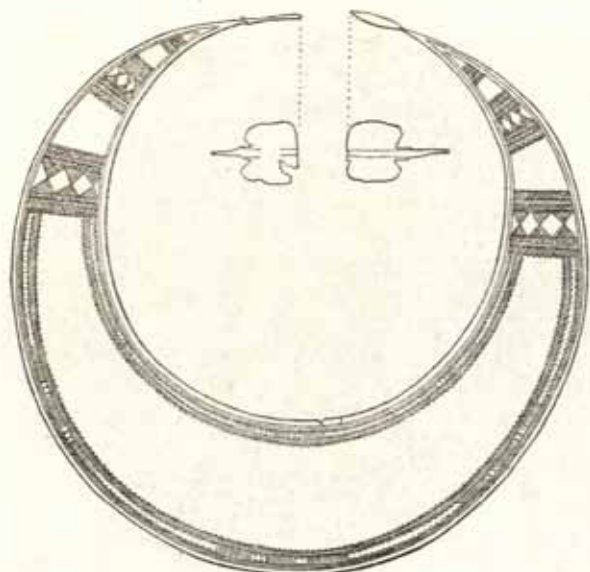
WOOD TUB FROM GLASTONBURY LAKE-VILLAGE

In classical times Britain was famous for her basketry—as witnessed by Juvenal and Martial—but little concrete evidence has survived. The material most commonly used was osier. Substantial portions of wicker baskets interlaced on ribs arranged alternately in pairs and triplets were recovered from the Glastonbury lake-village (45), in the neighbourhood of which osier baskets are still plaited. Wicker work must have been used for many purposes, including the sides of carts and wagons, the framework of coracles, fish traps, frames for leather shields and panniers for pack horses. A similar method of plaiting applied to split saplings was used for the hurdling required for the walling of pens and houses and the revetting of earthen banks (47). Fine baskets were made from hair-moss (*Polytrichum commune*). An unfinished specimen was recovered from the ditch of the older Roman fort at Newstead (c. A.D. 80), but was almost certainly native work (46). The collections at Kew include a basket from Northumberland, brooms from Sussex and Westmorland and a hassock from Yorkshire, as modern examples of similar work. Pieces of charred plaited material from an Iron Age store pit at Worlebury may come from a coiled basket. Vegetable fibres of different kinds, twisted into string, were used for lines,

nets, snares and for all manner of purposes. Although little in the way of actual string or cord has come down to us, we are constantly reminded of its importance to the men of the time by the frequency with which it was used for impressing decorative patterns on Bronze Age pottery. One of the few recorded finds was that made under Silbury Hill by Dean Merewether, who speaks of "fragments of a sort of string of two strands, each twisted, composed of (as it seemed) grass, and about the size of whipcord." Excavating a Bronze Age round barrow at Garton Hall in the East Riding, Mortimer found "fragments of string or fine rope, a little thicker than coarse worsted, made of two strands, each being of a fine fibre resembling flax, and well twisted" under a woman's skull—probably the remains of a hair-cord.

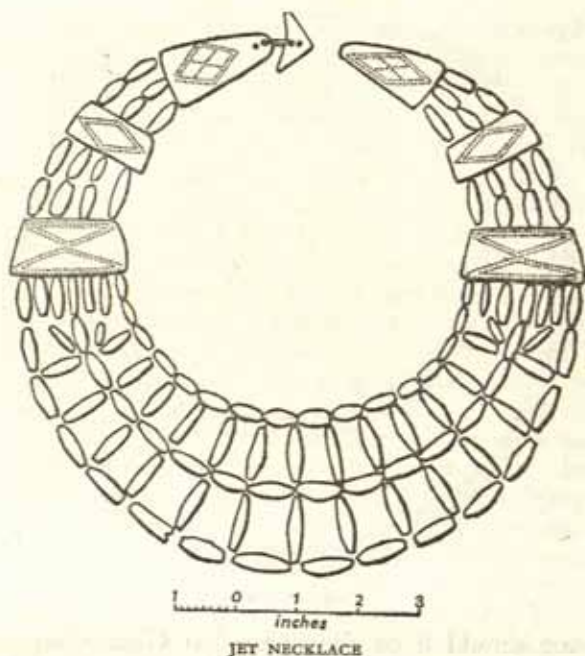
Animal products provided another rich source of raw material for the craftsman. Bone was worked into buttons and toggles, combs, needles, potters' tools and hilt-plates. Antlers, cut short and with all but the brow tine removed, served as quarrying implements, roots were mounted as hammer-heads, and tines blunted and perforated, made excellent cheek-pieces for bridles. Horn must have been used for many purposes; a ladle of this material, for instance, was found in a Beaker at Broomend, Aberdeenshire. The bark vessel from an Early Bronze Age oak coffin burial at Gristhorpe, Yorkshire, described as "curiously stitched with the sinews of animals," illustrates the use of a product which must also have been required for stringing bows. The importance of animal skin is emphasised by the ubiquity and abundance of the flint scraper, though the only direct evidence for its use comes from burials like that at Gristhorpe in which it was wrapped round the body. Leather objects found in neighbouring countries make it likely that the same material was employed here for scabbards and sheaths, shoes, shields, pouches, harness and all kinds of belts and straps. Hides, of course, were one of Britain's staple exports to the Roman world before the conquest.

Weaving must have been one of the leading handicrafts in prehistoric Britain, but it has left few traces. Indirect evidence in the form of spindle-whorls and loom-weights—the latter not easily distinguished from thatch-weights—is common for the Early Iron Age and at sites like Park Brow and Plumpton Plain, Sussex, can be associated with intrusive cultures of the Late Bronze Age. Weaving combs, which have by some been alternatively interpreted as implements for removing hairs from skins, are a common feature of the Early Iron



GOLD LUNULA

Age, nor should it be forgotten that Glastonbury yielded portions of wooden loom frames. Paradoxically, all actual traces of textiles belong to an earlier stage in our prehistory. Weaving cannot yet be proved for Neolithic Britain, but on *a priori* grounds it is likely that the Westerners were familiar with the art. For the Bronze Age we have numerous, though regrettably meagre, records from burial finds. Impressions of woven fabrics can be seen on a bronze dagger blade from one of the Lambourne barrows and on a flat axe from Normanton Bush Barrow. When Henry Cunnington was removing calcined human bones from the remains of a wooden plank in a barrow at Ogbourne St. Andrews he observed the structure of cloth preserved by accretions of carbonate of lime. The body in the Rylston oak coffin burial was wrapped in a woollen fabric, and a fragment of charred woollen material was found among the ashes in a cinerary urn in a barrow on Banniside Moor, Coniston. On the other hand, traces of linen fabrics were observed in barrows at Winterslow and Manton, Wilts., at Ringwold, Kent, and at Kelleythorpe and Garton Slack, Yorks. Beyond the knowledge that flax and wool were woven and that the fabrics vary in texture within wide limits, we are pathetically ignorant of our Bronze Age textiles. Discoveries in Denmark and Switzerland encourage the hope that in our own country



fortune will one day reward the excavator of some water-logged settlement or coffin burial with textiles sufficiently well preserved to give us a closer insight into the methods of the ancient weavers.

Prior to the spread of La Tène art the artistic impulses of British craftsmen expressed themselves mainly in skeuomorphic designs or in the repetition of traditional patterns of geometric type. Examples of skeuomorphism have already been quoted when discussing pots and their non-ceramic prototypes. Even more striking is the case of the gold lunulae, the decoration of which has clearly been inspired by the arrangement of plates and beads in the crescentic necklaces of jet and amber popular during the Early Bronze Age. Of geometrical patterns the herring-bone is perhaps the commonest, but hatched bands, band chevrons, and alternately hatched and reserved rectangles, lozenges and triangles are almost equally widespread. Concentric arcs on the other hand were favoured by the Peterborough people, saltires by the makers of Beakers and flat axes and reserved stars by the north-western group of Food-vessel folk. The application of such motives as these to objects of daily use was more in the nature of ritual than of studied art.



48 ENGRAVED BRONZE MIRROR from Birdlip



49 THE UFFINGTON WHITE HORSE: a turf-cut figure



50 AYLESFORD BUCKET: repoussé horses

La Tène art was introduced to Britain in the middle stage of its development. In its continental homeland it had arisen from the gradual modification by Celtic craftsmen of motives borrowed from classical sources. Although we are not called upon to concern ourselves with details of this development, the art having reached us fully formed, it is perhaps worth considering very briefly the treatment of the Greek palmette exhibited on such a famous continental piece as the gold torc from Waldalgesheim, near Coblenz. The upper portion of the design is evidently a rendering of the palmette with volutes and naturalistic sprays and rosettes, such as is portrayed inverted on a Greek pail from the same site: the palmette is represented by a single leaf at the apex, the volutes take the form of S-shaped scrolls and the sprays and rosettes are incorporated rather fancifully in the design, losing

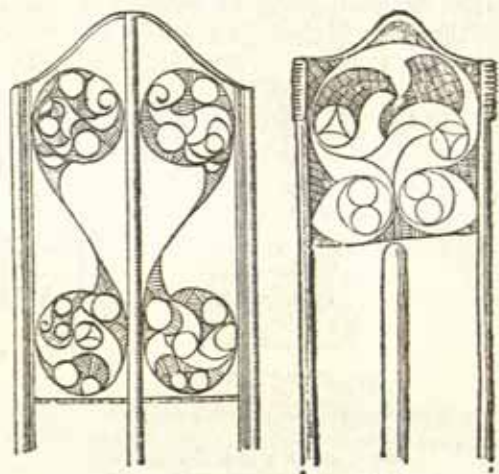


THE CLASSICAL PALMETTE (A, C) AND ITS CELTIC RENDERING AS SEEN ON THE WALDALGESHEIM TORC (B)

all real semblance to naturalistic forms. In the lower frieze one can detect renderings of the enclosed palmette repeated in a scroll and alternately inverted, interspersed by comma-shaped markings derived from pendant features of the conventionalised lotus-flower. The upper frieze is clearly a modified version of the lower, one stage further removed from the classical original.

The fact that on the same torc we find represented three stages in the evolution of Celtic art only goes to show how careful one should be in dating individual pieces by analysis of their ornament. Equally dangerous is it to adhere too closely to the evidence of associated finds, since as heirlooms elaborately decorated objects would be likely to survive by generations fashions in ordinary material culture. Yet it is still possible, without prejudice to the difficult question of chronology, to pick out certain pieces as either having them-

selves been introduced or as having been made in the same Middle La Tène tradition in this country. Outstanding among these are the bronze scabbard-mount, shield and shield-mount from the Witham (15) and the shield-boss from the Thames at Wandsworth. The special characteristics of the style are the sinuous treatment of repoussé decoration, the scrolls of which branch into formal leaves often terminating in engraved spirals, and the surface of which is commonly enriched by delicately incised lines. Recent examination of the Witham scabbard-mount has shown that it was originally gilded. Further work in the laboratory may well prove that other pieces were enriched in the same way.



LE TÈNE SWORD SCABBARDS FROM HUNSBURY (*left*) AND MEARE (*right*)

The maxim enunciated by Sir Arthur Evans that "the tendency of all Late Celtic art was to reduce the naturalistic motives borrowed by it from the classical world to geometrical schemes" applies with all the more force to Britain in that the art survived there longer than elsewhere. In freeing themselves from classical motives the British artificers created a style of their own which revealed an astonishingly fine perception of the possibilities of curvilinear patterns. This is perhaps most clearly exhibited in the flamboyant designs thrown into relief by basket-work fillings on the Birdlip (48) and Desborough mirrors and on scabbards like that from Meare. The vitality of these pieces can perhaps be appreciated most fully by comparing such stylistically "later" examples as the Trellan Bahow mirror or the Hunsbury scabbard. The

enamel work tells a similar story. Both the preliminary stage, when the enamel was used in the form of studs attached by pins after the manner of coral, and the earlier phase of true enamelling, in which the substance was applied in fused condition to a restricted area of metal, were common to Britain and the Continent. Among British material the Bugthorpe discs admirably exemplify the use of enamel studs, and the bosses of the Thames helmet (35) the application of fused enamel to a metal surface prepared by grooving. A peculiar method of securing the enamel is found in the bosses of the Battersea shield (1), where it has been fused on to clay buttons held in position by central pins. The British artificers earn special credit for the way in which they solved the problem of expanding the enamelled field by the *champ-levé* process. By this method, involving the scooping of a bed for the fused material from the surface of the metal or alternatively the perforation of the metal and the introduction of the enamel from the back, they were able to produce masterpieces like the Santon Downham harness-mount for which no parallel can be found in continental work. The best results were obtained by the use of red enamel, coloured by red oxide of copper; with the addition under Roman influence of blue and yellow the unity of the design was impaired and the style had entered upon its decadence.

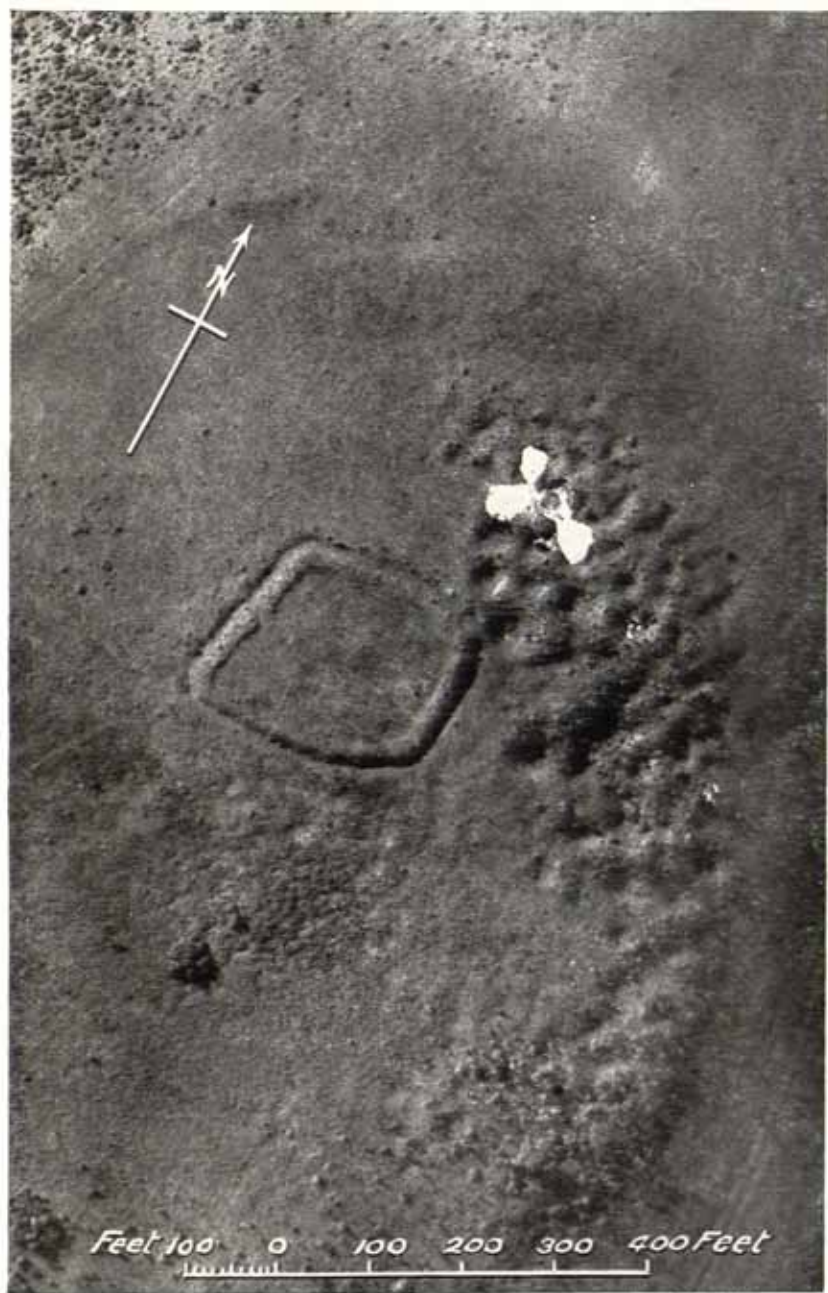
An aptitude for naturalistic forms was foreign to the Celtic genius. Just as the palmette was reduced to abstract patterns in the decoration of their luxury weapons and harness-trappings, so in their coinage the chariot and horses of the Greek model were gradually transformed into meaningless blobs and dashes. Yet in the stylised horse and ox heads of their iron fire-dogs, the boar's heads of their helm-crests and their ram's head handle-bosses there is something strangely attractive. One has only to compare the White Horse of Uffington (49), which from its downland slope has dominated the Vale for 2,000 years, with its more modern representatives at Westbury, Cherhill or Marlborough to realise that this stylised creation is many times more effective than its naturalistic successors. Individual features of the Uffington Horse are peculiar to Late Celtic craftsmanship, the disarticulated limbs recalling coin designs and the peculiar eyes and beak-like mouth the repoussé horses of the Aylesford bucket (50). Yet the appeal of the figure as a whole is as fresh today as when it was first cut in the turf of the Berkshire Downs.

MINING AND TRADE

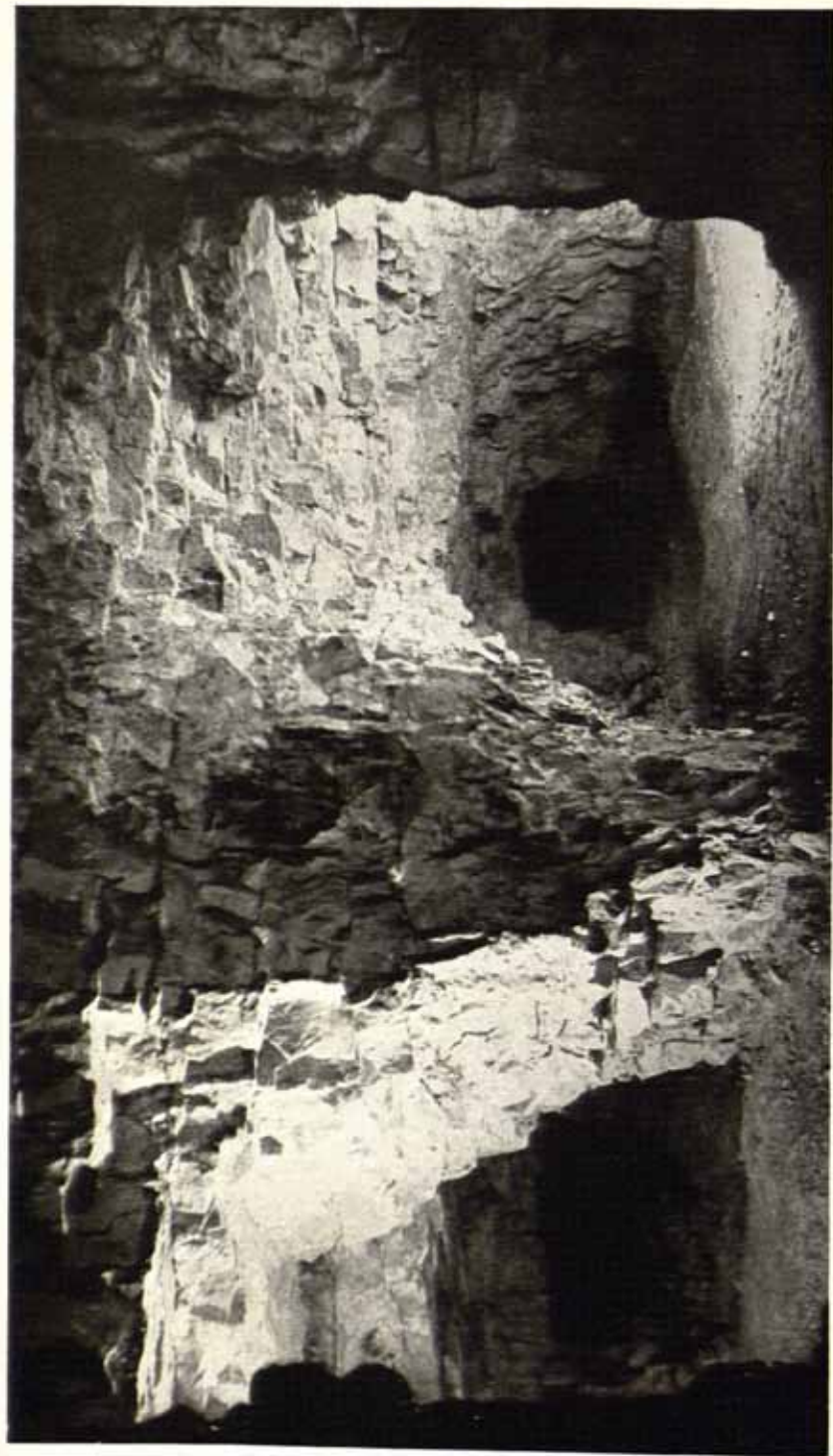
BROADLY speaking, there were two important differences between the organic and the mineral materials of which early man availed himself. Whereas the former could be obtained locally in the normal course of farming or food-gathering, the latter had often to be mined or quarried, and, being of more restricted occurrence, had to a greater extent to be diffused by trade. The degree to which mining and trade were able to develop were themselves conditioned to some extent by the general economic level. Thus we can trace two distinct stages in the relation of Stone Age man to his principal raw material. When as a food-gatherer he moved about in small groups in pursuit of fish, game, roots and berries and other natural produce, he collected his flint in the same way, here gathering it from surface spreads left behind by eroded chalk or boulder-clay, there utilising nodules taken from an old river gravel; where no other source of supply was available he searched the beach for likely pebbles, as we have all done at the seaside.

Neolithic man on the other hand, used to raising a large proportion of his food by his own efforts, was fully capable of undertaking the disciplined work of mining necessary to assure himself of a supply of flint direct from the chalk, its primary source. Mined flint had many advantages. It occurred in larger pieces than beach pebbles and most gravels, and was free from the flaws acquired by nodules in their manifold adventures since leaving the parent chalk. For many purposes derived flint was adequate, but for the blades of the axes and adzes used in felling and dressing timber, a task of immense importance among primitive communities, the extra toughness of the mined material was highly valued.

Certainly early man found it worth while to acquire mined flint, because we find traces of his burrowings as far apart as Portugal, Sicily, S. Sweden and Poland, not to mention regions outside Europe. Nowhere in our continent do the mines cluster more thickly than on the chalk of northern France, of Belgium between Mons and Liège and of southern England. Those at Weeting, Norfolk, which pass under the rather sinister name Grime's Graves, were among the first to be explored and have received more attention than any others in England. Sussex can boast four mining sites



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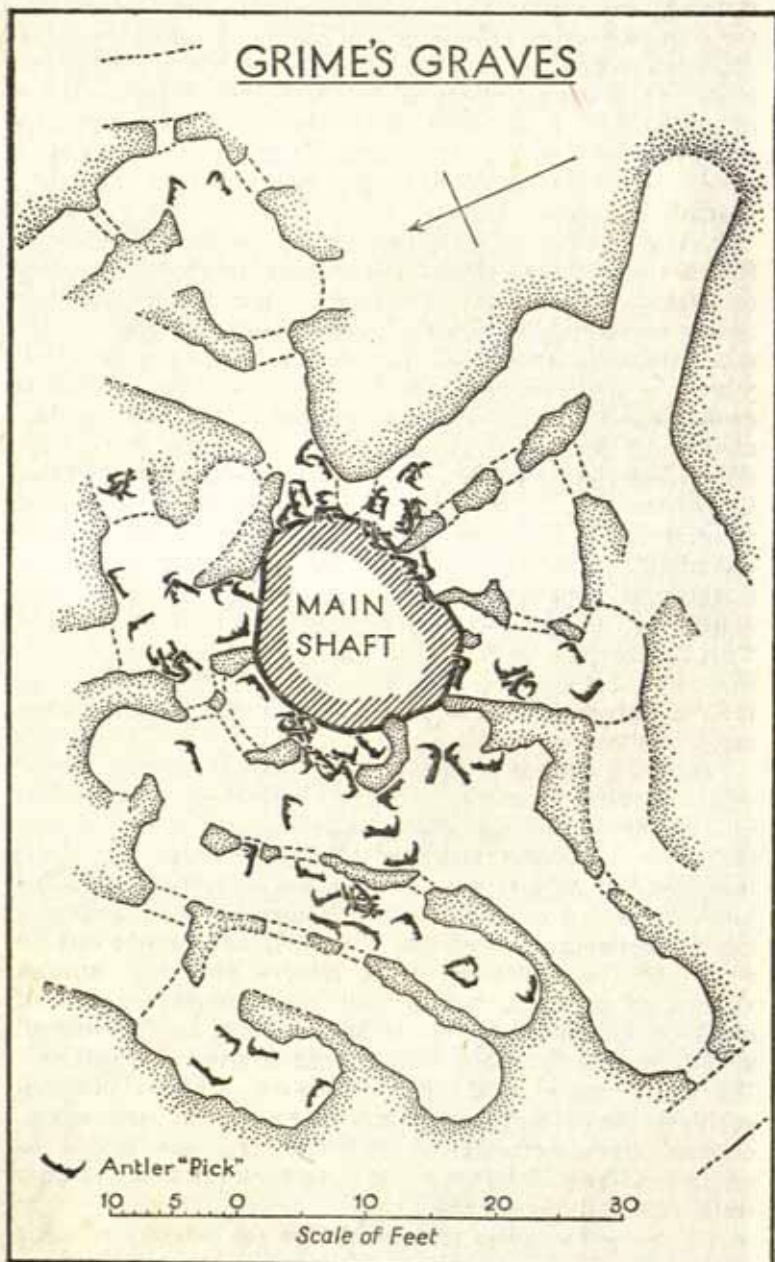
52 GRIME'S GRAVES; in the galleries (flashlight)

tested by excavation, the famous ones enclosed by the ramparts of the great Iron Age hill-fort of Cissbury, on the downs above Worthing, Harrow Hill and Blackpatch a few miles to the west, and Stoke Down behind Chichester. The mines on Easton Down, near Salisbury, are the only ones yet investigated in Wessex. North of the Thames flint-mines are so far unknown apart from Grime's Graves and other Norfolk examples.

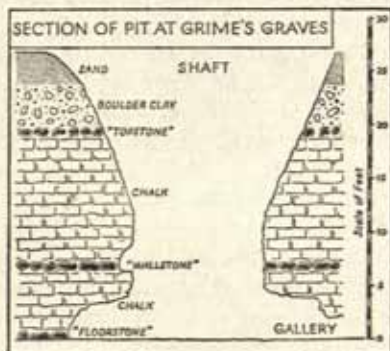
Making allowance for their meagre equipment our Neolithic forbears solved with remarkable success the eternal problem of mining—how to obtain the best return for the smallest outlay compatible with a reasonable degree of safety. They adapted their methods skilfully to suit local conditions. Thus, where, as at Peppard, Oxon., the flint seam they wished to exploit outcropped or came very close to the surface, they extracted it by open workings. Where it occurred at a certain depth they tapped it by means of shafts undercut at the base. Only when the depth of the shaft involved a substantial amount of dead work did they find it necessary to drive radiating galleries and so compensate by extracting a larger quantity of flint. Working such galleries must have been dangerous, as the discovery of a miner's skeleton crushed with antler pick in hand at the Belgian site of Obourg illustrates, but on the whole we can admire the judgment of the old miners who were generally careful to leave sufficient chalk intact to ensure their safety.

From the surface it is impossible to obtain any idea of what the mines were like. At most they reveal themselves as hollows caused by the gradual settlement of their infilling (51). The shallow ungalleried shafts are frequently quite invisible. To explore a galleried mine cleared of its rubble infilling, as one can do at Grime's Graves, is an unforgettable experience. Descending the shaft, one cannot but be struck by the assurance of the miners who dug through 10 feet of sand and boulder-clay and quarried 20 feet of chalk, including two layers of inferior flint, the "topstone" and "wallstone," before reaching the coveted "floorstone." When one remembers that this shaft is one of several hundred at this single site and that for acres the chalk has been honey-combed by a network of galleries (52), one begins to understand how attractive must have been the flint and how well organised the miners.

All this is the more remarkable for the poverty of their equipment. The actual work of quarrying was mainly done by means of red deer antlers with beams cut short and all



but the brow tine removed. Such implements, although usually described as "picks," would hardly have been effective wielded in the way suggested by this term. It is much more likely that they were held in the left hand, the right being used to hammer behind the brow tine, the tip of which was applied to a line of weakness in the chalk. Holes of the kind which this would make, if for some reason the operation was not carried to its conclusion, were observed at Blackpatch and Harrow Hill (53), while a high proportion of the antlers from Grime's Graves were battered on the beam immediately behind the brow tine, which itself was usually broken short or at least showed signs of wear. A flashlight photograph of antlers as they lay against the flint seam in a gallery abandoned for 4,000 years, and a close-up of finger-prints impressed on the chalk caked on one of the handles, bring us close to those in whose hands they were once held (56, 55). Some of the hardest quarrying work at Grime's Graves was done by tough



stone axes. Loose material was handled by shovels, sometimes provided with blades formed of ox scapulae, sometimes no doubt entirely of wood. The volume of material removed from the deeper shafts at Grime's Graves must have been considerable: of the three cleared the depth ranged from 30 to 40 feet and the diameter at the mouth from 28 to 42 feet. Spoil from the subterranean workings was mostly dumped in disused galleries, so as to avoid unnecessary labour. Both rubble and flint must have been hauled up the shaft in baskets. The chafing of ropes or thongs was noticed above the entrances to galleries at Grime's Graves and the joist marks of a timber cross-beam were seen at the head of one shaft. The miners themselves doubtless climbed in or out by means of ladders or notched timbers, no chalk-cut steps having been observed in the English galleried mines. One fact borne in upon anyone who wriggles along the ancient galleries to-day with a torch and (if he is wise) with a spare candle and matches is that the miners must have required artificial light for their work. Actually they used open lamps, generally of chalk, but sometimes of pottery, in

which a wick doubtless floated on animal fat. They were certainly smoky, because at Harrow Hill original soot-marks were found over gallery entrances (54).

How the mining was organised we have little information, but it is probable that the miners concentrated on one shaft at a time, exhausted it and then refilled it with the rubble excavated from the next. This explains how fresh and unweathered even the entrances to the galleries appeared to their modern explorers. Graffiti scratched on the chalk walls of galleries at Grime's Graves and Harrow Hill may have been tallies for reckoning loads, but how many men were necessary to operate a mine and how the work was regulated we do not know.

Everything we have learnt goes to show that the miners were expert at their work. It seems, therefore, more than likely that we can envisage communities of miners, supplying flint to a large surrounding area. The existence around the shaft heads of heaps of waste flakes and axes broken in the making suggests that, besides actually extracting the flint, the miners roughed out the forms of implements, although the polishing process seems to have been carried out elsewhere. This is quite what one might have expected, since flint is a weighty substance, the proportion of waste is high and means of transport in Neolithic Britain were exiguous. How far and by what means the flint was traded we do not know, but it is evident that mining sites were focal points to which different groups were in the habit of repairing. Among the pottery recovered from Grime's Graves both the leading Neolithic wares are represented, and what is more interesting some of the sherds show evidence of hybridisation.

For some purposes Neolithic man preferred materials other than flint for his axes, even in the siliceous areas of southern England; elsewhere he was constrained to use them in the absence of flint of sufficient size. Since most of the older rocks were too tough for flaking, they were sought in the convenient form of pebbles or small pieces detached by glacial action or normal weathering. Thus we find neither mines nor open quarries for obtaining such materials. Even the close-grained igneous rock which forms the high crags of Graig Llwyd, Penmaenmawr, was gathered in the form of scree lower down the slopes of the mountain, where numerous workshops have been found. In its fresh form the rock is blue or more rarely green in colour, weathering to a khaki shade. Its properties were eagerly appreciated by ancient man, and by the time Peterborough ware had reached North



53 HARROW HILL FLINT-MINES: "pick"-marks

54 HARROW HILL FLINT-MINES: soot from miners' lamps



55 GRIME'S GRAVES: finger-prints on a miner's "pick"



56 GRIME'S GRAVES: miners' picks resting against the flint seam

Wales axes of Graig Llwyd stone had found their way to Avebury and Windmill Hill, and even as far east as the Essex coast. There is no reason for thinking that the Graig Llwyd stone was worked by specialists; much more likely the tribes of North Wales and Anglesey sent parties to the site to rough out a supply of axes for the coming season. It is possible that expeditions were even sent from as far afield as Wessex, but more likely the axes passed from hand to hand, once contact had been established by the spread of cord-impressed pottery people to North Wales. Sarsen and other kinds of quartzite were commonly used for querns, although in Beaker times lava was imported from as far afield as Niedermendig in the Lower Rhineland.

The coming of metallurgy to Britain early in the IInd millennium B.C. created new demands. Copper and tin gained progressively in importance over flint and stone. In the earlier stages of the Bronze Age it is true that many implements continued to be made from pebbles or loose nodular flint, but metal took the cream of the market. Very soon the mining of flint ceased at Grime's Graves and Cissbury and the working of the Graig Llwyd scree was halted, as if to symbolise the passing of an age.

We have no counterpart in Britain to the ancient copper mines of the Tyrol. Surface lodes must have been worked, of which no traces beyond a few grooved stone mining hammers could be expected or have in fact survived. Ireland was a plentiful source of supply, but the ore was fairly widely distributed. Very different was the case with tin, an essential constituent of bronze, yet of narrowly restricted distribution. The only native source in the British Isles was Cornwall, from which the metal was also almost certainly exported to the Continent. The activities of the ancient Cornish tanners have therefore more than ordinary interest. Prior to the middle of the 15th century, when shaft-mining became common in the county, the ore was obtained either by "streaming" or by burrowing in the face of cliffs. Whether prehistoric man practised the last method we may never know, because the sea must have eroded most of the evidence. In any case we may be certain that he obtained the bulk of it from tin streams fanning out from parent lodes higher up the hillside. Sometimes these are found 30 or 40 feet below ground surface, but it can be taken for granted that the early tanners worked those most easily accessible. They must have set about their work in much the same way as their successors of historical times. Clearing away the overlying soil they

would shovel some of the tin "bed" into a sloping wooden waterway or "tye"; then by vigorous stirring they eliminated the lighter waste, leaving as residue the heavier ore in the form of sand and lumps of tin-stone. The former was ready for smelting, but the latter had to be crushed, the smaller pieces ground like grain in a quern, the larger broken by hand on rocks, which thereby acquired cup-like hollows.

There appear to have been two phases of main intensity in the exploitation of Cornish tin, an earlier at the dawn of the Bronze Age, and a later dating from its close and from the Early Iron Age, the evidence for the latter of which is the more conclusive. At first the chief centre of metallurgy in the British Isles was in Ireland, which owing to its wealth in alluvial gold stood temporarily in the vanguard of civilization in north-western Europe. Yet, although well supplied with copper, Ireland had to import all her requirements of tin, most of which must have come from Cornwall. In return the Cornish seem to have acquired some of the Irish gold export; the graceful handled beaker from Rillaton (38) was doubtless made of gold washed from Irish stream-beds, while the two crescentic gold neck-ornaments (*lunulae*) from Harlyn were almost certainly imported from Ireland in finished condition. Most of the gold found in prehistoric ornaments in Britain was washed from Irish and Scottish streams. Although a nugget of 22 oz. was found in Co. Wicklow as late as 1795, no more than £30,000 worth of the metal was obtained during the following 70-80 years, showing that the alluvial deposits were well-nigh exhausted.

With the development of a vigorous native bronze industry in England, the home demand for tin must greatly have increased. On the other hand, the evidence for Cornish tinning at this period is slender, and it looks very much as though Brittany was an alternative source of supply. There is evidence that by the end of the Early Bronze Age the tin trade was in the hands of intermediaries who found it as easy to supply Wessex from Brittany as from Cornwall. An intriguing element in the problem is the presence in no less than thirty-six Wessex graves of blue faience beads of segmented form, the affinities of which are unambiguously Egyptian. A closely similar type of bead was found in a tomb at Abydos dated by a scarab of Amenhotep III (1412-1376 B.C.). More decisively, spectrographic analysis of beads from Wiltshire and from Tell el Amarna (1380-50) has recently demonstrated their virtual identity in composition. Similar beads from south-east Spain and Brittany seem to

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would shovel some of the tin "bed" into a sloping wooden waterway or "tye"; then by vigorous stirring they eliminated the lighter waste, leaving as residue the heavier ore in the form of sand and lumps of tin-stone. The former was ready for smelting, but the latter had to be crushed, the smaller pieces ground like grain in a quern, the larger broken by hand on rocks, which thereby acquired cup-like hollows.

There appear to have been two phases of main intensity in the exploitation of Cornish tin, an earlier at the dawn of the Bronze Age, and a later dating from its close and from the Early Iron Age, the evidence for the latter of which is the more conclusive. At first the chief centre of metallurgy in the British Isles was in Ireland, which owing to its wealth in alluvial gold stood temporarily in the vanguard of civilization in north-western Europe. Yet, although well supplied with copper, Ireland had to import all her requirements of tin, most of which must have come from Cornwall. In return the Cornish seem to have acquired some of the Irish gold export; the graceful handled beaker from Rillaton (38) was doubtless made of gold washed from Irish stream-beds, while the two crescentic gold neck-ornaments (*lunulae*) from Harlyn were almost certainly imported from Ireland in finished condition. Most of the gold found in prehistoric ornaments in Britain was washed from Irish and Scottish streams. Although a nugget of 22 oz. was found in Co. Wicklow as late as 1795, no more than £30,000 worth of the metal was obtained during the following 70-80 years, showing that the alluvial deposits were well-nigh exhausted.

With the development of a vigorous native bronze industry in England, the home demand for tin must greatly have increased. On the other hand, the evidence for Cornish tinning at this period is slender, and it looks very much as though Brittany was an alternative source of supply. There is evidence that by the end of the Early Bronze Age the tin trade was in the hands of intermediaries who found it as easy to supply Wessex from Brittany as from Cornwall. An intriguing element in the problem is the presence in no less than thirty-six Wessex graves of blue faience beads of segmented form, the affinities of which are unambiguously Egyptian. A closely similar type of bead was found in a tomb at Abydos dated by a scarab of Amenhotep III (1412-1376 B.C.). More decisively, spectrographic analysis of beads from Wiltshire and from Tell el Amarna (1380-50) has recently demonstrated their virtual identity in composition. Similar beads from south-east Spain and Brittany seem to

mark a trail from the Mediterranean to Wessex. It is interesting to recall that the old antiquary, Colt Hoare, recorded a segmented bead from a disc-barrow at Sutton Veny, Wilts., which, while resembling the faience ones in form, was made of tin. Even more suggestive is a necklace from Odoorn in the Dutch province of Drenthe, comprising four segmented beads of faience and no less than twenty-five of tin, as well as a number of perforated amber lumps of varying shapes and sizes (57). We can only speculate whether the tin in the Sutton Veny and Odoorn beads came from Cornwall or Brittany, but it is worth noting that both these tin-producing regions have yielded segmented beads of faience.

The Odoorn necklace introduces another substance widely traded in prehistoric Europe. A certain amount of amber is to be found on the shore of East Anglia to-day, but there is no evidence that it was exploited in ancient times. The amber lumps used for beads and handled cups in Early Bronze Age Britain were almost certainly imported from the west coast of Jutland. The bulk was attracted to Wessex, where it occurred in as many as fourteen of the graves containing faience beads. The Odoorn necklace suggests that the amber was paid for by exports of tin, which went to supplement the Danish supplies, principally drawn from Bohemia, likewise in return for amber.

The Late Bronze Age ushered in many economic changes, each of which tended to enlarge both the bulk and the scope of trade, hitherto mainly concerned with raw materials and personal ornaments. There is, it is true, evidence for trade in individual bronzes during the earlier part of the Bronze Age, notably the halberds and decorated flat axes exported from Ireland to Britain and the Continent, but nothing comparable with the wholesale trade in finished articles of daily use which characterised its later stages. More settled conditions in the countryside, consequent upon the adoption of more intensive agriculture, no doubt helped, but the decisive factor was improved land transport, enabling merchants to travel round the country with stocks of the latest continental types. When discovered, hidden for safety in the ground, sunk in a marsh or, maybe, lost overboard from a capsized canoe, the hoard of such a travelling salesman sometimes shows that he specialised in one line. Scrap metal merchants also went their rounds, collecting worn-out implements and weapons for the melting pot. When their hoards come to light they often contain cakes of metal retaining the circular form of the primitive hearth in which they were produced

(58). Founders' hoards remind us that early man was careful to preserve his stock of bronze, melting it down and recasting it from time to time, so as to avoid as far as possible the labour of unnecessary mining.

With the immigration of iron-using peoples the exploitation of our native deposits of iron ore must shortly have begun. Knowledge of the earlier stages is still very incomplete, but by Belgic times there is plenty of evidence that Wealden iron was worked: among the miners' camps investigated may be mentioned Saxonbury, nr. Frant, Castle Hill, Tonbridge and the one in Piper's Copse, nr. Kirdford, Sussex. The fact that Caesar alluded to Wealden iron in 55 B.C. suggests that its exploitation may have been earlier than is proved by existing evidence. The vast quantities of slag available to the Romans when road making in this area at the close of the 1st century A.D. also argue in favour of a considerable antiquity for the industry. Incidentally, it has been recorded of one of these iron roads that when struck by lightning its course was plainly revealed by a track of blasted corn; in recent years they have largely been traced by air photography. That the qualities of Northampton ironstone were appreciated in early times is shown by the discovery of quantities of slag at the famous hill-fort of Hunsbury, when it was gutted by modern ironstone workings in the latter part of the 19th century. It is probable also that the iron ore of the Forest of Dean was exploited in the Early Iron Age, although positive proof is not yet available.

Another mineral exploited in prehistoric Britain was lead. Although the mines of Mendip were not worked on a substantial scale until the coming of the Romans, the alacrity with which they undertook operations, proved by the discovery of a lead pig dating from the year 49, points to some native activity before the Conquest. Such, indeed, is hinted at by Strabo's inclusion of silver as a British export and proved by the occurrence of lead rings and net weights at the Glastonbury lake-village, as well as by the finds at Hunsbury and the Caburn. The Hunsbury lead must have been traded from the south-west by way of the forest-free Jurassic zone, a principal highway of prehistoric Britain.

The adoption of iron by no means lessened the use of bronze and the consequent demand for tin, both for home consumption and for export. Indeed, it is for the later stages of the Bronze Age and for the Early Iron Age itself that the evidence for prehistoric tinning is most conclusive. In addition to the indirect evidence of ancient objects incorporated

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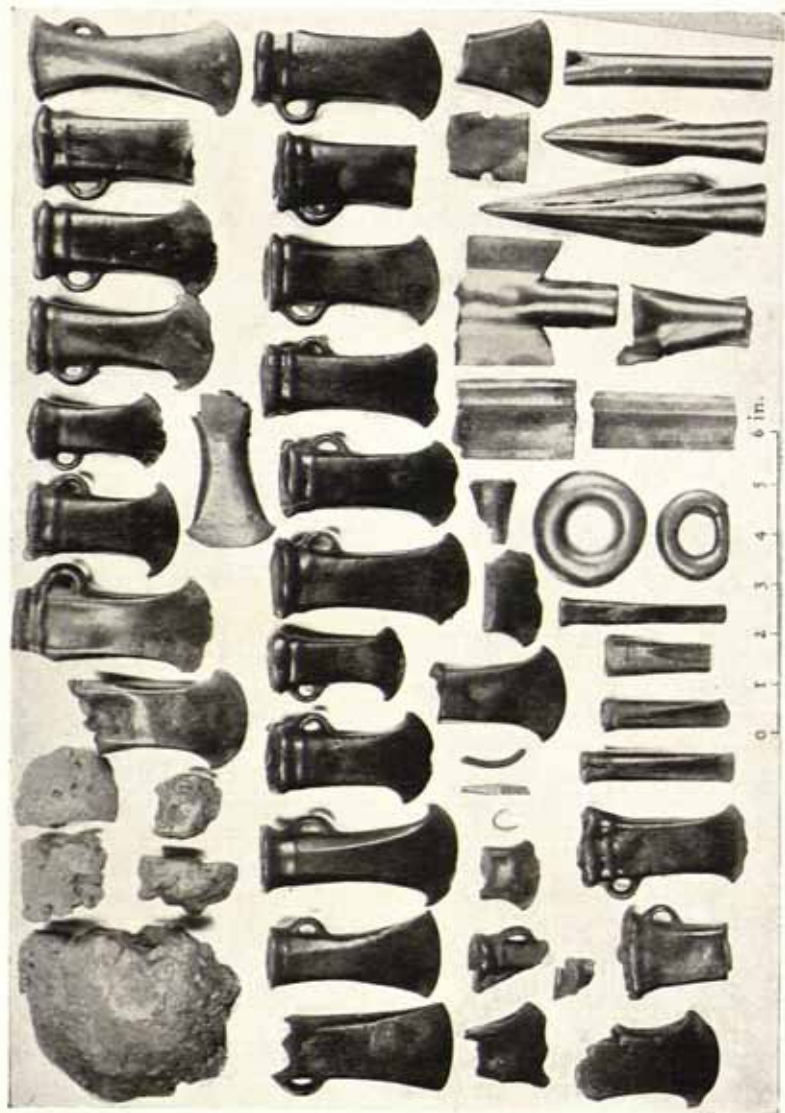
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57 NECKLACE FROM ODOORN: beads of tin, faience and amber



58 FOUNDER'S HOARD OF BRONZES: Green End Road, Cambridge

in tin streams and of imported objects concentrated in the most important tin working areas, we have proof positive in the form of ancient smelting furnaces and tin slag, such as were found in Chûn Castle, Penwith, and in the tin coinage minted during the opening decades of the 1st century B.C. in south-eastern England. Even more enlightening as regards trade are references in Greek and Latin authors. Disregarding the rather dubious hints of earlier voyages, that of the Greek scientist Pytheas, undertaken in 325 B.C. is the earliest recorded. The following description of tin streaming given us by the Sicilian writer Diodorus was almost certainly based on information ultimately derived from this traveller: "the inhabitants of that part of Britain which is called Belerion (Land's End) . . . prepare the tin, working very carefully the earth in which it is produced. The ground is rocky, but it contains earthy veins, the produce of which is ground down, smelted and purified." The finished product, which, Diodorus tells us, was beaten into an astragalus form, was traded by way of Corbilo at the mouth of the Loire and the Garonne Valley to Narbonne and Marseilles. The "certain island lying off Britain called Ictis" referred to by Diodorus is generally identified with St. Michael's Mount (59). At low tide the island is connected with the mainland by a narrow isthmus, conforming to his statement that "during the ebb of the tide the intervening space is left dry, and they carry over the tin in abundance in their wagons." As one contemplates the Mount at low water it is good to think of the wagons jolting across with their precious freight to the harbour, there to be bought by foreign merchants for shipment to the Mediterranean and the Classical World.

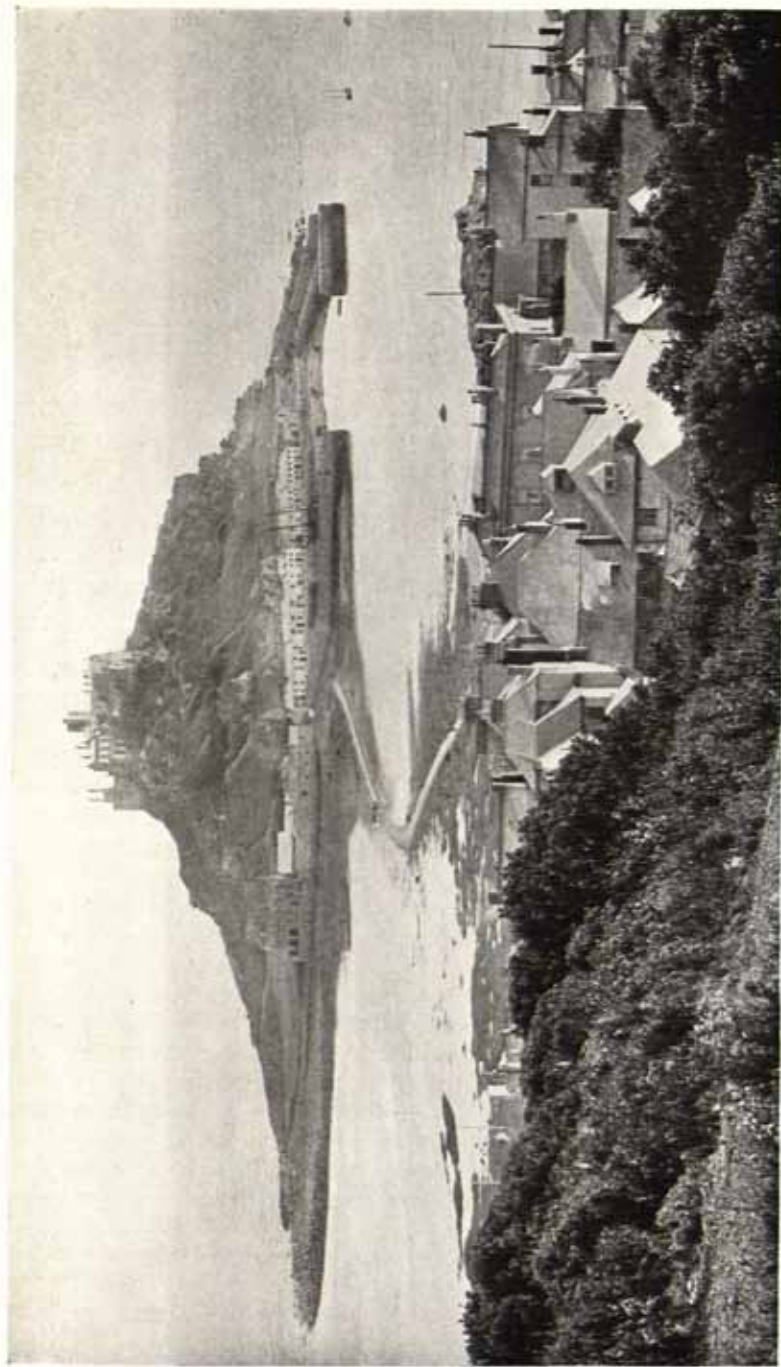
In view of this flourishing trade it might have been expected that Cornwall would have been richer than it was in prehistoric times. Yet, even for the period when we know that intimate trade relations were maintained with centres as far afield as Marseilles, there is no evidence of any special wealth among the tanners. A few coins, some Mediterranean pottery, including wine jars from Chûn Castle, and possibly some Greek vases exhaust the list of imports from the ancient world. A number of finds of objects of Irish gold emphasise that, as earlier, Cornish tin was traded north as well as south. The Cornish tanners produced a relatively scarce but highly essential metal, yet show few signs of material wealth. But this is the common fate of primary producers, and never more so than when widely separated in civilization from the purchasers of their product. It may be true that, as Diodorus

phrased it, the inhabitants of Land's End were "very fond of strangers, and from their intercourse with foreign merchants . . . civilized in their manner of life," but when it came to business the Cornish tanners must have cut poor figures by the side of the wily Greek. One must also realise that under primitive conditions the infertile region of Penwith could hardly have raised sufficient food for a numerous population of miners; the tanners must, therefore, have spent a large proportion of their income on purchasing such necessities as food and clothing. Then, again, the process by which the metal was extracted was not one to give rise to marked grades of society. Streaming required but little capital and could be carried on by small parties. The social basis for a luxury trade in the form of a wealthy upper class was, therefore, absent at any rate among the native tanners themselves.

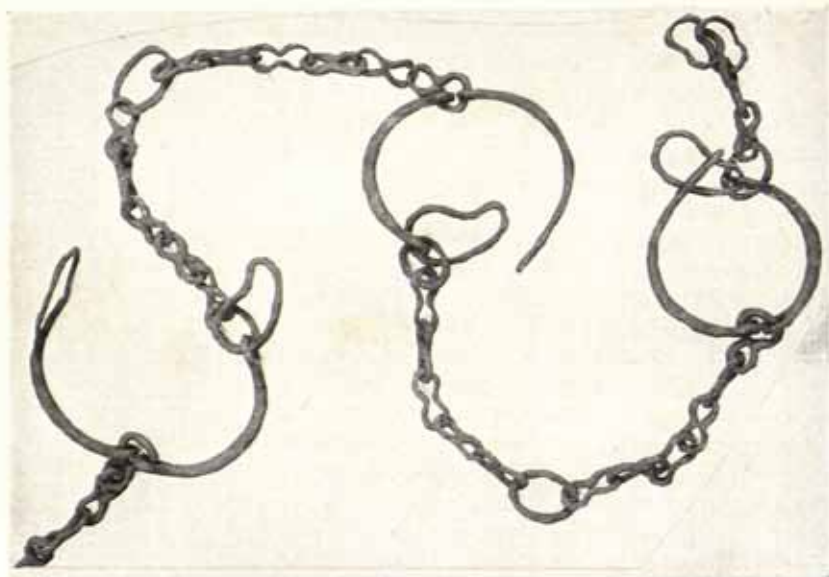
In Britain as a whole we find no marked increase in trade until the coming of the Belgae brought south-eastern Britain within the economic orbit of the Roman province of Gaul. During the earlier centuries of the Iron Age imports were mainly confined to manufactured objects of metal, like the bronze cordoned bucket of North Italian origin from Weybridge, Surrey. Although some of our exports, notably tin and gold, were highly valuable, their bulk was small.

The great development of commerce during the century prior to the Claudian Conquest was due in large measure to Caesar's subjugation of Gaul, by which Britain became an immediate neighbour of the Roman world. This both increased the demand for the primary products which Britain was able to export and stimulated the flow of imports from the Continent. Enlargement of the Gaulish export trade was viewed with favour by the Romans because it enhanced the revenues of the province through increased dues from customs. There is little doubt, also, that trade with Britain was cultivated as conscious "Romanising," by means of which the native independence of the Britons was undermined. The growing economic wealth of south-eastern England, following upon the introduction of more advanced agricultural methods, tended to increase the surplus for export and at the same time fostered the rise of princely families able to indulge their taste for exotic imports.

Among the leading exports from Belgic Britain were minerals such as gold, tin, iron and silver and agricultural products, notably corn, cattle and hides. Organised trade in manufactured exports can hardly have played an important



59 ICTIS: port of the Cornish tin trade



60 SLAVE CHAIN: Barton, Cambs.



61 SILVER CUP AND BRONZE MASKS from a Belgic burial at Welwyn

part at this time, though a decorated mirror and some enamelled fibulae certainly reached Holland. The discovery of individual pieces as far afield as the Fayûm, Egypt, confirms that British enamel work was appreciated in the Roman world, but these were probably soldiers' mementoes reminiscent of the brasswork brought home from India in our own day. Not the least important of our exports at this time was slaves. Tall fair young Britons enjoyed high favour in Rome and were sent to market on slave chains, a number of which have survived. The example from Barton, Cambs., was in all 12 feet long and had six collars (60). The two from the hoard found near Holyhead, Anglesey, in 1943, were each designed for five men.

In return we received oil and wine and a variety of manufactured articles. Great amphorae, in which the oil and wine were once contained, were found with the well-known burials at Welwyn, Stanfordbury and Mount Bures, as well as loose at many sites in south-eastern England. It is impressive to think of these bulky containers with their not inconsiderable content being transported all the way from Marseilles, up the Rhone valley, across central France to the Channel ports and so by ship to Britain. The nature of the manufactured articles imported also bears witness to a very great increase in the physical volume of trade, as compared with any previous period. Luxury objects like the elaborately decorated pots fired in the kilns of Arezzo in Italy, from Barrington and Foxton, Cambs., or the silver cups and bronze masks from the Welwyn burial have earlier analogies (61); what is new is the wholesale importation of imitation Arretine ware manufactured in North Gaul. So close, in fact, did trade relations with Gaul become that the material culture of broad masses of the Belgic population of England became tinged with Roman influence, while their rulers came to approximate more and more in their mode of life to leaders of provincial society within the Empire. The cultural permeation of south-eastern England, which followed the invasion of Julius Caesar, paved the way for the conquest by the Emperor Claudius and the inclusion of Britain within the Roman Empire.



WINE AMPHORA
FROM WELWYN

VI

COMMUNICATIONS

To most people of the present day, used to moving rapidly from place to place as inclination or the call of business directs, early Britain would indeed seem a dull place, if by any magic they could transport themselves 2,000 years in time. Travel in those days was more infrequent than it is easy to imagine today, and when undertaken must have been hideously uncomfortable and protracted. Yet it is easy to forget how many of the conditions of our daily life are the product of changes accomplished with revolutionary activity during the last few generations. Our great-great-grandfathers must as young men have experienced conditions of travel and transport more akin to those of Belgic than of modern times.

Travel, as distinct from folk movement, was in early times confined to the voyages of traders and the progresses of the great, while in a world where food and the great bulk of the necessities of life were produced locally, transport was mainly confined to minerals and luxury articles, most of which were beyond the reach of all but a small proportion of the population. Yet it would be a great mistake to minimise the importance of travel and transport in early times, just because they were restricted in scope. On the contrary, the mere fact that under primitive conditions people do tend to live close to the soil of a particular neighbourhood only makes the more potent such interchange of goods and ideas as defective means of communication made possible; as agents of cultural change their importance can hardly be exaggerated.

Prior to the Late Bronze Age in Britain, man was himself the only beast of burden. With the introduction of ploughs and wagons came the harnessing of oxen as draft animals. For war chariots, the earliest evidence for which in Britain are the bronze nave collars from Heathery Burn cave, horses provided the necessary tractive power. It is about these chariots that archaeology has most to tell, since it was in these alone and in their harness that bronze was used to any large extent. Many of the humbler vehicles were made with little or no metal, save perhaps for some iron, itself liable to perish.

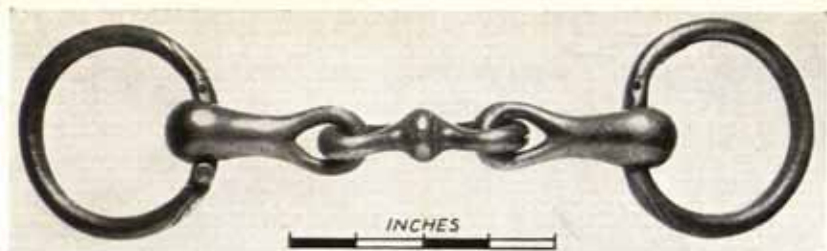
The skill of the ancient Britons as charioteers is well

known; indeed, according to Caesar, so effective were they in war that they threw "the enemy's ranks into confusion by the mere terror inspired by their horses and the clatter of their wheels." Their horrific aspect was elaborated by some classical writers who describe the wheels as armed with scythes for mowing down the enemy. Such reports may be discounted, not only because excavation has failed to disclose such armatures on the many chariot wheels recovered, but also because it is difficult to see what use these could have been if we accept Caesar's statement that the warriors brought up to the fray by their charioteers fought on foot, leaving the vehicle to withdraw from the action.

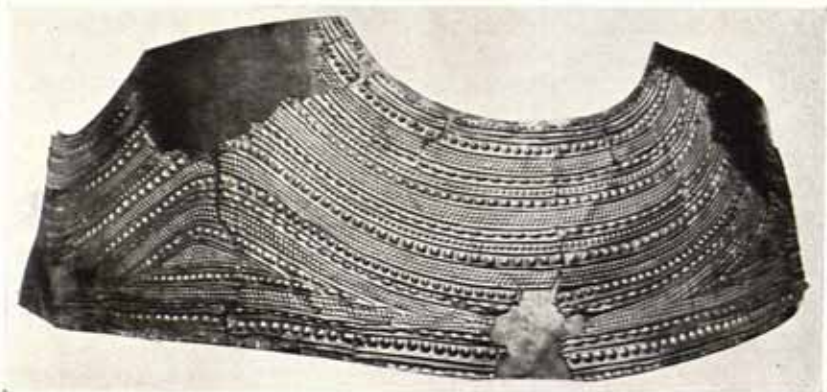
The Iron Age B overlords of East Yorkshire were frequently buried with their chariots, like their cousins in the Marne district of France. The most usual features to survive are iron tyres, sometimes bronze coated, bronze nave hoops, linch pins and various horse-trappings, including bits and terrets. The Holyhead hoard included iron tyres of $2\frac{1}{2}$ and 3 feet diameter, linch pins, nave hoops, terrets and bridle-bits. In the famous grave group excavated at Arras in 1877 (64) an iron mirror and the bronze ferrule of a whip shank were found together with most of the foregoing and the skeleton of a muscular woman, perhaps a warrior queen of the Boudicca type. As a rule the wooden parts of the chariots had vanished beyond recognition, but a labourer who witnessed the discovery of one near Cawthorne Camp, north of Pickering, reported wheels with four spokes and a pole 7 feet long with metal hooks and rings to engage the yoke. The metal tyres range in diameter from $2\frac{1}{2}$ to 3 feet. Caesar's statement that the charioteers were capable of running out along the pole to the yoke while travelling at full speed suggests that the car was open in front. This is confirmed by the circumstances of one of the Marne burials in which a body laid on the floor of the chariot extended some distance along the pole. The sides of the chariots, however, were probably walled in with some light material such as wicker-work. Harness trappings have survived in considerable quantity. The earliest bridle-bits were made of stag's antler, simple affairs consisting of a transverse mouth-piece inserted into cheek-pieces, perforated for the attachment of reins. Metal bits did not reach us until they were introduced in the 3rd century B.C. by the Iron Age B immigrants to Yorkshire. Made of iron, sometimes coated with bronze, or of solid bronze, these early bits comprised rings with three links (62). Two-link metal bits were most likely introduced at a

later date by south-western B people. Metal cheek-pieces are also sometimes found, as in the famous hoard from the Polden Hills, Somerset, in which were included no less than fourteen bits. The terret, a metal ring through which the reins were passed, is another feature of La Tène metal-work in Britain. Like the bits, the terrets were commonly decorated, sometimes with fine enamel work. It is evident that we owe our knowledge of the early use of the horse in large measure to the high regard paid to it by the Britons, who like other barbarous peoples delighted in costly harness. An outstandingly magnificent horse-trapping is the peytrel or brunt of gold plate mounted on sheet copper from Mold, Flintshire, which from the style of its embossing is generally assigned to the Late Bronze Age (63). It was evidently designed for a typical Welsh pony of about 12 hands. Traces of the fringe of coarse cloth were observed when the object was originally found. It had been buried with a man in a cist under a cairn named Bryn yr Ellyllon (Hill of the Fairies or Goblins). The story told of the cairn, that a woman passing it had seen a man seated on a horse clad in golden armour, no doubt enshrines a memory of a previous opening and so accounts for the damaged condition in which the peytrel was found.

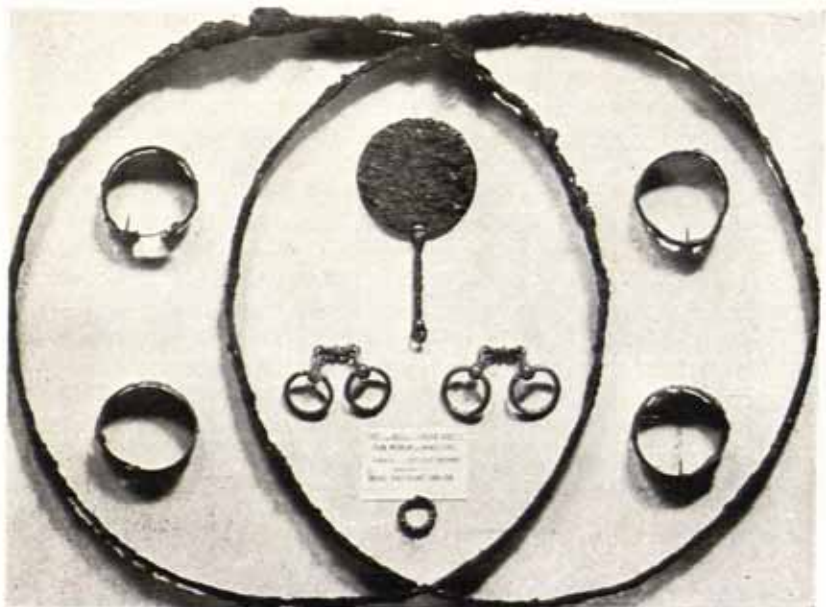
While it is only to be expected that war-chariots would bulk largely in the archaeological, as in the literary record, we have to depend upon the merest scraps of evidence for the homely vehicles which played so much more important a part in daily life. During the excavation of the Glastonbury lake-village part of the axle-box and a spoke of a wooden wheel were found; originally it must have had twelve spokes and an external diameter of about 2 feet 10 inches. Evidently the villagers were capable of turning out wheels on the spot, because an unfinished axle-box was also recovered, while the high standard of workmanship shows that they were practised wheelwrights. From this we can infer that among the Iron Age B people, at least, wheeled vehicles were in common daily use. Wheel ruts of gauges between $4\frac{1}{2}$ and 5 feet were found in the eastern entrance of Maiden Castle and in the western entrance of Hembury, in each case to be referred to the B people. Similar ruts were recovered inside the entrance of the Belgic site in Prae Wood, Verulamium. Metal linchpins designed to prevent the wheel slipping off the axle provide further clues to the use of wheeled vehicles. Whether, in addition to two-wheeled carts, four-wheeled vehicles were in common use in prehistoric Britain there is no direct evidence, though Diodorus tells us that tin was carried to



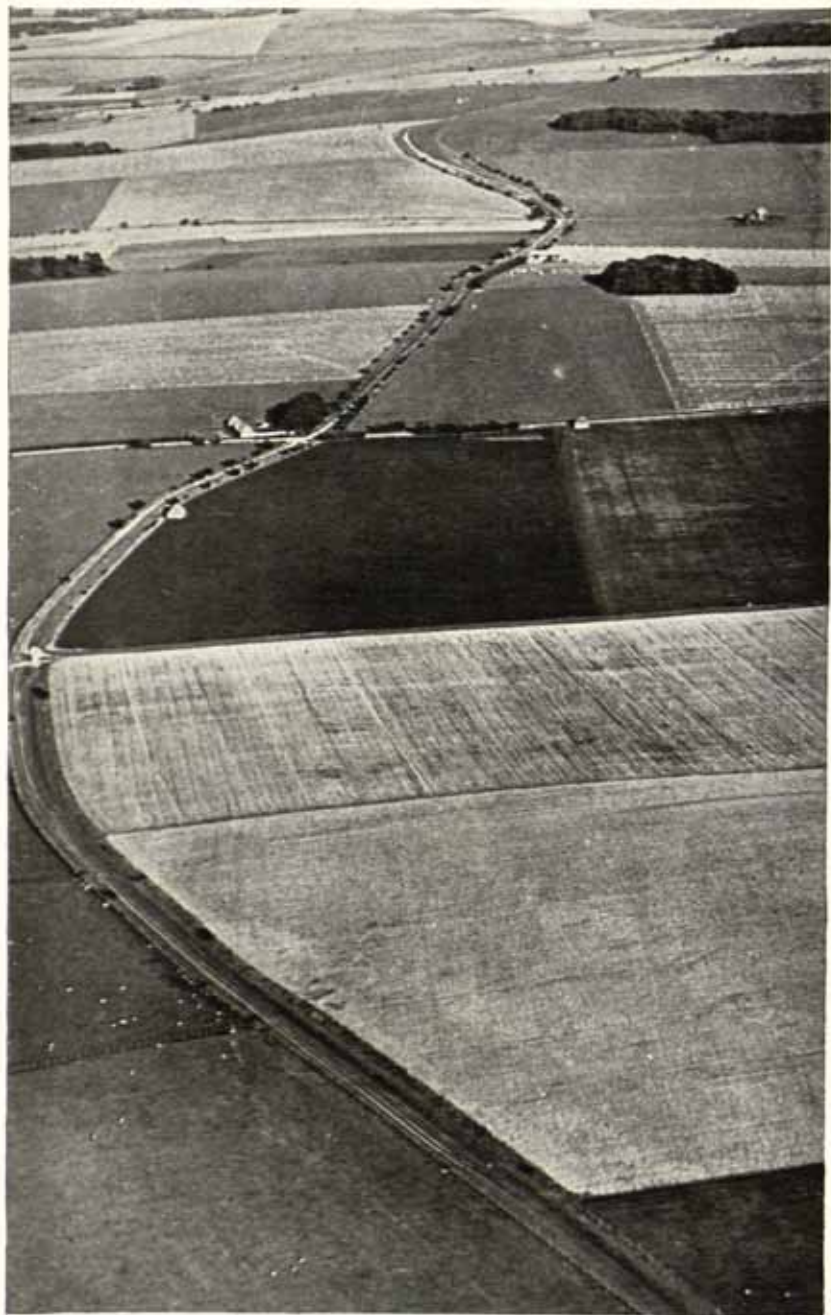
62 HORSE'S BIT: Walthamstow



63 GOLD PEYTREL: Mold

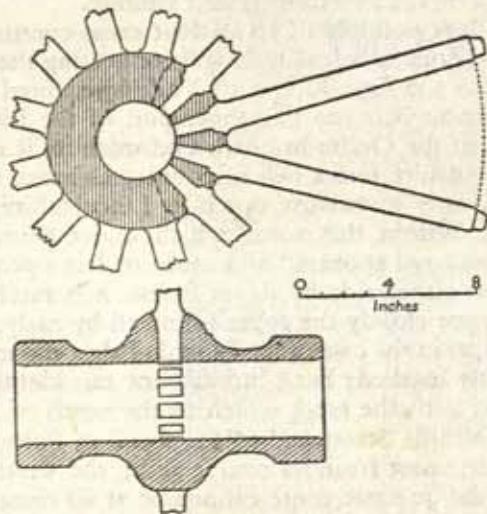


64 CHARIOT TYRES, AXLE HUBS, BITS, TERRET AND MIRROR :
burial at Arras



65 BERKSHIRE RIDGEWAY: from the air

Victis from the mainland in wagons, and four-wheeled carts were certainly used on the Continent during the Early Iron Age. It is likely that wheel-less vehicles of the *travois* type, dragged over the ground as sledges are drawn over snow, were also used in prehistoric Britain. The survival of the sliding vehicle up to modern times in Scotland and Wales, and up to the present day in parts of Ireland, argues in favour of their once having been more widely distributed in Britain. Their absence from museum material by no means argues



WOODEN WHEEL HUB FROM GLASTONBURY LAKE-VILLAGE

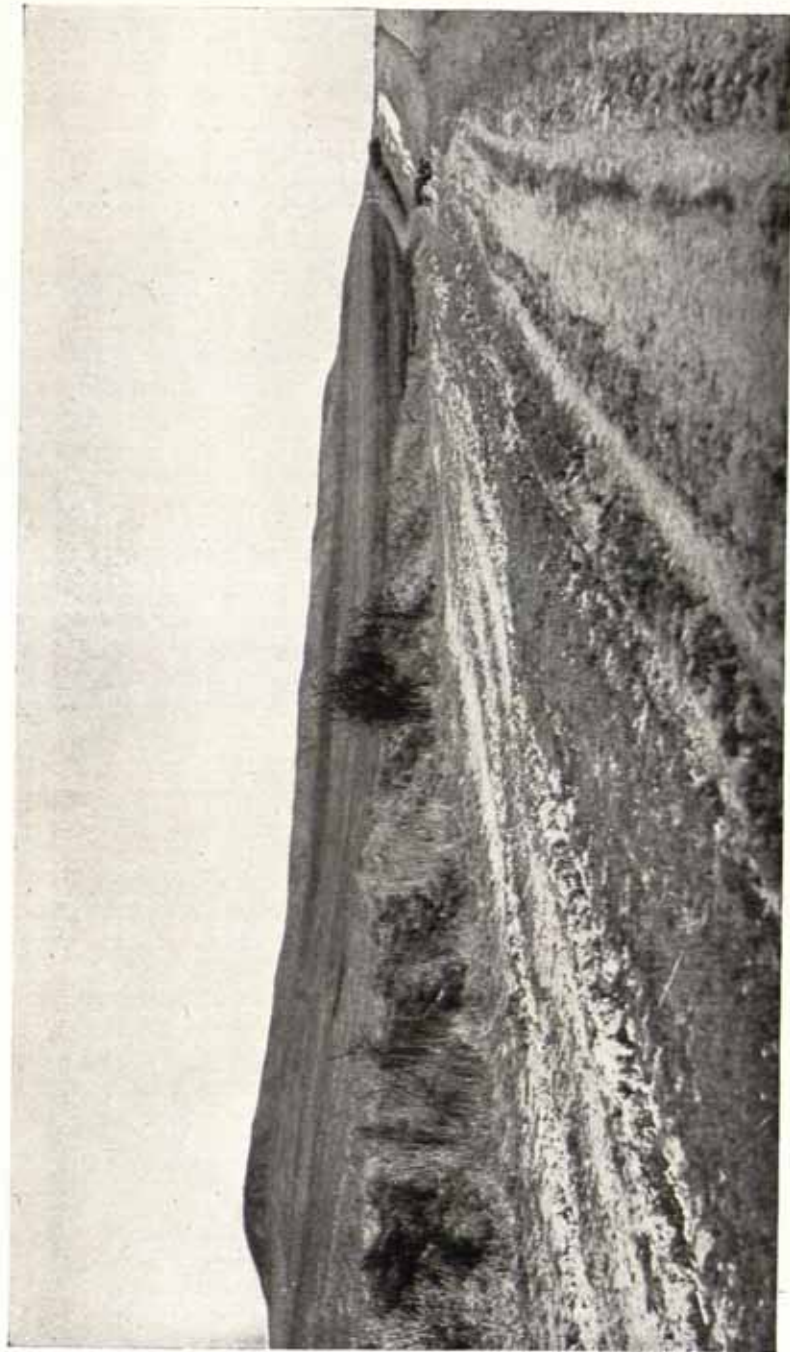
against this, since they are easily made without metal parts. Sooner or later traces of wooden sliding vehicles are almost bound to turn up in water-logged sites. Finally, it must be emphasised that the great bulk of merchandise carried over land routes must have been on the backs of pack-horses, as indeed it was up to comparatively modern times. Not only were early methods of harnessing horses almost incredibly wasteful, but the roads required for vehicular traffic were virtually non-existent.

Few subjects conceal more danger to the unwary than ancient trackways. The mistake most commonly made is to seek and attempt to identify what has never in fact existed. Roads in the sense of fixed and narrowly defined ways, paved or metalled to withstand the wear and tear of constant traffic, are so much a part of our daily life that some effort is needed to envisage the countryside without them; yet we all know

that, save for a brief interlude under the aegis of the Roman Empire, western Europe knew no roads of this character until the middle of the 18th century. What is not always appreciated, however, is that the unmetalled tracks which preceded roads were not fixed but of necessity shifted over comparatively broad belts of country. It sometimes happens that by observing the alignment of a county boundary or by the study of documents it is possible to map the line of an ancient route, but such a line does not of course represent anything more than its most recent fixation.

An excellent example of an ancient cross-country route is the Jurassic Zone, a belt of light soil connecting the Cotswold country with the East Riding of Yorkshire. Sited along the line of junction between the upper part of the Lias and the lower part of the Oolite in north Oxfordshire, it expands in Northamptonshire into a belt of country as broad as twenty-four miles, only to narrow down in Lincolnshire to a bare four miles. Within this zone, which under primitive conditions must have appeared as a more or less open corridor, bounded on either side by dense forest, it is rarely possible to define more closely the route followed by early travellers, save where, as in the case of the Lincoln Edge, the topography is sufficiently marked; here, indeed, one can identify at least one version with the road, which to the north of Lincoln is known as Middle Street and to the south as Pottergate. But the fact that, apart from its course along the western rim of the Edge, the Jurassic route cannot be at all closely defined does not in any sense diminish its importance. Its existence during the Early Iron Age is not only proved by the distribution of antiquities along its course, but is positively demanded by the community of style in the decoration of La Tène metal-work in the south-western and north-eastern provinces of the Iron Age B culture in Britain.

The great through ways of the Chalk country, notably those linking Wessex with the coasts of Norfolk and Kent, are similar in general character, though they tend to be more closely defined topographically. The more northerly of the two, the western end of which is close to Avebury, traverses Berkshire as two roughly parallel tracks, one keeping the crest of the downs, the other following the lower slopes. Some have explained this reduplication as a function of the seasons, the higher one, the famous Ridgeway, being for winter use, the lower or Icknield Way coming into its own during the summer months with the drying up of spring-heads. The Ridgeway enters Berkshire above Ashbury and



66 BERKSHIRE RIDGEWAY AND UFFINGTON CASTLE



67 THE ICKNIELD WAY: skirting Therfield Heath, Royston

sweeping on past Wayland's Smithy, Uffington and Letcombe Castles, and Lowbury Camp makes a characteristic approach to the Thames fords by diverging forks. One version of its course is still preserved by a green track, which makes a favourite haunt for walkers (65, 66). Mentions in Anglo-Saxon charters, the absence of Roman features in its lay-out and its alignment on a series of Iron Age hill-forts combine to suggest that the Berkshire Ridgeway was in use during the last centuries of prehistoric Britain, while indications are not lacking of an even greater antiquity. The Icknield Way follows the foot of the downs from Ashbury to Wantage and fords the Thames at Wallingford and near Goring. North of the river it carries on alone, following the lower slopes of the Chilterns. Then, joining the Cambridge-London road at Baldock, it continues to Royston, traversing on the way the edge of Therfield Heath, where its recent tracks can be seen furrowing a zone of country a quarter of a mile in width (67). Maintaining a north-easterly course, the Way passes through Newmarket and pushes on across the chalk belt from ford to ford, crossing the Kennet at Kentford, the Lark at Lackford, the Little Ouse at Thetford and the Wissey at Bodney. Finally, passing Swaffham on the west, it crosses the Nar and makes for the coast near Hunstanton. Although stretches of it were used in Roman times, the Icknield Way can certainly lay claim to a respectable prehistoric antiquity. Indeed, it seems to have marked a line of movement as early as Neolithic times, if we can rely upon the siting of isolated Long Barrows along its course at Churn, near the Goring Gap, at Dunstable and on Therfield Heath. The distribution of the characteristic pottery, on the other hand, suggests that Beaker-using people, entering by way of the Wash, found their way down to northern Wessex by travelling in the opposite direction.

Another notable thoroughfare leads from Salisbury Plain to Dover. As the Harroway it crosses the Hampshire Downs, north of Andover and south of Basingstoke. Then, bearing a trifle southwards, it passes through Farnham to reach the Hog's Back and the North Downs, along the southern slope of which it crosses Kent as the Pilgrims' Way to reach the coast at Dover. The antiquity of the route is hard to establish. In Surrey it appears to have been used to some extent during Roman times, but in Kent there is definite evidence of its Iron Age antiquity; not only have numerous finds of Belgic coins been found along its course, but it actually passed through Bigbury Camp. How much earlier the route may be we have as yet no certain means of knowing.

Besides through routes there must have been in prehistoric times, as today, a very large number of local lines of communication. In Wessex these tended to follow the crests of the downs as ridgeways, skirting the heads of streams and linking hill-forts. Thus in Hampshire two main ridgeways have been identified, one running from Winkelbury westwards, past the camps on Ladle Hill and Beacon Hill to Walbury and round to Fosbury, the other entering the county near Quarley Hill and travelling eastwards to Danebury, Woolbury, St. Catherine's Hill, Butser Hill, and so to the South Downs.

More specialised, and representing the only artificial lines of communication in prehistoric Britain, are the brushwood and timber causeways of the Cambridge and Somerset Fens, linking "islands" with the "dry" land. Some of the wooden ones are quite elaborate, comprising innumerable cross-beams set edge to edge and held in place by side runners and vertical piles rammed into the underlying bog. Similar "corduroy tracks" are still in use among the peasants of remote parts of Europe like Carelia and were even employed by the Germans to move military transport up to the Leningrad front. They first began to be built at the end of the Bronze Age when heavy rainfall caused flooding of many low-lying areas and they have survived through being covered by peat during the ensuing wet period.

So far we have confined ourselves to land transport, yet prior and probably even subsequent to the harnessing of animals this was essentially subsidiary to transport by water. By means of inland waterways traffic could pass easily through heavily forested regions, difficult to traverse on foot and impassable to vehicular traffic. Moreover, the economic advantages inherent in water transport, which repay vast expenditures upon inland waterways by modern states, must have been even more pronounced when animal transport was either lacking or its value diminished by defects in harness and vehicles. Further, it cannot be recalled too often that the prehistory of Britain is in large measure a story of the impact of influences from the Continent which, whether ethnic or purely commercial in character, were all dependent upon boats.

As is only to be expected, it is the boats of the inland waterways that bulk most prominently in the archaeological record, and of these our information is limited almost entirely to those of robust build, canoes dug out of tree trunks. In England these are most commonly found in the

beds of existing rivers or in contiguous alluvial deposits, but occasionally, as happens far more often in Ireland and Scotland, they turn up in marshes or old lake-beds in more or less close association with crannogs or other forms of lake-dwelling. Thus one was found close by the Glastonbury lake-village and another near the Llangorse crannog, but most of them come from the Fens or from such rivers as the Thames and the Trent or their tributaries.

In size dug-out canoes range from 8 feet or so to the 48½ feet of the famous boat found at Brigg in 1886 during the construction of a gasometer on the right bank of the Ancholme. They also vary considerably in shape: they may be squared or tapered to a point at both ends, or they may have a pointed prow and a squared stern; or, again, they may be squared or rounded in section. As a rule they are made of a single piece of wood, but in a few cases, for instance in the Brigg boat and in two others recently dredged from the Trent near Nottingham, the stern has been made from a separate piece inserted into a groove caulked with moss (68, 69). The device of fitting a stern-board was an economical one, since it allowed the use of trunks with rotten cores. The task of hollowing out a sound piece of timber, after first of all shaping out the main form of the boat, must have been a severe one. Careful study of the boat from Llangorse shows that the hole-and-wedge method described in an earlier chapter (p. 48) was employed for the main part of the work. In thinning the walls special care had to be taken to avoid causing splits. To judge from the Llangorse boat, vertical grooves were cut by means of a gouge and the intervening wood removed by a chisel. When hollowing out boats with transverse ribbing, the hole-and-wedge process must have been modified in its later stages.

Apart from a small canoe of unknown date from Astbury, Cheshire, none of the English specimens shows traces of oar-holes or thole-pins. The normal method of propulsion was undoubtedly by paddle rudder. In some dug-outs a seat was cut in the solid at the stern for the paddler, notably in those from Llangorse and from the Royal Albert Dock, Woolwich. Narrow in proportion to their length—the 48½-foot Brigg boat was less than 5½ feet across—the larger ones must have been difficult to manoeuvre. One can imagine that balers, such as that found in the punt-like example in Whattall Moss, Ellesmere, must have been put to frequent use, even in the still water of rivers and meres. Without some form of stabilisers, like those used in the Indian and

Pacific Oceans, such boats could hardly have ventured on to the open sea. Of English dug-outs the only one bearing possible indications of the attachment of outrigger equipment is the Brigg boat, on the gunwale of which small holes suitable for lashings occur at intervals of approximately 2 feet. However, the regular disposition of the holes along the entire length of the gunwales suggests an extra strake, such as was found still in position on the small dug-out from Giggleswick Tarn, near Craven, Yorks., as the more likely explanation. One would in any case hardly expect to find indications of out-rigger attachments on river craft.

Prior to the advent of pollen-analysis the dating of dug-outs was a difficult matter, though there is ample evidence both from Scotland and from the Continent for their existence in Mesolithic times. The earliest dug-out found in England, however, is that from the Erith marshes, which from the discovery on its floor of a polished flint axe and a flint scraper can be assigned with fair probability to Neolithic times. It may be noted also that a wooden paddle was among the objects found with Western Neolithic pottery on a submerged shore of Ehenside Tarn when it was drained in 1869. A dug-out found in the fens near Chatteris is reported to have contained a bronze rapier of Middle Bronze Age character. The Whattall Moss boat has been assigned on pollen-analytical evidence to the end of the Bronze Age or the beginning of the Iron Age. Finally, of course, there is the Glastonbury boat, which can be dated confidently to the last century of English prehistory. Remains of a wooden landing-stage (70), approached by a causeway of clay and stone retained by timber planks and protected by a stone breakwater, were found at the north-east of the village.

A boat worthy of special mention is that recently exposed on the Humber shore at North Ferriby. The basis of the vessel was a stout central plank about 2 feet wide and 43 feet long, from which it was built up by the addition of at least three thick oak planks on either side. The planks were fitted edge to edge, but in rather a special manner; the lower edge of each was bevelled to fit into a V-shaped groove cut in the top of the one below, a device for which the only parallels are found on the Gujarati coast of India. As is usual with boats of carvel type the joins were caulked with moss and covered by thin wooden battens; these were held in place by the ties of twisted yew which sewed together the planks. How the necessary rigidity was achieved is not clear, although



68 . A DUG-OUT CANOE AS DISCOVERED: the boat found in building the
Brigg Gas-works



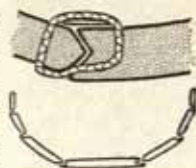
69 STERNS OF DUG-OUT CANOES: from the Trent at Nottingham



70 GLASTONBURY LAKE-VILLAGE: part of the causeway

ribs may have been tied to the knobs found projecting from the central plank. It is possible that this boat was built by people used to dug-outs in imitation of carvel-built boats they may have seen. There is nothing to suggest that it was capable of anything more than estuary and coastal work, except in the fairest weather.

Although the archaeological evidence is confined to the chance discovery of a single example in a brickyard at South Ferriby, not very far from the boat just described, it is probable that vessels built of wicker-work frames with skins stretched across played a far more important role in water transport in general than the dug-out canoes upon which attention has so far been focused. Two distinct forms of such vessels survived up to modern times, and indeed persist locally in slightly modified versions up to the present day, namely the coracle of Scotland, Wales and the Marches, and the curragh of western and north-western Ireland. The mere fact of the survival in the Celtic fringe of the primitive wicker and skin boat, similar to those which still ply the Tigris and the Yalung river of Tibet, is enough to make probable its widespread occurrence in prehistoric Britain. Fortu-



SECTION AND DETAIL
OF THE NORTH FER-
RIBY BOAT

nately the copious references to the craft in classical writings remove all doubt that this was in fact the case. It is important to realise, as a recent author has so convincingly proved, that the vessels, seen by Caesar on the coast of southern England and by him copied when fighting Pompey's lieutenants in Spain (49 B.C.), were not coracles but curraghs. Coracles were no doubt in use as river-craft, for fishing and for ferrying, a task of prime importance in the absence of bridges; but what is significant about Caesar's observation is that it allows us to envisage sea-going vessels. Indeed, Lucan, writing a century later, describes the making of a curragh and specifically comments: "thus . . . on the expanded ocean [did] the Briton sail." Ancient Irish writings teem with references to the seaworthiness of the curragh, which from its lightness and shallow draft was capable, especially when fitted with a mast and sailing before the wind, of relatively high speeds. Entirely characteristic is the tale of St. Brendan, who, early in the 6th century, is said to have sailed to Iceland in forty days, visiting the Shetlands on the way back and ending up in Brittany. Again, the Anglo-Saxon Chronicle refers to three Irish "Scots" who landed on the coast of

Cornwall from a hide-covered boat in A.D. 891, seven days out from Ireland. Testimony from a classical source is provided by the 3rd century writer Caius Julius Colinus, whose rather dry statement makes us view the capabilities of the curragh in a more sober light. "The sea which separates Hibernia from Britain," he writes, "is rough and stormy throughout the year; it is navigable for a few days only; they voyage in small boats formed of pliant twigs, covered with the skins of oxen." Still, when all allowance has been



A CORACLE FISHERMAN OF
THE WYE

made for Celtic exuberance, it remains a fact that by means of these frail craft communication was maintained in early historic, and by inference, in prehistoric times between Ireland, the western seaboard of Britain and Brittany. Further, if we accept the testimony of Caesar, a coastwise trade was maintained by similar vessels off southern England. There seems no reason why, under favourable conditions, journeys should not by this means have been made across the English Channel almost as freely as across the Irish Sea.

Yet we must face the fact that in prehistoric times the carrying trade between Britain and the Continent was mainly in the hands of foreigners. During the Early Iron Age it was almost monopolised by the Veneti,

who dwelt on the coasts of Morbihan and southern Finistère, though other tribes, notably the Morini of Belgium whose coins have been picked up on the beach at Selsey, had a small share. The prowess of the Veneti is known to us today because they happened to cross the path of Caesar. From his account of the naval victory he found it necessary to gain over them at Quiberon Bay (56 B.C.), as a preliminary to his expedition to Britain, it appears that their ships were stoutly built with prows standing high above the water and that they set leather sails. Not a trace of the Gaulish and Belgic ships which must have traded to our shores has survived, nor, in default of ship burial, a rite for which there is no evidence in Early Iron Age Britain, is it easy to see how they could have done. The same applies to those ships from foreign parts which we know must have visited us in periods even more remote. There is

plenty of evidence to suggest that in Neolithic times and at the dawn of the Bronze Age maritime activity reached its zenith in prehistoric Europe; the diffusion of the idea of collective burial in rock-cut and megalithic tombs, the spread of early metal forms like the halberd and the trading of exotic trinkets, such as the faience beads noticed in the last chapter, are only a few examples which might be quoted to illustrate how closely knit together was the whole sea-board of Europe from Iberia to Scandinavia. Beyond the fact that the voyagers were men of higher culture than those among whom they moved and that they must have come from the Mediterranean, we know disappointingly little about them or the boats they sailed. Yet, if we reflect a moment on the evidence likely to be available to archaeologists of the distant future about the ships of the European traders who opened up the coast of West Africa, we need hardly feel surprised. A few trinkets and some bottle glass may mark the trail, but of the ships themselves no trace would be found.

VII

HILL-FORTS

HILL-FORTS are at once among the most impressive and informative of our prehistoric antiquities. They impress by their mere size, by the height of their ramparts, by the depth of their ditches, by the extent of the areas they enclose, and frequently by their commanding position. The disproportion between their immensity and the relatively low stage of development attained by the communities responsible for them shows that in their day they must have fulfilled a need of overwhelming importance. Historically the English hill-forts belong substantially to the Early Iron Age, those of northern Wales to the period of the Roman occupation. Their economic and social significance is still debated, but their primary purpose as defensive works is not to be doubted.

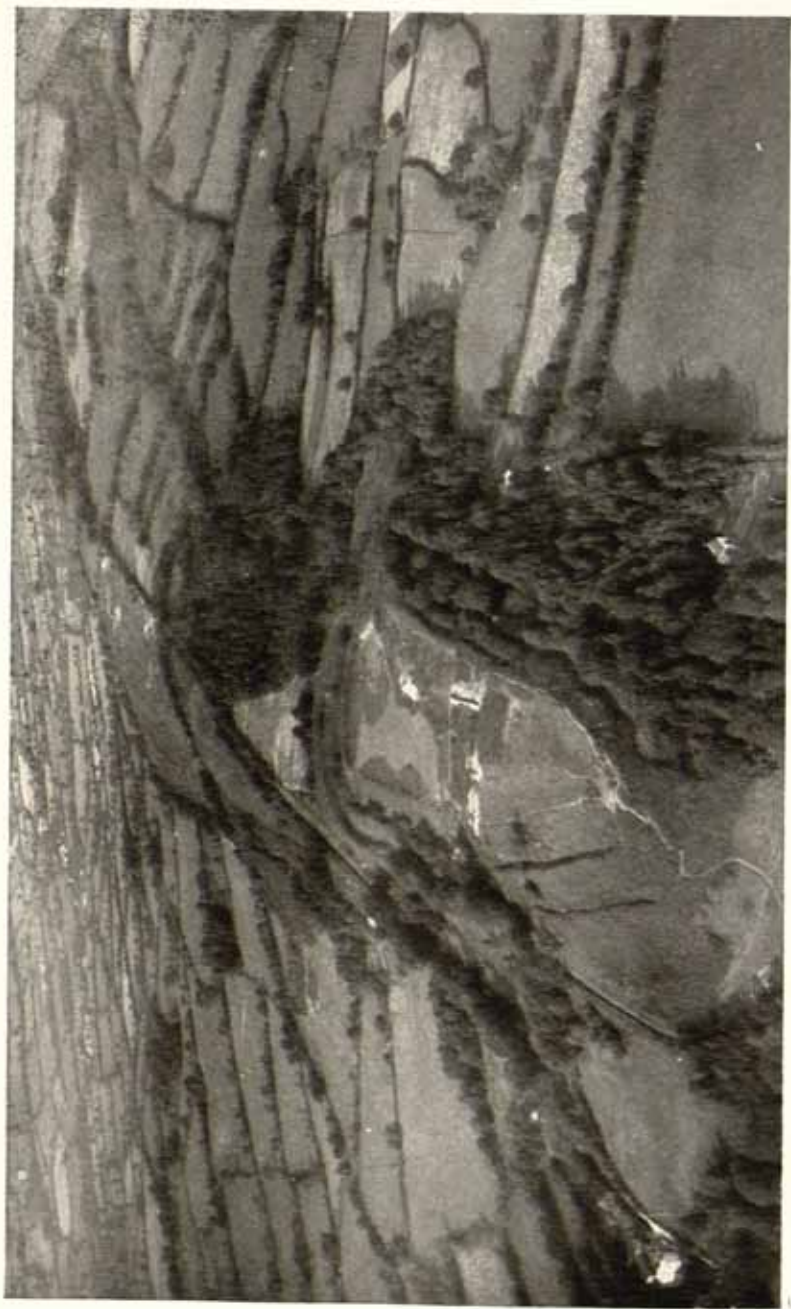
Before discussing more fully their history and the role they played in the social life of their times a few remarks may be offered about hill-forts as military works. Their defensive character cannot be stressed too often. In this respect they offer a complete contrast to the outposts of an advancing imperialism. Whereas the typical Roman fort was but a forward post of an organised system, connected by road and sea with a definite base, the prehistoric hill-fort, although not without some relation to its neighbours, stood alone as an entity. Again, whereas the forts were set in valleys or on open ground, easily approached by road, the hill-forts were placed so as to be as difficult of access by enemies as possible. To achieve this, reliance was placed partly on physical obstacles and partly on securing an uninterrupted view of surrounding country and an unbroken range of fire for missiles, conditions which could only be fully realised by defending a more or less isolated eminence (71, 72). It would be a mistake to imagine that altitude was of itself a determining factor. In the mountainous country of North Wales hill-forts are rarely found above the 1,000-foot contour. Even in the rolling chalk country of Sussex and Wessex hill-forts are by no means restricted to the highest ridges of the downs. More important than height above sea-level were the facts of local topography, which often made an isolated hill or spur of comparatively low altitude more suitable than what might at first have appeared more obvious locations. One has to remember that the range of missiles



71 MALVERN HILLS: Iron Age hill-fort



72 BRATTON CASTLE: view from the ramparts



73: HEMBURY HILL-FORT from the air

during the Early Iron Age was restricted to the distance a man could sling a pebble or hurl a spear, and further, that economic as well as purely military considerations may have played some part in the selection of sites.

Early man was no more anxious to indulge in superfluous hard work than his modern heirs. So we find that where natural defences were available he contented himself with these, supplementing them by artificial works only where necessary. In Wessex, where the majority of English hill-forts is found, nature was grudging in this respect, but the few opportunities afforded were early exploited. Hengistbury Head is a case in point. Defined to the north by Christchurch Harbour and to the south by the sea, all that was necessary to convert the headland into a stronghold was to cut off the narrow approach from the west. By throwing up a couple of banks and ditches an area several hundred acres in extent was effectively isolated. Butser Hill, overlooking the London-Portsmouth road near Petersfield, is another example. The hill-top, roughly defined by the 800-foot contour, is surrounded by a drop of several hundred feet on all sides except the south, the approach to which from Hillhampton Down is cut off by a single bank and ditch. Instances are more numerous in stony regions with more pronounced surface relief. Thus at Worlebury, which nobly crowns the seaward end of Worle Hill, a limestone ridge projecting into the Bristol Channel immediately north of Weston-super-Mare, the defenders were able to save the labour of raising ramparts on the northern side because there a steep declivity gave ample protection. At Leckhampton above Cheltenham and at Bredon Hill, Overbury, in the same county, two sides were amply defended by nature, while at Lydney, Monmouth, the promontory had only to be fortified artificially on the north and at the north-east corner. Natural strongholds improved to varying degrees by the hand of man abound in North Wales; to mention only two well-known sites, steep cliffs defended the east and west both of Dinorben and of the huge Y Corddyn, while only the south of the former and the north of the latter required powerful artificial works. As a general rule, however, it was necessary to defend the whole site by artificial means, though often some sectors required stronger works than others. Thus, at Mount Caburn, magnificently placed to dominate the valley of the Sussex Ouse, but approached relatively easily from the north, the earth-works were doubled on the vulnerable sector. The builders of Hembury, the finest hill-fort in Devon, surrounded the

whole of their site by two ramparts, but recognised the superior strength of the eastern and steepest side by omitting to carry round it their third line of defence (73). In every hill-fort the entrances were the weak points. Consequently we shall find that as the art of fortification developed increasing attention was paid to strengthening this feature.

The very considerable number of hill-forts which have in recent years been tested by excavation—not one single one has been completely investigated—makes it possible to obtain a fairly clear idea of their history and at the same time to study details of their structure invisible on the surface. It is easy to form quite a wrong idea of what these ancient strongholds were like by gazing on their ruins. We must not allow the scree-strewn slopes of Worlebury or Tre' Ceiri to obscure the trim stone walls of which the lower courses lie buried beneath the tumbled mass (74); nor, on the other hand, should we be deceived by the smooth profiles of downland banks and ditches into forgetting that what we see are the eroded and silted vestiges of once formidable defensive works. To correct this impression it is necessary to look below the surface and see something of what the spade reveals (76).

Perhaps the best way to understand the principles underlying the construction of hill-forts is to try and imagine how their builders set to work. In the case of earth-work defences thrown up by the Iron Age A people we are greatly helped by the survival of an unfinished example on unploughed downland at Ladle Hill, Hants. (77). It is evident that after choosing a suitable site the first business was to mark out the course of the ditch from which the rampart material was to be obtained, and which itself played an important part in the scheme of defence. An early stage in the work is preserved at Ladle Hill at points to which the main ditch was never extended, in the form of a shallow setting-out trench. How the course of this was originally traced we can only guess, but it was probably defined by a plough furrow. The next stage was to enlarge the ditch and so obtain material for the bank. The discontinuous character of the Ladle Hill ditch suggests that this was done by separate gangs; the later stage, when the intervals between the separate quarries would be removed and the profile of the ditch carefully graded and trimmed, was never reached. One of the main problems facing the builders of chalk ramparts was to prevent them slipping back into the ditch, while at the same time securing as steep a slope as possible. Of the various methods available,

the simplest was to arrange the excavated material in such a way that a firm core of relatively large blocks was heaped up near the edge of the ditch. The turf, humus, and loose surface chalk removed from the first few spits would accordingly be dumped well back, ready to be banked against the chalk blocks quarried from the lower levels. At Ladle Hill we see the process arrested half-way; the chalk core forms an irregular bank, behind which can be seen small dumps of loose surface material which for more than 2,000 years have waited to be added for the completion of the rampart. Recent excavations at Quarley Hill showed that there the same method was followed, the only difference being that additional surface material required to heighten the rampart was obtained from scrapings within the defended area. A refinement observed at St. Catherine's Hill and elsewhere was the use of turf to stabilise successive tips of material as they were dumped on the rampart. More elaborate was the device of a timber revetment by which the heavy chalk blocks were contained behind a wooden wall. The post-holes of the main timber uprights of such were found during the excavations at Cissbury, while traces of a stronger version with two rows of verticals were recovered at Uffington Castle (78), the Caburn, and in the original Iron Age rampart at Maiden Castle, Dorset. To an enemy, defences of this kind must have been very unpleasant indeed to tackle, for, having scrambled up the inner slope of the ditch, an attacker would find himself on a narrow berm with a vertical wall ahead on which the defenders stood at a considerable vantage.

Hill-forts erected in a stone country naturally show methods of construction adapted to the different material. The fact that dry-stone walling is a common feature of hill-forts erected by the Iron Age B people of the south-west is due primarily to the nature of the country settled by them. The B people built plenty of hill-forts with earth-work defences, of which Hembury is an outstanding example, and there are instances where A people found themselves on limestone and built a stone-walled hill-fort like Chastleton, Oxon. Owing to the sharper relief the proportion of promontory hill-forts is higher in the south-western B than in the A territory, though contour camps are still the commoner. Outstanding examples of the former are Lydney, Bredon Hill, Leckhampton, and Worlebury, while of the latter Llanmelin in Monmouthshire and the three Somerset sites, Cadbury Castle, Dolebury, and Ham Hill are particularly well known. Among the details of dry-stone construction

worthy of special comment are the horned and inturned entrance at Leckhampton, designed to give maximum flanking protection, and the great north wall of Worlebury, consisting of a rubble core battered and faced with built stone, reinforced on either side by one or more stone dykes, with an overall width of up to 38 feet.

In the extreme south-west Cornwall abounds in sites from great hill-forts like Castle-an-Dinas with three and in places four earthen ramparts enclosing an area 850 feet in diameter, to small stone-built forts and defended promontory sites, but few of these can be precisely dated. The best explored and one of the few closely dated examples is Chûn Castle, which from its high hill dominates much of the Land's End district. The extraordinary strength of the defences, which comprise two dry masonry walls faced with large granite blocks, each with an external ditch, may in part be due to the sea-mist common in the district under cover of which surprise attacks might be made. The arrangement of the entrance exposing an enemy to a deadly flanking attack at close quarters shows that the defenders wished to leave nothing to chance. Since the walls were dry-built their outer surfaces were made with a batter. How tall they were originally, we cannot say, although a hundred years ago they still stood up to 12 feet in height. Within, irregularly built stone huts were arranged against the inner face of the defensive wall, together with a furnace accompanied by iron and tin slag, and a well. Among the pottery were sherds of red Mediterranean ware, some of them parts of wine amphorae, together with incised pottery and sherds stamped with a duck design, of a type known from northern Portugal, north-western Spain, and western Brittany. At one time the Cornish "duck" pottery was referred to the 3rd century B.C., but many archaeologists now date it to the late 2nd century.

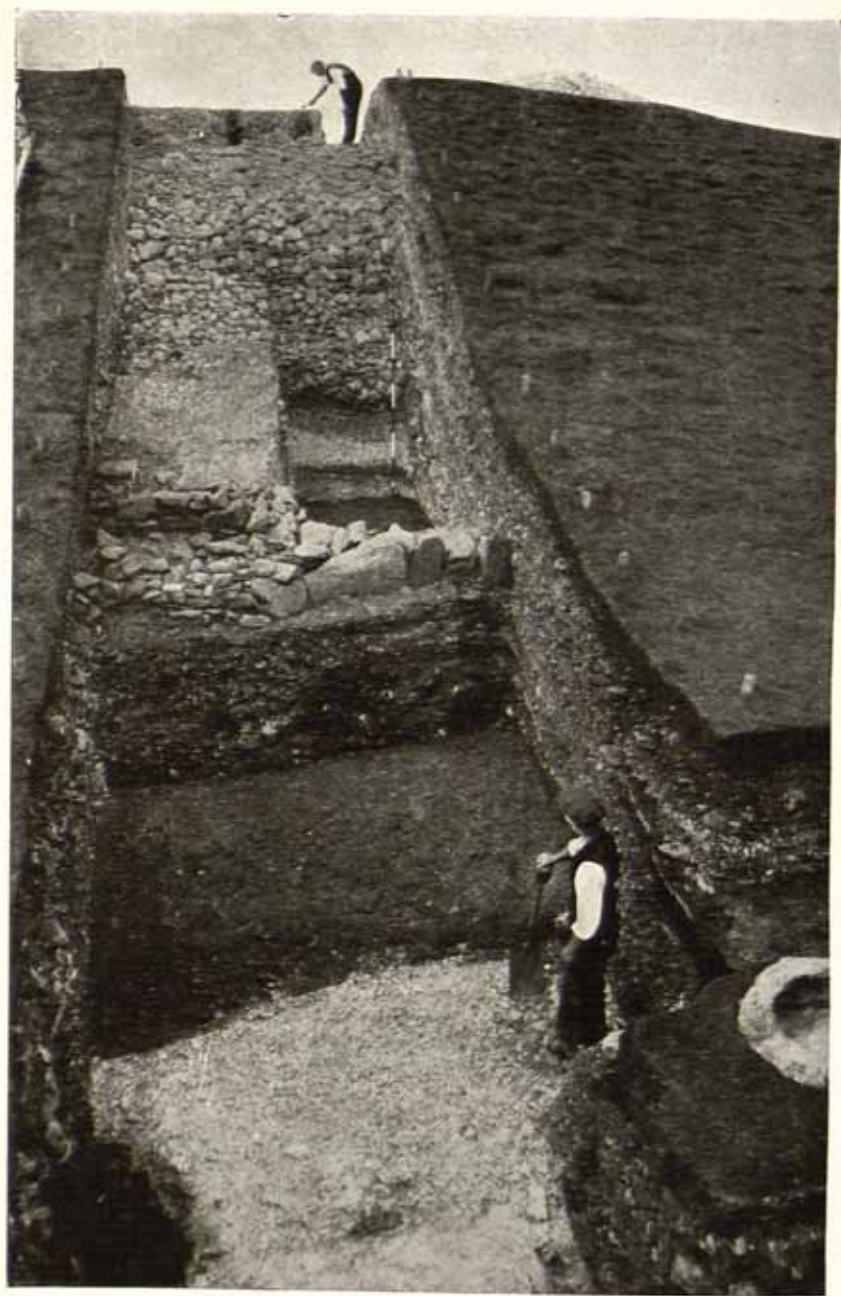
The entrances of hill-forts are always liable to be interesting, because as the weakest points in the defences they, more than any other part, challenged the ingenuity of their builders. One result of this is that they were often reconstructed as notions of defence developed, and so afford clues to the stages through which individual hill-forts have passed. Similarly, by correlating the evidence from a number of sites it is possible to arrive at a general sequence. Thus the simplest type of entrance, a mere gap in the bank and ditch, well exemplified at Figsbury, Wilts., was employed by the Iron Age A people when they first began to build hill-forts. At Lidbury it was found that a simple entrance of this kind



74 WORLEBURY: the tumbled walls



75 MAIDEN CASTLE: the ramparts



76 MAIDEN CASTLE: cutting through the inner rampart

had been modified already at an early stage of the settlement by filling up a stretch of the original ditches and throwing forward locally the line of the earthwork, which, at the point of entry was slightly inturned. The object of this was, of course, to expose an enemy trying to break in to attack from both flanks. The device of setting the entrance slightly askew must have extended the ordeal of anyone trying to force a passage by prolonging the distance over which he would have to repel flank attacks. Both methods were combined at St. Catherine's Hill, Hants., a work dating from the second stage of the Iron Age A settlement. Here excavation showed that the inturned ends of the ramparts had been faced with clay and retained by a timber wall which may well have been carried to a sufficient height to provide a breastwork for the defenders. At the eastern entrance of Maiden Castle, Dorset, we find yet another device in the shape of hornworks, thrown out in front (80). The Maiden Castle entrance is particularly notable, too, for its double portals, each set askew and flanked by timber works. In the final phase of the site, when the ramparts were multiplied, the hornworks were doubled.

It is not yet possible to be sure at what stage of the Early Iron Age the construction of hill-forts began, but it is suggestive that remains dating from the earlier phase of this period are often found on sites subsequently fortified. Sometimes, as at St. Catherine's Hill, the Trundle, and the Caburn, these take the form of potsherds and other loose finds, sometimes of post-holes belonging to earlier enclosures. Thus at Thundersbarrow Hill, behind Shoreham, an enclosure of trapezoidal form could be traced within the contour hill-fort of a later generation, while the oval defences on Quarley Hill, Hants., followed the course of an existing palisade, traces of which survive in filled-up form at the entrances to the hill-fort. When hill-forts were constructed during the earlier stage of the Iron Age A culture they were simple in plan, often quadrangular, though with rounded corners, as at Hollingbury, near Brighton, Liddington Castle, and Lidbury, Wilts. In this they recall the cattle enclosures mentioned in an earlier chapter, though in size they are sometimes considerably larger, Lidbury enclosing as much as 8 acres.

The construction of hill-forts must have involved a tremendous effort on the part of contemporary society. To take but one example, it has been calculated that the earthworks of the 60-acre camp at Cissbury involved the quarrying of 35,000 cubic yards of chalk, which had then to be lifted from the ditch and systematically built into the rampart; in

addition the timber required for the retaining wall had to be felled and prepared, the 15-foot main uprights alone numbering from 8 to 12,000. These figures become all the more impressive when it is realised that at the height of the Iron Age in southern England a hill-fort served only quite a restricted area of country, and that the defences were in some cases doubled, trebled, or even quadrupled. In relation to the standard of economic wealth prevailing at the time the efforts of the hill-fort builders can only be compared with those of modern tax-payers in face of rearmament programmes. Such a comparison indeed is apposite. Hill-forts were able to command so drastic an economic sacrifice precisely because they were primarily defensive works of a military character. Again, like rearmament programmes, phases of hill-fort building were exceptional interludes, the product of exceptional times. It should never be forgotten that the people who built hill-forts were the same ones who dwelt in peasant communities, cultivated their fields, and herded their cattle. From the work already done it appears likely that hill-forts were erected or their defences strengthened in response to troubles interrupting for quite brief periods a long reign of peace. That hill-fort construction was mainly conditioned by such factors as the influx of immigrant peoples, coming at fairly long periods of time, is proved by the indications of long periods of neglect interrupted by spasms of activity—"evidence for war and peace" as it is aptly described by the excavators of St. Catherine's Hill—found on most sites investigated by trained observers. The phenomenon of unfinished hill-forts, dramatically exemplified by Ladle Hill, suggests a rearmament programme rendered superfluous by circumstances; its frequency is significant. On the other hand, there is gruesome evidence to show that defences were sometimes repaired in time, though not always sufficiently strongly to withstand the onslaught of the enemy. In the inner entrance of Bredon Hill camp remains of fifty persons, mostly young men, were found as they had fallen in their last struggle, except that some had been barbarously mutilated with hands, legs, and heads removed. When the Romans stormed Maiden Castle they slew many of the defenders, though they allowed them decent, if hurried, burial.

The time has not yet arrived when we can define with confidence the various waves of rearmament which at different times swept over Iron Age Britain; still less is it possible to interpret each in terms of folk-movements or political events. Certain broad correlations can, however, legitimately

be hazarded. Thus it may well be that single-ramparted hill-forts, such as St. Catherine's Hill, Cissbury, and the Trundle, reflect native resistance against the inroads of those warrior bands from the Marne who introduced Middle La Tène culture to Britain in the 3rd century B.C. It is a striking fact that even isolated farms, such as Little Woodbury, show signs, in the form of hastily improvised and incompletely finished defences, that at this time the peaceful lives of their inhabitants were clouded by fear of menace from without. A new style of fortification, by which defence in depth was secured by multiplication of banks and ditches, made its appearance in Wessex and the south-west towards the end of the Iron Age. Good examples of hill-forts built or remodelled on this principle include Hembury, Cadbury Castle, Ham Hill, and Maiden Castle in its final stage, when the defences covered 50 acres or rather more than the entire area enclosed (79). It has been suggested that fugitive leaders, displaced from Armorica by Caesar's conquest (56 B.C.) and seeking to defend themselves in their asylum, may have been responsible for this innovation. The arrival of the Belgae also gave rise in one way or another to numerous hill-forts. Not only did it stimulate hill-fort construction by native people in areas marginal to the invasion, for example Willbury, Arbury Banks, and Wandlebury in the Cambridge region, a few sites on the Wilts. and Berks. downs, and Oldbury, Kent, but it drove Iron Age B people, displaced by the westward thrust, into the Marches, and ultimately the northern counties of Wales.

The military importance of hill-forts has been sufficiently emphasised; what is more debatable is their role in economic and social life. It has been suggested that they were "cities" which "served their districts in the capacity of market towns," and many contemporary writers appear to work on the assumption that the hill-forts were permanently occupied. The older theory that they were primarily refuge-places, to which people normally living elsewhere might repair in time of stress, is one, however, which has much to commend it. The probability is that no one explanation will suffice for all our hill-forts. Meanwhile it needs to be recalled that it is only from a study of the nature and intensity of the settlement material within a camp that a valid estimate can be formed of its social and economic status. This will never be possible until funds are available for excavating the interiors of settlements in their entirety.

When the turf and humus are stripped from the interior

of a hill-fort the most striking features revealed are more or less circular pits sunk into the underlying rock, in every way comparable to the storage-pits characteristic of Little Woodbury and other Early Iron Age farms and settlements. At one time archaeologists cheerfully accepted these as pit-dwellings, an inherently improbable explanation, which close study of their infillings has entirely confuted. The hearth and settlement material found in the pits is now recognised to have been shot into them together with the rubble obtained from sinking fresh ones: far from proving that the pits were inhabited, the nature of the infillings only goes to show that after their brief period of usefulness for storage they were discarded and filled up with anything that came to hand. The fresh and unworn condition of the sides and floors of those cut in the chalk is a further argument, if one were needed, against their use as dwellings. The full significance of the modern interpretation only becomes apparent when it is remembered that the effective life of a storage-pit, as determined by bacteriological action, is not more than five years. There is thus an obvious relationship between the number of pits on a site, the number of people living on it and its duration in time. At the Little Woodbury farmstead approximately 360 pits have to be distributed over a period, which, to judge from the number of reconstructions and from the development of the pottery, probably extended to 300 years. If each pit lasted for 5 years and the population remained at much the same level throughout, this would give an average of 6 pits in use at any one time.

It is difficult to work along similar lines in the case of hill-forts, because it is rarely possible to estimate the number of storage-pits. All the same the application of the Woodbury results to those hill-forts for which there is fairly definite information is distinctly suggestive. Thus the 11 pits recovered as the result of extensive trenching at Lidbury might imply one farmstead lasting for 10 years, two farmsteads for 5 years, or possibly a larger number for a shorter time; the 55 pits belonging to the second stage of the Caburn give anything from nine farmsteads for up to five years to one farmstead for 45; or, again, the 100 pits at Worlebury could imply sixteen farmsteads for 5 years or one farmstead for 82 years. Now it is obvious from the scale of the hill-forts that they cannot have been intended to shelter the inhabitants of a single or even a few farmsteads, so we must conclude that they were meant as refuges for whole communities during times of stress. The large areas enclosed by hill-forts are no



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77 LADLE HILL: an unfinished hill-fort



78 UFFINGTON CASTLE AND WHITE HORSE

doubt explained in part by the fact that they were intended to shelter flocks and herds as well as human beings. In this respect the large camp on Quarley Hill is significant, as it is aligned exactly on an earlier cattle enclosure, itself placed at the junction of a number of separate grazing areas defined by running banks and ditches.

If hill-forts were the emergency refuge-places of village communities and their animals, as Rybury might be for All Cannings, it is easy to explain the otherwise extraordinary disparity between their dimensions and the traces of settlement found within. It also accounts for the unfinished state of many hill-forts, which were sometimes never occupied at all. It is of the nature of rearmament programmes among peaceful communities to be undertaken in a rush at the last minute; only too often it was too late. The emergency explanation also solves the difficulty presented by the absence or rarity of house remains on hill-fort sites. Obviously, if only for temporary occupation, solidly constructed houses would have been uneconomical. It has to be remembered, also, that winter warfare is a modern practice; light shelters would have been sufficient during the more genial seasons to which warlike activities were probably confined during the Early Iron Age.

The explanation outlined above, while it applies to most of the hill-forts of Wessex and contiguous regions, is not meant to cover all hill-forts. It seems fairly certain that the ramparts of Hunsbury, the Northamptonshire hill-fort, sheltered a community of miners and metal-workers. Again, it may be that fugitive chieftains, displaced by Caesar, attempted to maintain in Britain the *oppida* of their native Gaul. It has been argued with some cogency that the hill-forts of North Wales were countenanced and even encouraged by the Romans as a native defence against marauders sailing from Ireland in their currachs, though whether they represent hill-top settlements is open to question. Hut-circles are found within the defences, but such could be built quickly and would be needed on those boisterous heights even for a short stay. The rarity of finds in the Welsh hill-forts is notorious.

As earlier stated, the coming of the Belgae stimulated hill-fort building among the native peoples who opposed them, but within the regions over which they established dominance hill-forts gave place to lower lying centres defended by screens of protective dykes, like those at Camulodunum and near Verulamium. The petty chieftain or village headman gave way to the ruling prince.

VIII

BURIAL

ANCIENT graves have always been one of the richest sources of prehistoric antiquities. That this is so is due to early man's belief in a life after death and to the practical way in which he expressed his faith. Ever since Upper Palaeolithic times there is evidence for ceremonial burial and the provision of grave goods for use in the next world. The oldest burial yet found in Britain was uncovered over a century ago in the Upper Palaeolithic deposits of Paviland Cave (27) by Dean Buckland. Although the learned author of *Reliquiae Diluvianae* mistook the sex of the individual concerned and post-dated the "Red Lady of Paviland" by many thousands of years, his description tallies with numerous finds in the French caves. With the skeleton—in reality that of a young man of twenty-five—were parts of an ivory armlet, a number of rods of the same material, and a couple of handfuls of shells (*Nerita littoralis*), the whole being enveloped in powdered red ochre, symbolic of blood.

One of the most striking developments of Neolithic times was the diffusion throughout much of western Europe of tombs built of megalithic masonry, resembling in plan the subterranean rock-cut tombs of Mediterranean lands. The British Isles shared in this to the full, lying athwart the sea routes by which megalithic tombs were spread along the Atlantic sea-board. Within the limits of England and Wales, however, megalithic tombs of the form most widely spread in Europe, those having a single burial chamber approached by a well-defined passage, are comparatively rare. Our most elaborate tomb of the basic passage grave form is Bryn Celli Ddu in Anglesey, a round cairn slightly indented at the entrance to the passage and covering two central slabs, one incised with a meandering pattern, surrounded by a circle of free-standing stones and a broad trench in which were set two rows of contiguous slabs (81). Unfortunately nothing was found in the chamber at the time of its recent exploration. The tomb as a whole compares most closely with passage graves in Brittany. On the other hand, the famous passage grave at West Kennet is shown by the nature of its covering mound, long and with its functional end broad and higher, to belong to that most English group of megalithic tombs, the chambered long barrows of the Cotswolds. The



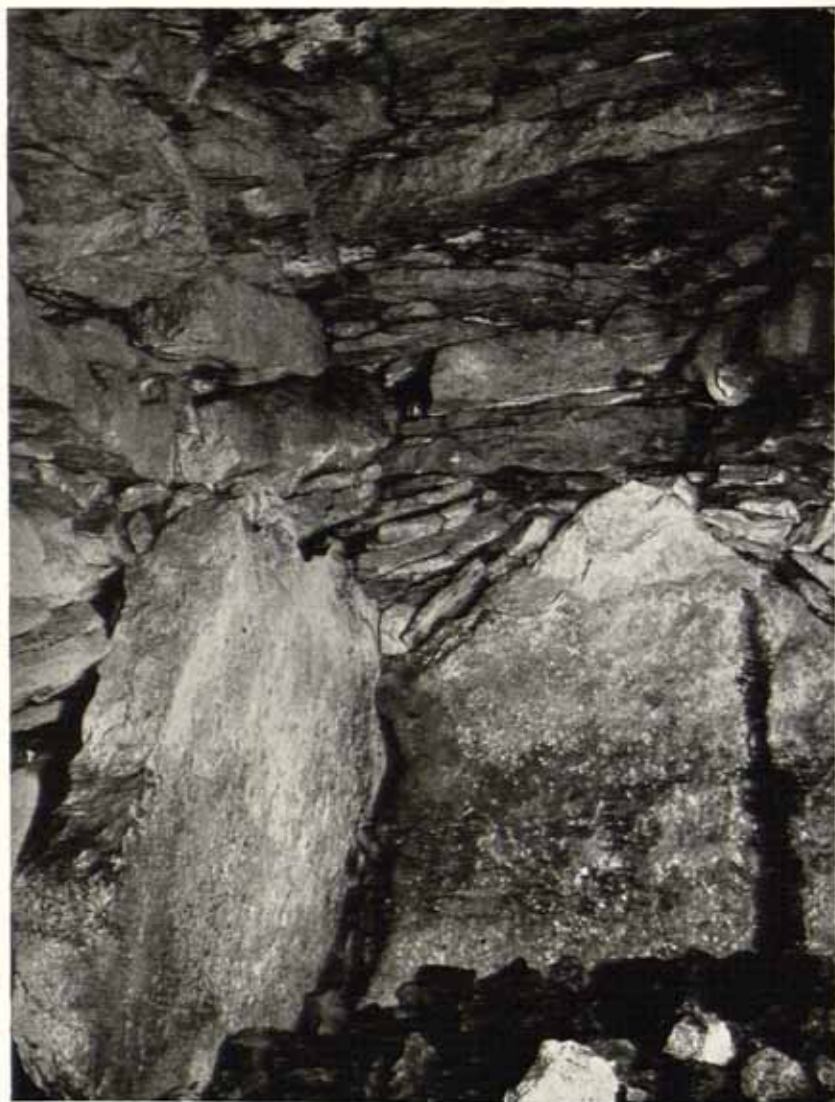
79 MAIDEN CASTLE: the hill-fort from the air



80 MAIDEN CASTLE: the eastern entrance, from the air



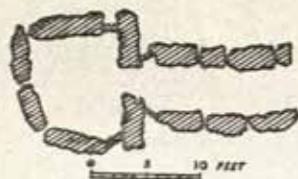
81 BRYN CELLI DDU: looking into the passage



82 STONEY LITTLETON: inside the chamber (flashlight)

remains of five adults and an infant, accompanied by Peterborough and Beaker sherds, were found in the chamber, presumably dating from the last phase in the use of the tomb.

The finest of these chambered tombs have one or more pairs of side chambers or transepts. They may well have arrived from north-western France, where analogous forms occur in Morbihan and the Loire Inférieure, by way of the Bristol Channel, on either side of which, both in Gower and in the Cotswold-Severn area, the surviving examples are concentrated. In building a tomb of this kind the chamber was the first to be set up, thin slabs of stone stood up on edge being used for the purpose; gaps were filled with dry-stone walling, and the whole was roofed by overlapping slabs in the corbelling technique (82). The structure was enclosed for protection in an elongated wedge-shaped mound built around by dry-stone walling, in turn revetted by courses of inclined slabs. Access to the chamber, which was placed at the broad end of the mound, was



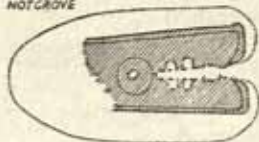
PLAN OF THE BURIAL CHAMBER OF THE WEST KENNET LONG BARROW

obtained by way of a funnel-shaped forecourt formed by the inturning of the marginal dry-stone walling. As a rule there is an antechamber, defined by transversely set slabs, at the entry. Except when unsealed for burials, the tomb was effectively closed by plugging the forecourt with a stone packing. The number of transepts varies from the single pair of Nympsfield (5) or Wayland's Smithy to the three pairs of Nempnett Thrubwell and Stoney Littleton. Where there are two pairs these may be separated as at Notgrove, or contiguous as at Uley. A feature worthy of special notice is the rotunda at Notgrove, a round drystone construction built around a small megalithic cist in line with, but quite distinct from, the main chamber.

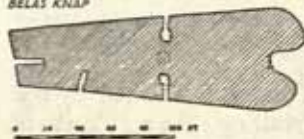
Examples with three transepts are an elaboration of the introduced form, but insular development mainly took the line of degeneration. While the wedge-shaped long barrow with its horned forecourt at the broad end persisted, the megalithic structures which it masked underwent great changes. Sometimes, as at Tinkinswood (89), the grave, while shrinking to a small rectangular chamber, continued to fill the position formerly occupied by the gallery. More often, however, the chambers were inserted into the side of the barrow, the former position of the entrance being marked by

a "dummy portal," a couple of uprights with a lintel and blocking stone, features well illustrated by the northern end of Belas Knap (83). The survival of the forecourt and the provision of a false entrance only serve to emphasise the ritual importance of the broad end of the barrow in the original monuments. It was of course through the entrance that successive corpses were borne to their resting-place in the tomb, and it was in the forecourt between the horns that the ceremonies antecedent to this event probably took place. As a rule the side-chambers were small enough to roof with a single capstone. They were commonly approached by an ante-chamber between which and the chamber proper there

NOT GROVE



BELAS KNAP



were sometimes placed a couple of upright slabs with semi-circular hollows flaked out of contiguous edges so as to form a more or less circular hole. A recently discovered example in the Rodmarton long barrow was found with its original dry-stone plugging in position (85), showing that the aperture was left open only for the actual insertion of a body. Another detail to be noted in the same tomb is the carefully laid flight of steps (86).

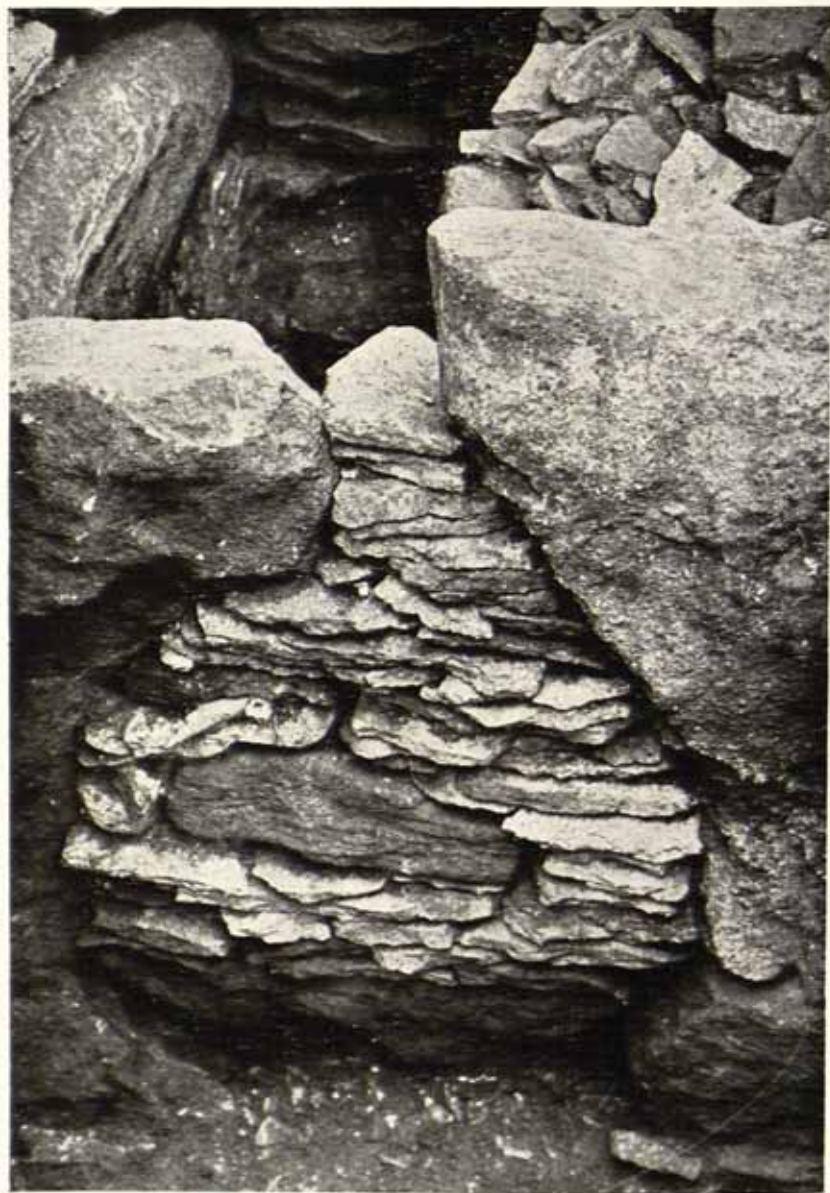
In regions easily accessible from the Irish Sea there are a few gallery graves of the type commonly represented in northern Ireland and in south-west Scotland, having compartments formed by septal slabs. One of the finest is Cashtal yn Ard in the Isle of Man, the chamber of which has five compartments opening on to a paved forecourt defined by a hollow façade of upright slabs (84). At one time the tomb was covered by an oval stone cairn which, banked against the façade, projected in the form of horns on either side of the forecourt, but the material of the mound has long since been robbed for field walls. The Bride Stones near Congleton mark the site of a similar horned cairn covering a long chamber. Others, even more ruinous, are known from Holyhead and from Anglesey. In the Valley of the Medway there is a small group of rectangular chambers under straight-sided long barrows defined by stone settings, closely resembling the Huns' Beds of Drenthe, Northern Germany, and parts of Denmark. The most complete is that at Coldrum. Kits Coty House probably belongs to the same group (87). At present it stands free, but in Stukeley's day traces of the



83 BELAS KNAP: false entrance



84 CASHTAL YN ARD: forecourt and façade



85 RODMARTON: porthole with blocking in position

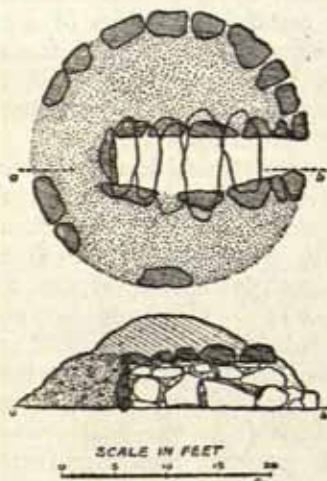
long barrow which once covered the chamber were distinctly visible. Down in the extreme south-west on the Isles of Scilly and in Penwith one finds simple galleries under small round cairns retained by stone kerbs, an advanced degeneration from the basic passage grave.

A word must be added about "dolmens" in the restricted sense of small free-standing chambers covered by a single capstone, if only because they were once accepted as prototypes of the more elaborate forms so far discussed. By the great majority of modern archaeologists they are now accounted for in some cases as ruined, and in others as degenerate, examples of more imposing tombs. Among the former Kits Coty House has already been cited as the remains of a Huns' Bed. The Devil's Den, close by the Bath Road as it crosses Clatford Bottom (88), is almost certainly a ruined tomb of the Tinkinswood type. Polygonal dolmens of the kind so commonly found in

Anglesey, Carnarvonshire and Pembrokeshire, on the other hand, may well be degenerate versions of passage graves, while rectangular ones, like Trethevy (2) and Zennor in Cornwall, may derive from gallery-graves. In any case it seems unlikely that dolmens were among the forms of megalithic tombs originally diffused to us from abroad.

Although much can be learned on the historical side from a study of the morphology of megalithic tombs, their social interest lies in the idea of which they are the architectural expression. In the final analysis

megalithic, like rock-cut tombs, are chambers designed to be opened and closed easily, such as would be needed for the reception of burials over a period of time. That they were in fact used as family vaults is proved by the nature of the human remains found in them. It has been the common experience of excavators to find traces of numerous skeletons in varying stages of disarray. In Britain we have



GALLERY GRAVE, ST. MARY'S, SCILLY

many records of the number of individuals represented in the material from different tombs—thus, there were at least 17 at Nympsfield, 28 at Uley, 36 at Belas Knap, and so on, but accurate accounts of the contents of undisturbed burial chambers are rare. One of the few exceptions is the side chamber recently discovered in the long barrow at Lanhill, Wilts. Constructed of megalithic slabs with a single capstone, it was of such slight dimensions, only 4 feet 8 inches in length and varying in width between 2 feet 6 inches and 3 feet 8 inches, that the seven more or less complete skeletons found within could hardly have been inserted as corpses at one time (89a). On the other hand, the disposition of the skeletons, the one nearest the entrance being articulated, the others pushed together as though to make room for successors, does not support the theory that they were deposited as bones. It seems much more likely that we have to deal with a series of successive burials. The individuals comprised a man of over 50, one between 30 and 40, and another of 30, an aged woman, a woman of between 30 and 40, and a child of from 12 to 13. Expert examination has shown that they were almost certainly members of the same family. In addition, stray bones were identified from two other individuals, a youth of 20 and a year-old baby, possibly vestiges of a previous sequence of burials all other indication of which had been swept from the chamber.

From this it follows that grave goods found in megalithic tombs are likely to belong to the last stage of their period of use. Moreover, their very nature made them more liable than earth-graves to spoliation by early antiquaries. This often makes it difficult to decide who built a given group of tombs, though we may safely attribute those of the Cotswold-Severn and Irish Sea areas to Western Neolithic communities. The Huns' Beds of Kent were the work of a small group of Nordic folk: the remains of twenty-two persons from the Coldrum barrow compare closely with Saxons from the Folkestone cemetery, but the "portions of rude pottery" recovered from the chamber were of Western type.

In regions deficient in stone suitable for megalithic construction, and in a few where it was present, the Western people built long barrows of turf and timber heaped over with subsoil quarried from ditches. Most of these monuments occur on the chalk, centring on the downs of Dorset, Wilts., Hants., and Sussex; there are isolated examples strung out along the course of the Icknield Way, and outlying groups on the Wolds of Lincolnshire and Yorkshire. Externally they



86 RODMARTON: steps into one of the chambers



87 KITS COTY: traces of the long barrow as seen by Stukely

resemble long mounds with megalithic chambers, except where their quarry ditches are visible. In size and proportions they vary considerably, but the Lincolnshire average of 175 feet by 57 feet gives some idea of scale. The original height of the barrows is often difficult to judge, although Giants' Hills, Skendleby, Lincolnshire, must have been at least 12 feet. Their effect was enhanced by the presence on both sides, and sometimes round one or both ends as well, of quarry ditches as much as 12 feet deep. Further, it has to be remembered that when freshly built the chalk covering must have gleamed white against the greensward. The artificial covering of white quartz which originally adorned the great mound of New Grange on the Boyne suggests that the whiteness of chalk barrows had more than an accidental significance. It is not impossible that the surface of such mounds was periodically scoured: the chalk-cut White Horse of Uffington has been kept white for nearly two thousand years.

Of the internal features of earthen long barrows comparatively little is known, but there is nothing to suggest that they covered wooden chambers. In his complete excavation of Wor Barrow, Dorset, Pitt-Rivers found traces of a timber palisade (90, 91); this has sometimes been interpreted as defining a chamber, but its width of 30 feet or more and the absence of internal posts shows that it can only have been an open enclosure, filled in when the chalk and soil were heaped over the funerary area. At Giants' Hills, although its horned forecourt and timber setting recalled megalithic counterparts, there was no sign of a burial chamber, capable of being opened and used for successive burials. With this structural, there goes a profound functional difference between earthen and megalithic long barrows. In the sense that a number of persons were buried in each, both were collective tombs, but the relationship between the monument and the individuals concerned was radically different. Whereas megalithic tombs were designed for the reception of successive burials over a period of time, earthen long barrows were themselves thrown up over human remains previously placed in position, sealing them as for all time. Usually the bones from earthen long barrows comprise crouched skeletons which can only have been deposited as corpses, and scattered over them loose bones from bodies previously buried or exposed. If the corpses were fresh at the time of burial, they would seem to imply some form of human sacrifice for service in the next world, either as male retainers or as wives or concubines, but it is by no means improbable that corpses

may have been dried and kept against the great occasion when the barrow was to be built. At Wor Barrow and Giants' Hills bones and corpses were laid together on beds of chalk slabs within great timber enclosures, scene of the final rites before all was covered by the piles of turf and loads of chalk which formed the material of the barrow.

A new type of "ridge" long barrow, remarkable for its extreme length, has recently been brought to light at Maiden Castle, Dorset. The mound, which was defined by parallel flat-bottomed ditches on either side, was low and of uniform height, some 60 feet in width and no less than 1790 feet in length. The builders were evidently concerned to site the mound prominently and even went to the trouble of changing the axis of their mound to conform to the lie of the land. At the eastern end there were traces of a concave timber revetment, like that at Giants' Hills, and 70 feet within the mound on its central axis was the burial of a man of between 25 and 35 years. From the condition of the bones it appeared that head and limbs had been severed from the trunk shortly after death, while the skull bore traces of fruitless efforts to reach the brain by means of circular incisions!

In certain Yorkshire long barrows there is evidence that after the erection of the mound the bodies and bones were subjected to partial cremation. The arrangement varied in different barrows, but at Westow Canon Greenwell found the cremated remains—three articulated skeletons and bones from four others—resting on a stone pavement along the middle towards the eastern end. Turf and wood had evidently been heaped over the interments, and over this was a ridge-shaped roof formed by inclined slabs of oolitic stone reaching to the top of the mound. The draught was introduced from the eastern end of the mound, for the last 12 feet of which the pavement gave way to an inclined trench reaching a depth of 3 feet below surface level at the edge, where it was joined by a cross trench extending into the open. Reddening of the soil under the pavement and in contact with the roof of the burial area shows that the firing must have been subsequent at least to an advanced stage in the construction of the mound. Although combustion was sometimes assisted by flues it was not always fully effective, as shown by Greenwell's remark that "in the case of the Scamridge and Rudstone barrows the burning gradually decreased in intensity towards the west end of the deposit of bones, where it was found to have died out, leaving them entirely uncalcined." None of the pottery from crematorium long barrows has



88 THE DEVIL'S DEN, CLATFORD BOTTOM, NR., MARLBOROUGH



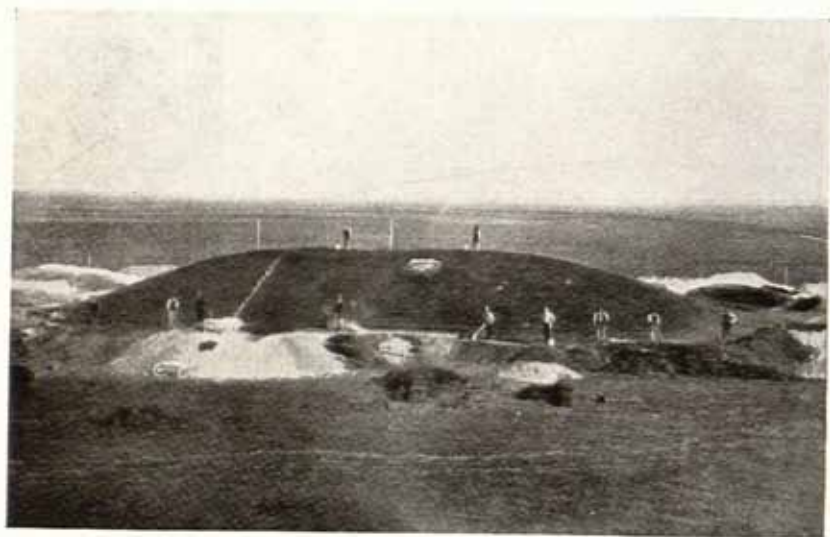
89 THE TINKINSWOOD CAIRN, ST. NICHOLAS, GLAMORGAN. View from forecourt. Note the capstone (40 tons) over the burial chamber



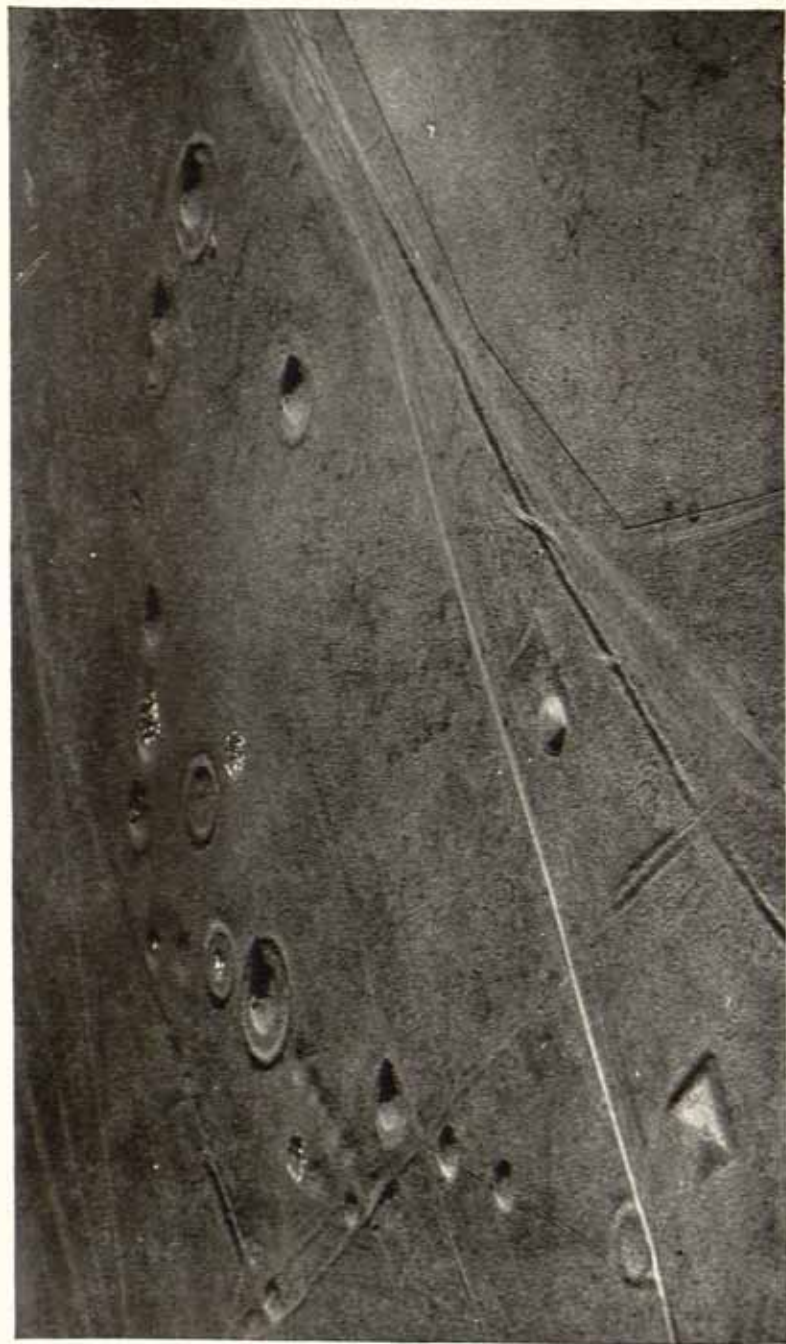
89a. LANHILL LONG BARROW: looking into the family vault.



90 WOR BARROW: after excavation



91 WOR BARROW: before excavation



92 SNAIL DOWN, TIDWORTH: group of round barrows

proved to be of the normal Western ware, and it may well be that they represent a regional and rather late development, a view supported by the occurrence of a similar rite in certain round barrows in the same area.

Apart from the burials in the West Kennet long barrow, which can hardly be regarded as typical, the only tangible evidence we have for the burial customs of the Peterborough people are the disarticulated remains of two adults in a stone cist built against the wall of a rock shelter in Church Dale, Derbyshire. It is therefore reasonable to suppose that they disposed of their dead in one of the many ways which leave no archaeological trace.

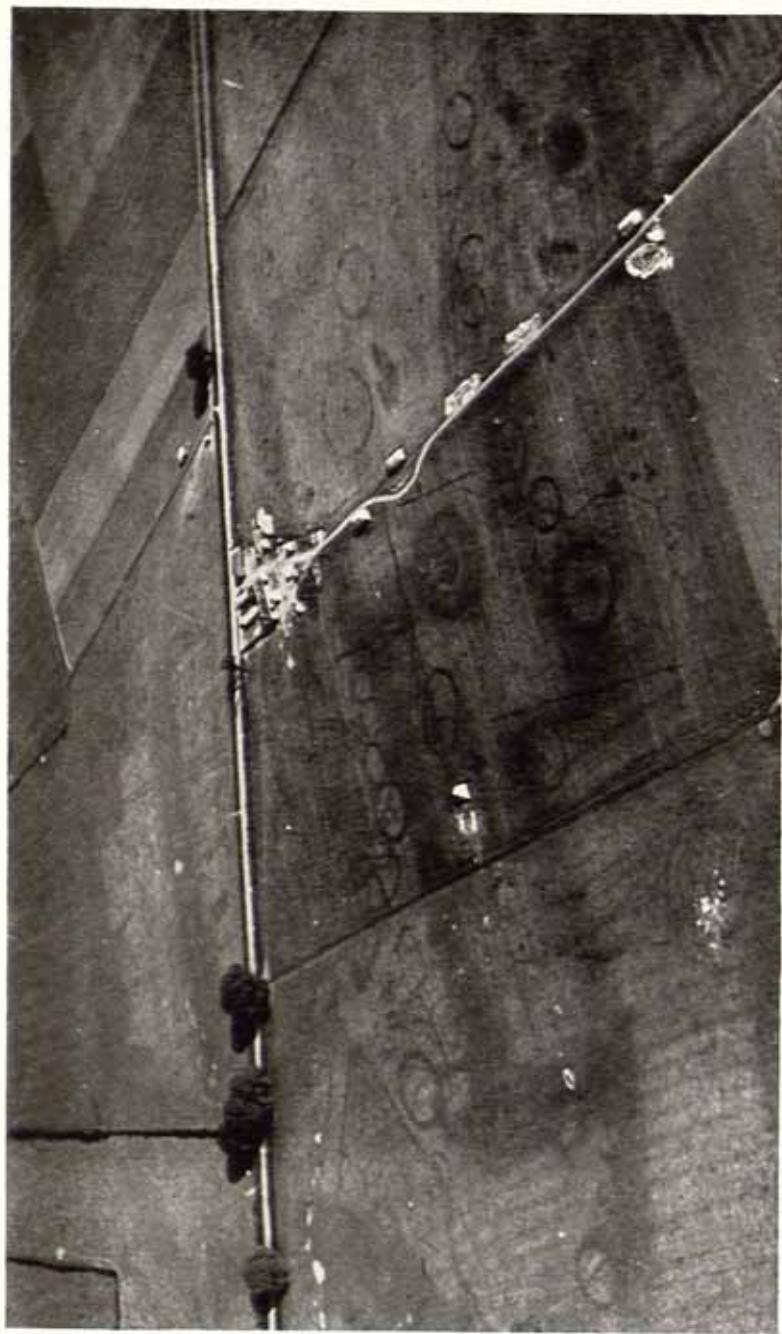
With the Beaker people matters are very different, the great bulk of our information about them having been derived from a study of their burials. In some parts of the country they inhumed their dead in flat graves, such as are only likely to be found by the process of gravel-digging and other commercial excavations (9). Observation of prolific localities has confirmed that the graves were sometimes arranged in cemeteries, examples of which are known from Eynsham and Cassington, Oxon., and Ely, Cambs. But not the least of the Beaker people's contributions to our prehistory was their introduction of the practice of marking burials by circular mounds or round barrows. The round barrow is, indeed, not only the most typical monument of the Bronze Age, but, although vastly diminished in numbers, is still among the commonest of all our prehistoric field antiquities. On the chalk downs, or on desolate moors beyond the margin of existing cultivation, round barrows preserve their original contours but slightly moulded by the age-long processes of erosion and marred only by burrowing animals or the tell-tale depression left by some antiquarian barrow-digger. In many ways they are most satisfying to the eye, silhouetted against the sky, as their builders set them, on some sinuous fold of down. From the air they assume a somewhat macabre appearance like craters on the moon (92). Yet when all surface traces have been ploughed away observation from the air may be the only method of finding them; the ditch and sometimes even the central grave will betray themselves through the deeper colour of the infilling soil, or by extra luxuriant crop growth (93).

In size round barrows vary greatly; they may be as little as from 4 to 5, or as much as from 50 to 60 yards in diameter, while in height they range from a few inches to 20 feet. Their character was strongly influenced by geology. In the

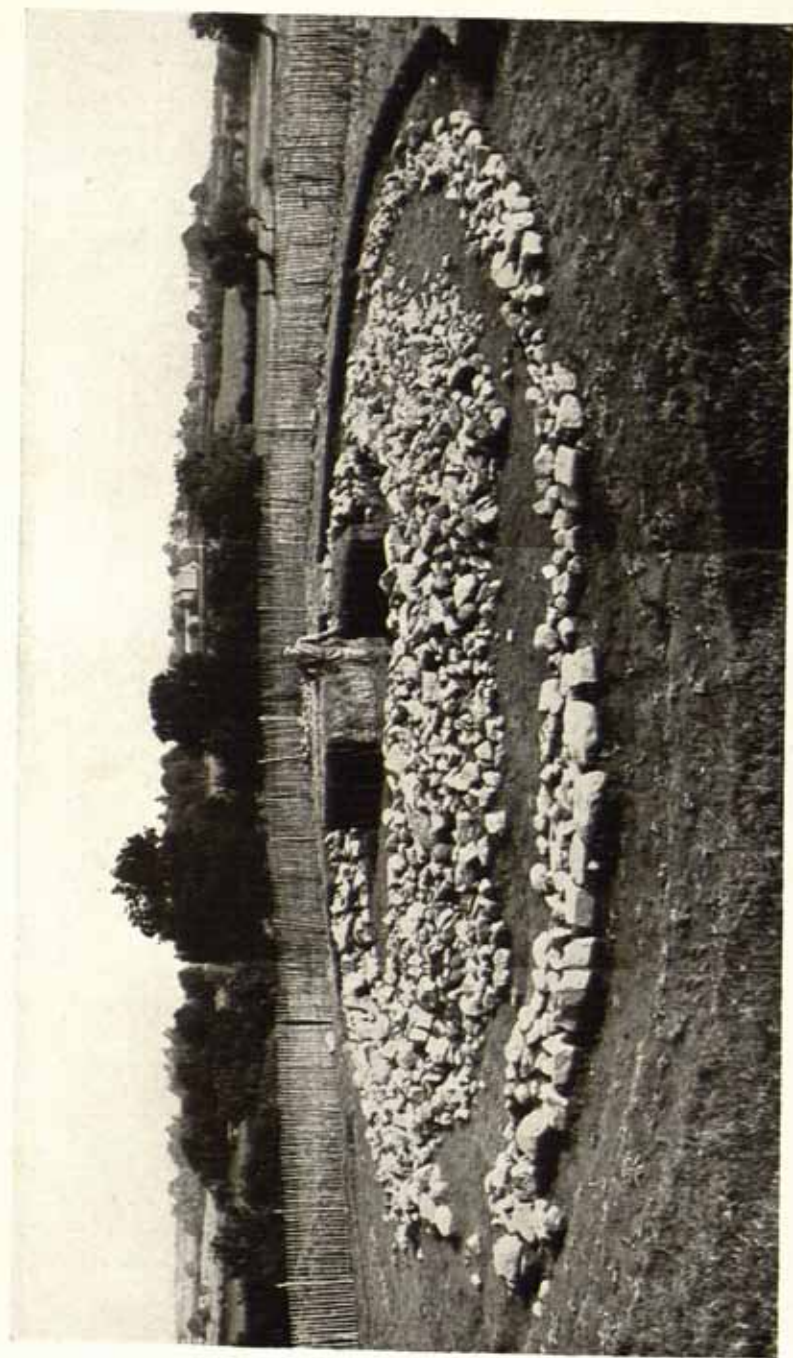
highland zone it was usual to build the mound from surface materials such as boulders and stones. Sometimes, as in a number of cairns in South Wales, Devon, and Somerset, the structure was composite, the core being built of turf or earth, the outer rim of boulders (94). Turf was also used in the construction of barrows in the lowland zone, but here it was usually supplemented by material quarried from an encircling ditch and laid on as a capping. It is certain, though, that the ditch had significance in virtue of encircling the grave as much as in providing material for the mound. The truth of this is evident from the evolution of the English round barrow. In the basic bowl form introduced by the Beaker people, but persisting until Saxon times, the ditch was immediately contiguous; the introduction of a berm between mound and ditch gave rise to the so-called bell-barrows, fashionable in Wessex during the earlier part of the Bronze Age; finally, in the disc barrows of the Middle Bronze Age, the mound was reduced to a mere dump in the middle of a flat circular area, defined by a ditch with a functionless outer bank. The circles of timber posts or stone uprights often found in the barrows of north-east Yorkshire and Derbyshire are further expressions of the same idea. Even cinerary urns themselves are sometimes set in a magic circle.

A feature of the cult of the dead, for which there is yet no convincing explanation, is the presence on covering slabs or cairn kerbs of cup-shaped hollows, sometimes defined by concentric rings. Simple cup-markings are in origin of remote antiquity, having been found on stones covering Upper Palaeolithic burials in France. Similar markings have been noted on the covering slabs of megalithic burial chambers in Wales, such as Trelyffant, Pembrokeshire, and Clynnog, Carnarvonshire, as well as on the lids of Middle Bronze Age cists, like that recently explored at Simondston, Glamorgan. On exposed rocks, in Mid-Wharfedale, particularly above Ilkley, in the Peake District, and in Northumberland they are sometimes found with cup-and-ring marks, such as are found on the Bronze Age cists in Scotland.

At the dawn of the Bronze Age inhumation was the general rule, but it had already begun to give way to cremation while food-vessels were still current. Inhumed bodies were normally buried individually, in marked contrast with practice in the long barrows, though both men and women were fairly often accompanied by children, and the collective burial of adults did occur in rare instances like Greenwell's



93 EYNSHAM: barrow circles



94 POND CAIRN, BRIDGEND: after excavation

barrow XXVIII at Ganton in the East Riding of Yorkshire. In the great majority of cases the dead were buried in the attitude frequently adopted for sleep among modern primitive peoples, the knees drawn up to the stomach in a crouched position. Where the requisite stone slabs were easily obtainable they were commonly protected by box-like cists. An excellent example was found by Lord Londesborough under a round barrow at Kelleythorpe in the East Riding. Here, in a neatly made cist, was buried a man of some consequence. A Beaker was near his ankles, a bronze dagger with traces of wooden handle and sheath near his hips, and on his right wrist an archer's guard of bone with gold-plated studs, the bronze buckle of which was found in place under his fore-arm. A mass of linen was found under the entire skeleton. The hawk's head found between his elbows and knees is probably magical in intent: had it been a bird used for falconry we might surely have expected more than the head. There are many records of oak coffins having been used, especially in the East Riding, though in no case are the remains as well preserved as in the famous Danish finds. The coffin



CIST BURIAL UNDER BARROW
AT KELLEYTHORPE

found by Canon Greenwell under a small clay barrow at Rylston consisted of an oak trunk, 7 feet 3 inches long and 1 foot 11 inches wide, split in two and hollowed out; the exterior was left untouched, but the ends were partially rounded. The Gristhorpe Cliff coffin had a hole in the bottom to drain the liquids of putrefaction. One found recently at Loose Howe, Rosedale, and now in the British Museum, was accompanied by the two halves of a larger trunk carefully shaped to a boat form, symbolic perhaps of the last voyage. In addition to several more from Yorkshire, oak coffin burials have been recorded from Dorset, Wilts., and Sussex. At Dysgwylfa Fawr, Cardiganshire, two oak dug-outs were found within a ring of standing stones at the centre of a round barrow: the larger was empty, but the smaller contained a cremation accompanied by a food-vessel and a flint knife, a good example of the survival of an old usage.

From the fragments of cloth in the Rylston coffin and the few impressions from other burials it is difficult to determine whether the dead were buried in clothes or shrouds. The tall, round-headed man from the Gristhorpe coffin is certainly

said to have been wrapped in a shroud of animal skin fastened by a bone pin at the breast. On the other hand, the frequent occurrence of buttons of amber, bone, or jet, sometimes described as having been found "in front of the upper part of the chest," almost certainly belonged to cloaks, which, as in Denmark, seem to have been worn exclusively by men, probably over kirtles with shoulder straps. No buttons have been found with women, who probably wore a skirt and jacket. The fairly frequent discovery of bone pins behind women's skulls suggests that they wore their hair in buns. The string found by Mortimer behind the skull of an aged woman in a barrow at Garton Slack (barrow 82) was probably used, like the complete one from the Danish Egtved find, to tie the hair. Important differences exist between the grave goods associated with men and women. Among the Beaker people pots were common to the two sexes, but men might be supplied, in addition, with a dagger of flint or metal—one of the former was found clasped in the hand of a skeleton on Acklam Wold (barrow 124)—a stone axe-hammer at the shoulder, and a full archer's equipment—flint arrowheads, stone wrist-guard, and, almost certainly, a bow and other perishable items; women, on the other hand, were more meagrely provided with metal awls and flint scrapers, signs that during life they were busily employed at hand-work. During the full Early Bronze Age certain burials were furnished with extreme richness. An outstanding example is the Bush Barrow, near Stonehenge, which was opened by that famous antiquary, Sir Richard Colt Hoare, in 1808. The inventory of the objects found with the skeleton of the "stout and tall man" buried therein included a flat bronze axe, two bronze daggers, one of which had a handle inlaid with hundreds of fine gold pins, two quadrangular plates of sheet gold, a gold sheath mount, and a ceremonial mace. Nor was such lavish provision curtailed at first by the passing of inhumation: the individuals buried in many of the most famous barrows of the Wessex Early Bronze Age, including the "Gold Barrow" at Upton Lovell, with its gold sheets, beads, and boxes, its gold-plated shale cones and its thousand or more amber beads, were cremated.

By the Middle Bronze Age cremation had become the dominant rite. Barrows continued to be built, but the tendency was to utilise existing ones. The ashes contained in a bag or a pottery urn would be inserted in small holes cut in the material of the barrow. Sometimes after a number of secondary burials had taken place a second ditch would be

cut and the height of the barrow raised. Grave goods were provided, though on a greatly reduced scale. In the Late Bronze Age regular urnfields came into use, the urns sometimes being let into flat ground, sometimes intruded into the material of earlier burial mounds, demonstrating afresh the persistence of sanctity attaching to well-marked places of burial. There is also evidence that, even in regions like Hampshire directly affected by immigration, barrows, low and saucer-shaped and comprising mainly scraped-up material, continued to be built at this time. How far this was due to the persistence of native tradition and how far to absorption of ideas from the South German tumulus culture by our urnfield immigrants prior to leaving the Continent, it is difficult to assess. As a rule the urns are found inverted over the ashes, although sometimes they stand the right way up. Rather meagre grave goods in the form of worked flints, beads, bone needles, and bronze blades continued to be deposited with a fair number of the native hooped and encrusted urns, but as a general rule the cremations of the intensive Deverel-Rimbury urnfield culture were unaccompanied by personal possessions for use in the next world.

Considering how much is known about their domestic sites it is astonishing how meagre is our information about the burial customs of the Iron Age A people. From the scanty, and not always too satisfactory, evidence it appears that the rite was mixed, inhumation and cremation being associated indifferently with flat graves or burial under a round barrow. Children were commonly buried under huts or pushed into disused storage-pits. The frequency with which human bones—sometimes worked into implements or utensils—are met with on Iron Age A sites is consistent with cannibalism or with some form of exposure of corpses. In either case it helps to explain the rarity of burials.

More is known of the burials of the Iron Age B people. The remarkable chariot burials of Yorkshire have already been described in Chapter V. From the West Country we have flat cemeteries like those at Trelan Bahow, St. Keverne, and Harlyn Bay, at the latter of which 130 stone cists were unearthed, each containing a contracted skeleton. The graves of important women were sometimes marked by the provision of a splendid bronze mirror. The beautifully engraved example from Birdlip was found by quarrymen with the extended skeleton of a woman in a stone cist between two others containing men; the woman was further accompanied by two bronze bowls, hammered thin and turned on the

lathe, a silver brooch gilded, four bronze rings, a tubular bracelet of the same material, a bronze knife handle modelled into the shape of an animal's head, and a necklace of large ring beads of amber, jet and grey marble.

In those parts of England settled by the Belgae cremation cemeteries were the rule; indeed, it was upon a study of those at Aylesford and Swarling, Kent, and Welwyn, Herts., that archaeological proof of their invasion was first founded. The poorer graves in such cemeteries consist of round pits 2-3 feet in diameter, sometimes arranged in irregular circles, indicative perhaps of separate families. Generally they were simply furnished with one or two cinerary urns, but the principal grave at Aylesford yielded, in addition to pots, a stave-built wooden bucket containing cremated bones and brooches and bound with bronze bands, the upper of which was embossed with a frieze of stylized horses and motives derived from the classical palmette. Even more elaborately furnished were the two vaults at Welwyn, which produced two bronze jugs, a tankard with bronze handle, a bronze *patella*, a pair of silver cups of Italian make, the silver handle of a footed cup, three bronze masks, a bronze bowl, an iron frame, five large wine amphorae, and three pairs of iron fire-dogs of the type found in similar tombs at Stanfordbury, Mount Bures and Barton, Cambs. Richest of all was the princely burial under a round barrow in Lexden Park, Colchester, which comprised the remains of a chariot, silver-studded chain mail, enamelled studs and discs, bronze plates, handles and hinges and a tray of the same material, a series of bronze statuettes of classical character, including a griffin, a bull, a boar and a cupid, and finally a silver portrait medallion of Augustus, cut from a denarius of 17 B.C., the prized possession of a Belgic chieftain beglamoured by Rome. From the "Red Lady of Paviland" to the Lexden burial is a far cry, but the motive remains the same, to honour the dead and ensure the enjoyment in the next world of possessions favoured during life upon earth.



95 MERRIVALE, DARTMOOR: stone alignment



96 KESWICK: stone circle



97 BOROUGHBIDGE: one of the Devil's Arrows

SACRED SITES

STANDING stones, whether isolated monoliths or grouped in alignments and circles, have probably attracted more widespread attention through the ages than any other antiquities. The people of the countryside and a whole succession of learned chroniclers from Geoffrey of Monmouth onwards have puzzled on their meaning, but, though the stones stand free for all to contemplate, what they signify no man can say. Let it be confessed that scientific archaeology has brought us little nearer to understanding them. Yet it is evident that the erection of stones, sometimes more than 20 feet in height and weighing many tons, can only have been undertaken under the influence of some compelling motive, to commemorate ancestors, encourage fertility, or in some other way to further the vital interests of society. Even if we could visit Bronze Age Britain and study at first hand the rites and practices associated with them, it would be difficult enough to comprehend their underlying meaning: to probe the innermost consciousness of men who lived thousands of years ago by measuring and classifying stones, however meticulously, is manifestly vain. Still, the stones are abundantly worthy of study, even if only as symbols of a religious life which may for ever elude us.

Simplest and most numerous are the single monoliths which abound in highland Britain and in the lowland occur sporadically where suitable stone was available. It may be said as a preliminary that quite a number of stones popularly referred to as monoliths or menhirs are in reality purely natural—glacial erratics or natural “stacks” left by denudation like the Buck Stone, Staunton, and the Longstone, English Bicknor. In a few instances, also, artificially erected stones, which appear to be isolated today, are in reality vestiges of megalithic tombs, alignments or circles. Some monoliths may have been set up to mark boundaries. Others, like the tall one at Tresvonnack, at the foot of which two Late Bronze Age urns were found, the larger containing cremated human remains, may have been erected to mark burials, though it is not always easy to decide whether these are contemporary with or subsequent to the erection of the stone. In the vast majority of instances there is no indication of purpose. It seems legitimate to conclude that the veneration of stones as such, a veneration

which in Brittany has survived the introduction of Christianity, contributed in some degree to their erection.

Although we have nothing to compare with the magnificent alignments of Carnac, there are on Dartmoor something like sixty analogous monuments (95). As a rule they comprise one or two rows of stones, but occasionally, as at Challacombe, triple rows are found. In many cases the stones are only a few inches high and they rarely exceed 2 or 3 feet. An unexplained feature is the frequent presence at one end of a transverse "blocking-stone." They vary widely in their spacing. The average overall length is about 150 yards, but several examples on Dartmoor are over 400 yards, and one attains some two miles. Mostly they tend to run east and west, but to some extent their direction was modified by the lie of the ground. Quite a number, including the three at Drizzlecombe, approach burial cairns. Outside Dartmoor alignments are rare. There is one at St. Colum Major in Cornwall. Wales can show eight, all of them small, the largest, Parc y Meirw, attaining only 130 feet in length. A few isolated examples are recorded from the North of England, including one nearly 300 yards long at Thockrington Quarry House Farm, Northumberland, which approaches a cairn like many of those on Dartmoor. Beyond noting their association with the dead, nothing profitable can be said at this stage about the motives which inspired the building of alignments in early Britain. Among modern primitive peoples similar monuments have been regarded as symbols for ancestors in religious rites; alternatively, as in Assam, they have been imagined as vehicles for the souls of the dead in fertility cults. It is possible that the Devil's Arrows, close to the Great North Road, on the south-west side of Boroughbridge, may once have belonged to a double alignment, though today there are only three stones. The distance between the two extremes is about 360 feet (97). Their heights above ground are $16\frac{1}{2}$ feet, 21 and $22\frac{1}{2}$ feet, to which, when estimating their total length, one may add 5 feet, the depth below ground established by the antiquary, Dale, early in the 18th century. From the nature of the stone it is known that the monoliths cannot have been quarried nearer than Plompton, $7\frac{1}{4}$ miles distant. The surface of the stones has been dressed by pecking, but the vertical runnels on their upper portions are the result of weathering.

The third, and much the most interesting class of standing stone, comprises those arranged in megalithic free-standing circles. Small circles of boulders should be treated warily, as they may once have been covered by burial mounds, since

denuded. Sometimes stone settings can be shown to belong to funerary monuments of a different kind, like the "Druid's Circles" on Birkrigg, Westmorland, where within the inner of two small concentric circles were found four burials by cremation, one accompanied by a Bronze Age urn, sealed beneath the two layers of rough slab paving which occupied the greater part of the interior of the monument. Circles made up of more or less contiguous slabs almost certainly represent the kerbs of vanished cairns, or the last traces of hut-circles. There remains, however, a large number of stone circles which, from their size, can hardly have been covered by vanished mounds, and to which no obvious function can be assigned.

Circles of this kind, which we may fairly describe as sacred, are widespread in the highland zone. Characteristic examples from the northern counties are the Keswick circle (96), having thirty-nine stones set on a diameter of from 100 to 110 feet, Long Meg with fifty-nine stones and a diameter of from 305 to 360 feet, and one on Summerhouse Hill, Yealand Conyers, Lancashire, the remaining four stones of which give a diameter of 460 feet. The small circle at Shap in Westmorland, partly destroyed by the railway, is of special interest because approached by a double alignment or avenue half a mile in length.

The Welsh circles, though numerous, are disappointing, being composed of smallish stones and mostly ranging in diameter between 60 and 80 feet. Their distribution is markedly upland, two-thirds of them concentrating in Montgomery, Radnor, and Brecknock. Outlying stones are a common feature, Cerrig Duon, Traen-glas, Brecknock, having, in addition, an avenue 130 feet long which, although it does not approach nearer than 40 feet and is not aligned directly on the circle, was obviously designed to form part of the same complex. Central stones also occur occasionally.

The circles of West Cornwall resemble those of Wales both in scale and in details of form. Thus, the Nine Maidens of Boscowen-ûn has a large central stone, while the Merry Maidens on Rosemodres has two tall outliers. They are particularly rich in legend. The commonest tale is that the rings represent girls turned to stone for dancing on the Sabbath, while outliers are explained as petrified pipers. It need hardly be added that the dance legends attached to megalithic circles are far older than Sabbatarianism and even antedate the spread of Christianity. An alternative story has to do with warriors and conflicts. According to this the Merry Maidens were set up on the spot where the Cornish King Howel was overcome by the English under Aethelstan,

the outliers marking the positions of the two leaders. Some of the circles in the eastern part of the county are rather larger, notably the three Hurlers. According to Camden, writing in his *Britannia* in 1587, "the neighbouring Inhabitants terme them Hurlers as being by devout and godly error perswaded that they had been men sometime transformed into stones, for profaning the Lord's Day, with hurling the ball."

Of the Dartmoor circles one at Fernworthy has an attendant alignment. At Stanton Drew in Somerset there are three circles, having diameters respectively of 97, 368 and 145 feet, the former two with avenues approaching from the north-east. A third of a mile to the north there is a single stone called Hauteville's Quoit, which has been claimed to be on the line of the axis of the two larger circles, while to the south-west there is a group of three stones known as the Cove, which may be the remains of a chambered tomb. Writing of Stanton Drew some two hundred years ago, William Stukeley recorded that "this noble monument is vulgarly called the Weddings; and they say 'tis a company at a nuptial solemnity thus petrify'd. In an orchard near the church is a cove consisting of three stones like that of the northern circle in Abury . . .; this they call the parson, the bride, and bridegroom."

Even more remarkable is the folk-lore attaching to the Roll-right Stones on the Oxford-Worcester border. The story, as recounted by Sir Arthur Evans, is that a certain King set forth at the head of an army to conquer England, but as he advanced up the hill the Witch who owned the ground appeared. Just as he approached the crest of the hill, from which the village of Long Compton would be visible, she halted him with the words "Seven long strides shall thou take," and

"If Long Compton thou canst see,
King of England thou shalt be."

Exulting, the King cried out:

"Stick, stock, stone,
As King of England I shall be known,"

and strode forward seven paces. But lo! instead of Long Compton there rose up before him a long earthen mound, and the Witch replied:

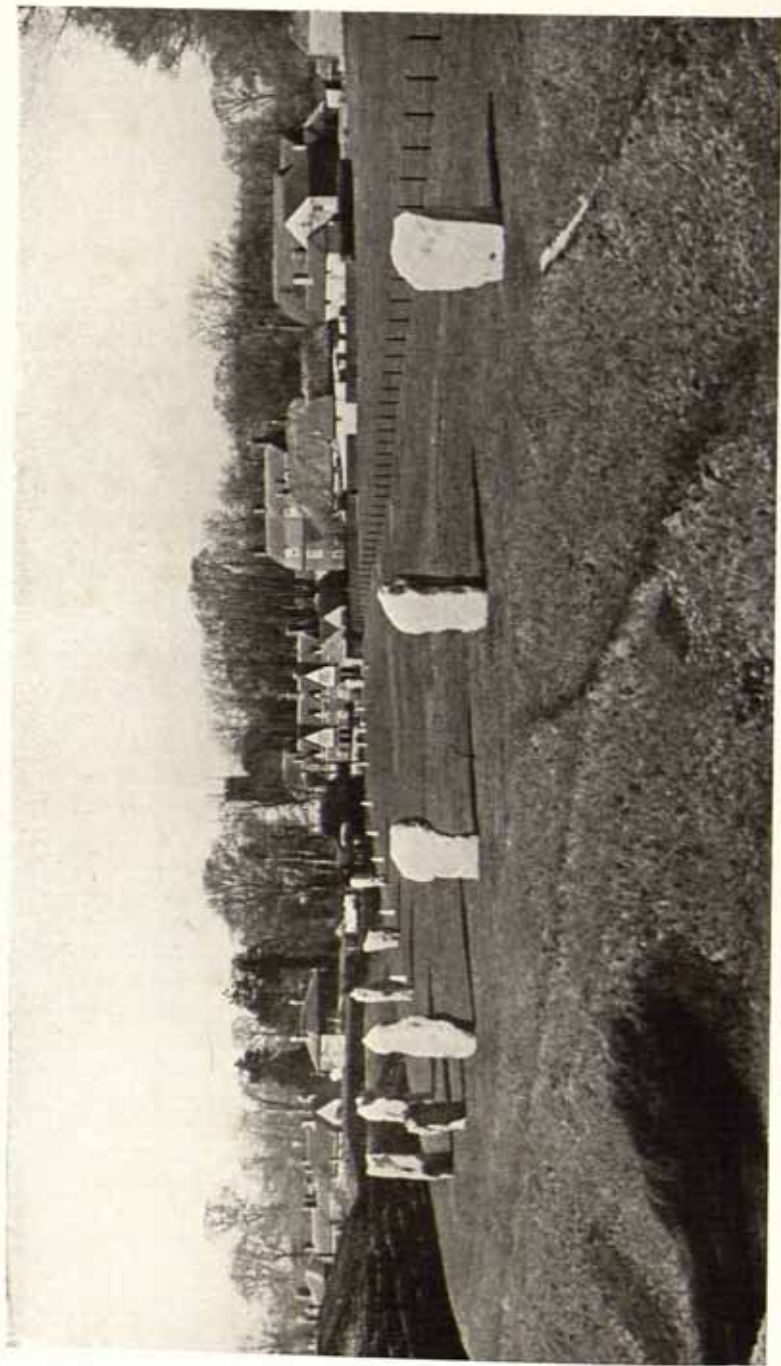
"As Long Compton thou canst not see
King of England thou shalt not be.
Rise up, stick, and stand still, stone,
For King of England thou shalt be none;
Thou and thy men hoar stones shall be
And I myself an eldern tree."



98 AVEBURY: the great ditch in section



99 AVEBURY: the south-western sector under snow



100 AVEBURY: the south-western sector after treatment

The King became a single stone and his men a circle. The stones of the neighbouring burial chamber, the "Whispering Knights," are said to be "traitors, who when the King with his army hard by was about to engage with the enemy, withdrew themselves privily apart, and were plotting treason together, when they were turned into stone by the Witch." An alternative version has it that they are at prayer. Among the other lore attaching to the stones is the saying that they cannot be counted. At night the King Stone and the Whispering Knights are supposed to go down at midnight to drink of a spring in Little Rollright spinney. At the same hour the stones of the circle are said to become men again, join hands, and dance in the air. Lastly there is the story that, when it was proposed to use the capstone of the chamber to bridge the brook at Little Rollright, it took a score of horses to drag it downhill, and then only by such a strain as broke their harness. Every night it turned over and lay down in the meadow, until in desperation it was decided to restore it to its rightful place. Only one horse was needed to drag it up the hill again.

By far the grandest sacred site in Britain is Avebury (3). As William Stukeley remarked in his *Abury*, in 1743, it shows "a notorious grandeur of taste, a justness of plan, an apparent symmetry, and a sufficient niceness in the execution: in compass very extensive, in effect magnificent and agreeable. The boldness of the imagination we cannot sufficiently admire." Since his day the monument has been sadly mutilated, although its rehabilitation has happily been taken in hand recently and the stones of Avebury are beginning to regain their former dignity. The great encircling bank remains virtually intact, save where for a stretch in the north-west sector it has been levelled for farm buildings, and it is possible to walk round almost the whole circumference of about 4,440 feet. The effect, looking down into the sacred area within, is enhanced by an inner ditch the original depth of which can only be gauged by imagining it cleared of its 20 feet of silting (98). When freshly made the vertical height between the crest of the bank and the bottom of the ditch must have been fully 50 feet. What this means in terms of human labour and—let it be added—of social organisation, can only be adequately imagined in terms of the small population of Beaker times, and the slight technical means at the disposal of the builders. The tools chiefly used were the antler "pick," the shoulder-blade shovel, and, no doubt, strong wicker-work baskets, and a simple hoisting tackle.

Bank and ditch are breached by four entrances, three of which are known to have been original. The enclosed area

which is only approximately circular, covers $28\frac{1}{2}$ acres. Round its margin are disposed the uprights of the largest megalithic circle in Europe, over 1,100 feet in diameter (99, 100). Within this there are visible today two smaller circles, which according to Stukeley each had an inner ring. Recent excavations at the northern entrance have shown that another circle, on the same axis as the other two and of approximately the same size, must have existed prior to the cutting of the ditch. This suggests that the original monument consisted of three free-standing circles, the bank, the ditch and the great circle dating from a later stage.

The completed monument, which according to Stukeley's fantasy was designed in the form of a serpent passing through a circle, extended far beyond the bank which encircles the central portion. The existence of the tail, in the shape of an avenue of megaliths describing a sinuous curve in the direction of Beckhampton, has yet to be proved: the two stones popularly known today as Adam and Eve, and by Stukeley dubbed the Longstones Cove, still stand midway on the course of the supposed Beckhampton Avenue, but it is not improbable that they relate to some quite different structure. No such doubt attaches to the Kennet Avenue, which approaches from the south-east, running for some distance with the Marlborough road, and was regarded by Stukeley as the serpent's neck. When he counted the stones in 1722 in company with Lord Winchelsea, he found 72, a number which had until recently dropped to 19. Today, thanks to the restorative work already mentioned, a sufficient number of monoliths has been re-erected along the last half mile of the avenue's course to show what it must once have been like. The course of the avenue is sinuous without being tortuous, having been laid out in a series of straight stretches. The stones were set up in pairs averaging 50 feet apart at intervals of 80 feet, though near the entrance the avenue narrowed and the intervals shortened. The stones, like all those at Avebury, were of local origin, being of sarsen, a siliceous sandstone which must in ancient times have occurred quite commonly on the Wiltshire Downs in the form of isolated boulders. Although it has often been said that the stones of Avebury are unworked, they have in fact been roughly dressed by pecking. The monoliths were in the first instance selected for shape with a view to balancing well. No attempt seems to have been made to match the size of pairs or to grade successive pairs. The blocks were presumably hauled into position on wooden rollers, shallow cavities were scooped out of the ground, and the bases of the monoliths



102 OVERTON HILL: round barrows and site of Sanctuary

levered into position. The final process of adjustment must, in view of the great weight of the stones, have been a slow one performed with great deliberation. At some distance from the cavity strong stakes were driven into the chalky sub-soil to take the strains on the ropes used to steady the monolith, while smaller ones were set against the steeper side of the cavity itself to reduce friction. Altogether the handling of the stones must have been even more laborious than the excavation of the ditch and the building of the massive bank. But the Kennet Avenue is not the end of Avebury, for after running for more than a mile it used to climb Overton Hill and terminate in two small concentric circles, variously described by Stukeley as "The Sanctuary" and "The Hack-pen," and fondly interpreted by him as the serpent's head.

When Stukeley sketched the site in 1723 many of the stones were still standing, and it was possible to make out the Kennet Avenue sweeping downhill and away northwards to the great circle, itself hidden by a fold in the ground (101). The year after the sketch was made the remaining stones of the Sanctuary were removed and the ground cleared for winter ploughing. When, after a lapse of more than two centuries, it was decided to excavate the site, nothing visible remained (102), but the area of search was limited by Stukeley's remark that it was possible to see the serpent's head from its tail. As at Avebury itself, digging not only confirmed his observations by revealing the socket-holes of stone uprights, but, in the shape of no less than six concentric circles of post-holes, has brought to light remains of the wooden structure which pre-existed the stone version known to Stukeley. The general lay-out of the site has been made plain to visitors by concrete stumps set in the post- and stone-holes.

The disappearance of the Sanctuary emphasises that the monument, of which, in its later stage, it formed a part, is itself a mere torso. Many of the stones have been buried in pits, from which they can to-day be raised. It was in digging out one of the buried stones of the great circle that excavators recently came upon the skeleton of a man accidentally killed by the fall of the stone. From the scissors found with him he was evidently a barber, while the coins in his pouch date him to the first quarter of the 14th century. Fortunately the more vicious method, involving the breaking of the stones, did not come into use until late in the 17th century, and Stukeley arrived just in time. Besides planning the stones still standing, many of them subsequently destroyed, he left us an instructive sketch of a stone in process of destruction (103). "The method," he tells us, "is to dig a pit by the side

of the stone, till it falls down, then to burn many loads of straw under it. They draw lines of water along it when heated, and then with smart strokes of a great sledge-hammer, its prodigious bulk is divided into lesser parts." The natives of French Guinea destroy rocks in the same way at the present day in the course of road-construction. The Avebury stones were mostly incorporated into the little village whose "wretched ignorance and avarice" Stukeley so bitterly deplored.

Happily the age of the monument in its developed form can be tied down within fairly narrow limits to an early stage in the Beaker settlement of Wessex, on current chronology round about 1800-1900 B.C. Neolithic Peterborough ware has been found under the bank, in the lower silting of the ditch, and on a domestic site overlaid by the Kennet Avenue. On the other hand, Beaker sherds (Type A) have been found in the overlying silt of the ditch, while Type B Beakers accompanied burials at the foot of stones in the avenue. Similar pots were buried with inhumations at the foot of one of the Sanctuary monoliths, and—for what it is worth—at the foot of "Adam," one of the Beckhampton "Longstones." It is not yet possible to date either the original Avebury or the wooden version of the Sanctuary.

It would be impossible to take leave of Avebury without a word about Silbury Hill, situated close to the Bath Road some 4,750 feet from the centre of the great circle (104). The largest artificial mound in Western Europe, it covers more than 5 acres of ground, is 125 feet high, and could carry the stone circles of Stonehenge on its summit. Many people have tried to probe its secrets without avail. It was bored from top to bottom by the Duke of Northumberland in 1777; in 1849 Dean Merewether tunnelled to the centre from one side; and in 1922 trenches were cut from several points. It remains as much a mystery as ever. All we can be certain of is that whoever put it up must have been impelled by an overmastering impulse.

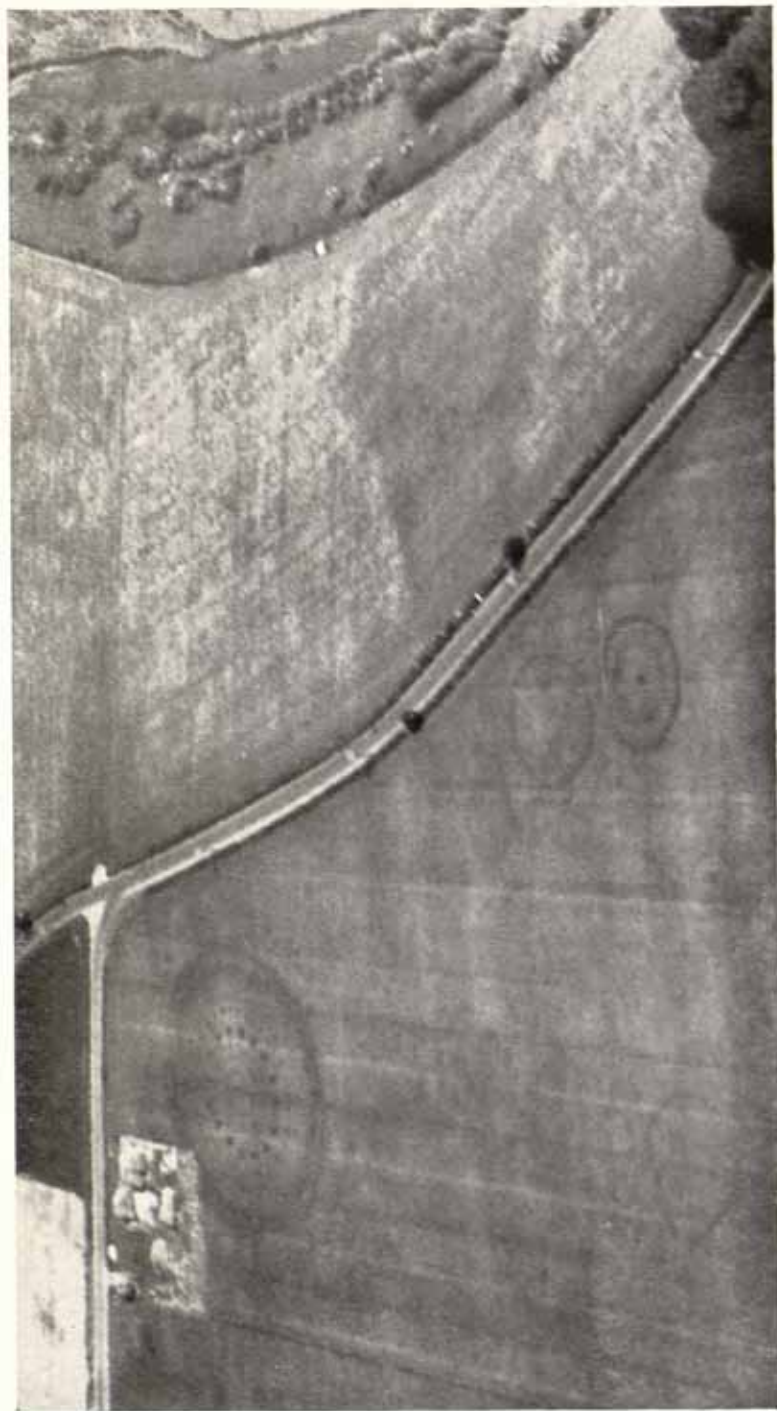
While there is no other sacred site on anything approaching the same scale as Avebury, there were several smaller ones of analogous type. One of the best preserved is Arbor Low in Derbyshire, where we have a circle of monoliths, none of them any longer erect, disposed around a more or less circular area enclosed by a rock-cut ditch and outer bank, and approached by two opposite entrances. Remains of a megalithic structure are present in the centre, and close by the excavators found the skeleton of a man. It is worthy of note that the monument has been brought into physical contact with a place of burial over 1,000 feet from its centre by



103 AVEBURY: Sukeley's sketch of a sarsen monolith in course of destruction



104 SILBURY HILL; from the air





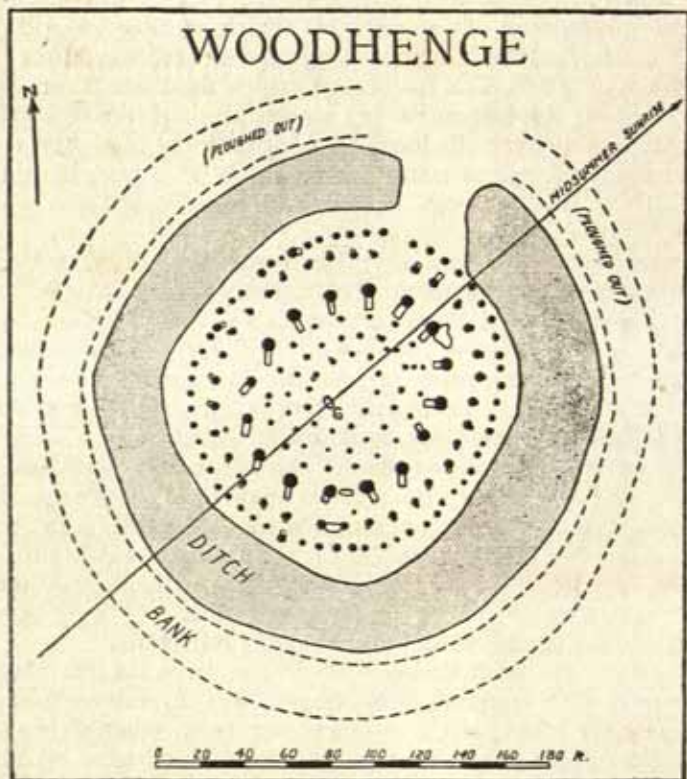
106-7 ARMINGHALL: the sacred site from the ground and from the air

means of a low bank and ditch. Another round barrow, covering an Early Bronze Age burial, was erected from material robbed from the bank of the monument itself, affording thereby valuable evidence of date. Remains of a precisely similar monument exist some ten miles to the north-west in the Bull Ring, Doveholes, where a single monolith was still in position at the time of the French Revolution. Nothing is known of any uprights which may have stood in the earthen rings at Thornborough and on Hutton Moor in the Vale of York. The former, of which there are three, are of great size, the largest having an overall diameter of nearly 900 feet; each has a distinct berm between the bank and the inner ditch as well as a small outer ditch. It is possible that one of the earthen rings at Knowlton in Dorset may also have had two original entrances.

Other sacred sites, embanked and internally ditched, have only one entrance. Often, as at Maumbury Rings, Dorchester, only the bank and ditch remain; at Gorsey Bigbury on Mendip even the bank has gone. Of those with monoliths the Stripple Stones, some seven miles north-east of Bodmin, is the most complete, having a circle of twenty-eight monoliths, four of them still erect, disposed around a circular area defined by an inner ditch and low bank. Mayborough, situated on a tongue of land between the rivers Eamont and Lowther, near Penrith, may be the torso of a similar monument, though here the availability of river pebbles for the bank has made superfluous the digging of a ditch. According to Stukeley there were once two concentric circles of monoliths in the enclosed area, but at the present day there is only one stone.

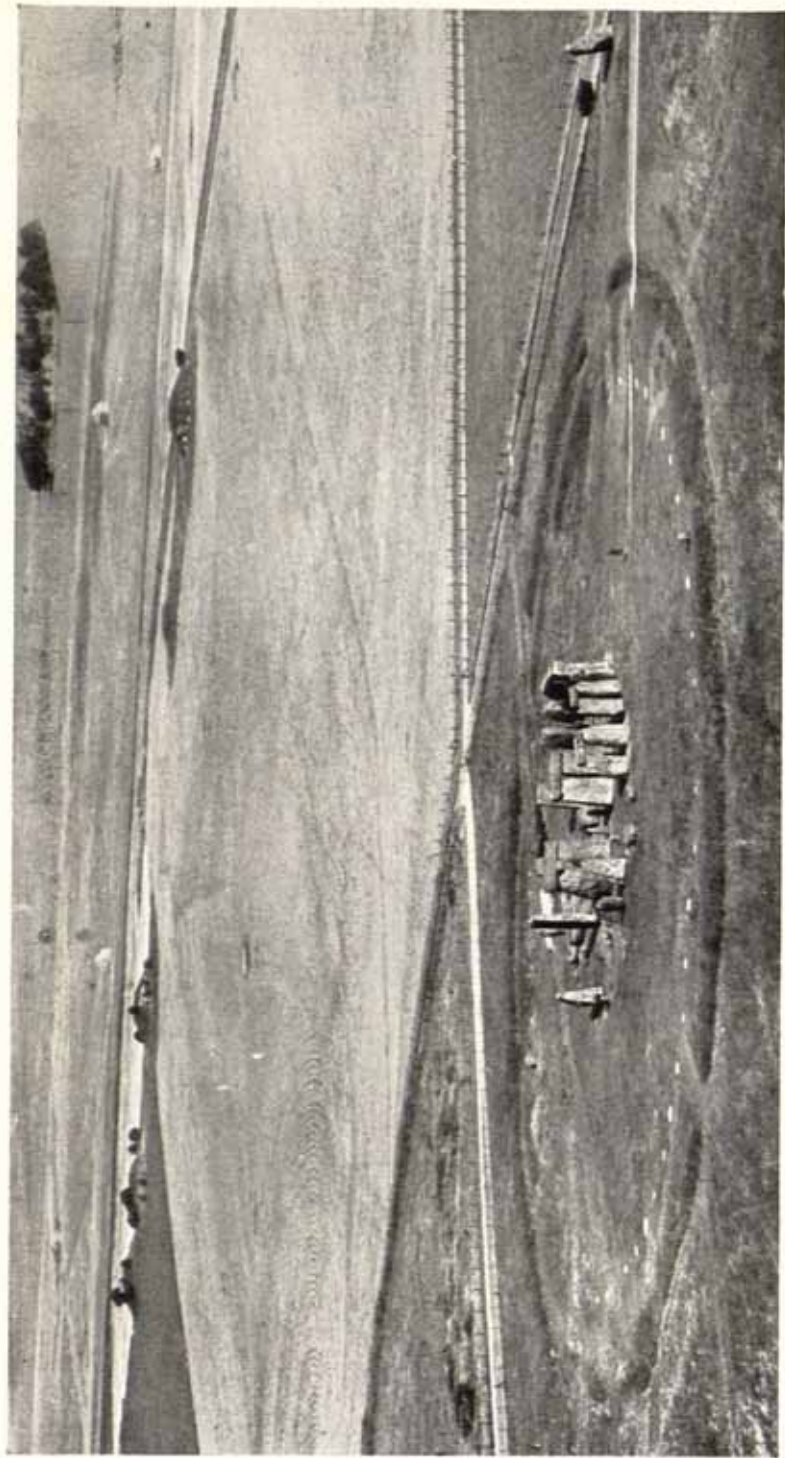
For two sites with timber uprights we have the aeroplane to thank. The original, Woodhenge, was found by Wing-Commander Insall, V.C., in December 1925, when flying at a height of 2,000 feet over the parish of Durrington within two miles of Stonehenge, the other four years later by the same observer at Arminghall on the outskirts of Norwich. At Woodhenge the socket-holes of no less than six concentric oval rings of timber posts were found within a central area defined by a broad, shallow ditch and a much-flattened outer bank (105). As at Arminghall, and at Stonehenge itself, the larger uprights had been slid down inclined ramps cut into the subsoil before being hauled into a vertical position. Within the innermost ring was found a shallow chalk-cut grave with the crouched skeleton of an infant of three years. The Arminghall monument (106, 107) had a smaller ditch outside the bank, as well as a broad shallow one inside, while instead of ovals it has a single horse-shoe arrangement of

great oak-posts, which from the depth of their socket-holes may well have projected 20 or 30 feet above ground-level. The posts had evidently been stripped of their bark, but whether they were carved or painted we cannot, of course, say. Both Arminghall and Woodhenge can be referred to the time of the Beaker people. It has been suggested that Wood-



henge may mark the site of a sacred place, subsequently transferred to the spot where Stonehenge now stands.

Although not to be compared in grandeur with Avebury, Stonehenge is more widely known from the very fact that it can be encompassed in a single glance; yet, like so many famous spectacles, it disappoints many of those who visit it, partly because expectations have been keyed too high, partly because the relative smallness of the visible parts of the monument is emphasised by the rolling expanse of the great Plain which forms its background (108). The most prominent features are the standing stones, comprising an outer circle

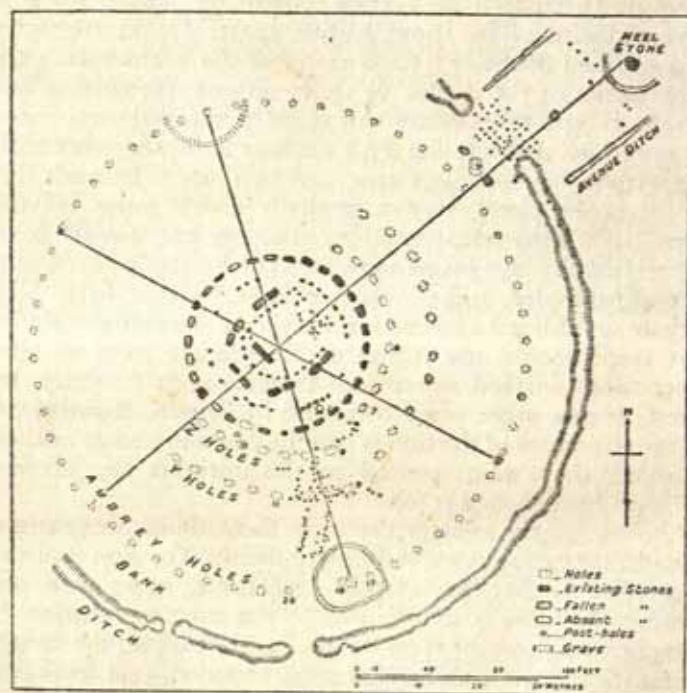


108 STONEHENGE: round barrows in the background

of sarsens, lintelled to form a continuous ring, a circle of bluestone monoliths, a U-shaped setting of five trilithons or pairs of lintelled monoliths of sarsen, an inner one of bluestone monoliths, a recumbent slab, generally known as the "Altar Stone," lying across the axis within the inner U-setting, and a few outliers, including the "Hele" stone set on the same axis. Closer inspection reveals a low bank and shallow ditch defining the outer limits of the sacred area; approaching the single entrance is an avenue formed by parallel pairs of banks and ditches set some 70 feet apart. Air-photography has confirmed Stukeley's statement that the avenue stretches to the banks of the Avon, $1\frac{1}{2}$ miles distant. Excavation has brought to light three additional rings of socket-holes, one—first noted by Aubrey, the 17th century antiquary—immediately within the embanked area, and two others between this and the sarsen circle, known as the Y and Z holes. All the stones have been transported to the site, the sarsens from North Wiltshire, the bluestones from the Prescelly Mountains in Pembrokeshire, and the "Altar Stone" either from Glamorgan or Milford Haven. Dressed to a smooth surface by great stone mauls, the stones at Stonehenge have an altogether more finished appearance than those at Avebury, or, indeed, at any other prehistoric site in Britain. Refinements like the curvature of the lintels and the peg and socket method by which they were secured to the uprights are likewise special to Stonehenge (110).

While it is easy to state the main facts about Stonehenge, their interpretation is exceedingly difficult. The first point to make clear is that, as in most cathedrals, more than one period of building is represented by the existing remains. In its earliest stage, at the time of the Beaker people, the monument consisted of a circular area surrounded by a bank and ditch, having one entrance, and carrying a single circle of timber posts set in the "Aubrey holes." It may be significant, in view of what has been claimed as to the succession of the two sites, that the diameter of the timber circle at Stonehenge is exactly double that of the long axis of the outer ring at Woodhenge. Both monuments, again, appear to be aligned on the midsummer sunrise. At a subsequent, but undetermined, date the sarsen circle and trilithons were erected, and it may be that the avenue and the Altar Stone belong to the same period. The bluestones were set up in their existing positions after the sarsens. The oblong Y and Z holes, from the filling of two of which Early Iron Age sherds have been obtained, were certainly made later than the erection of the

sarsens, but their relation to the bluestones is obscure. From the discovery of flakes under the Boles' long barrow it is known that bluestones had been brought to the district by Neolithic times, but this does not solve our problem. One of the Stonehenge bluestones has a mortise hole on one side, suggesting that it had served as a lintel in some dismantled monument. It is not impossible that the bluestones may, in the penultimate stage of their career, have been placed in the



PLAN OF STONEHENGE

Y and Z holes, in the fillings of some of which bluestone flakes have been found. In any case it is evident that their history has not been a simple one. Memories of the uprooting of stone circles may be enshrined in the otherwise fantastic story told by Geoffrey of Monmouth (1139), according to which the stones of Stonehenge had been brought from Mount Killaraus in Ireland, where they were known as the Dance of the Giants, at the behest of King Aurelius of Britain, desirous of commemorating the warriors fallen in the fight against Hengist and his Saxons (109). The route by which the bluestones reached Wessex was in fact one of the

ancient ways from Ireland. The association of stone circles with warriors and dancing, as we have seen, is a feature of the folk-lore attaching to standing stones.

In attempting to divine the inner purpose of these sacred monuments based on the circle of stone or timber uprights we are little better off than Inigo Jones, who, on returning from a mission of enquiry, reported to James I ". . . concerning the use for which Stone-Heng was first erected, I am clearly of opinion it was originally a temple." All the early antiquaries were agreed that Stonehenge must have been designed for some supreme purpose, alternative suggestions accounting for it as a memorial to fallen warriors or a place of election for a king. It is in some ways unfortunate that early supporters of the temple explanation were prone to identify the sacred site with a form of worship known to have flourished in parts of Gaul and Britain in the centuries immediately preceding Caesar's conquests, so that it is hardly too much to say that the Druids have haunted Avebury, Stonehenge, and their humbler relations, forestalling and even inhibiting a reasoned approach to their problems. Yet, in focusing attention on the sacred character of the sites, the Druids have played their part. Nor must it be forgotten that, if in the vast majority of cases it is easy to disembarass the monuments of a priesthood which flourished some 1,500 years too late, it remains true that Stonehenge in its final form could easily be of Early Iron Age date, a veritable temple of the Druids on a site made sacred by centuries of worship. While it is true that we have no direct evidence for a priesthood, it is evident that people can only have been impelled to construct the vast bank at Avebury, or transport the bluestones from Wales to Salisbury Plain by persons vested either with priestly or royal authority. The structure of Avebury, Arbor Low, and Thornborough Rings suggests, also, a distinction between active participants and spectators, who, seated on a high bank, were effectively separated from the sacred area within by a deep ditch. In this way one detects in certain of these monuments the germ of the amphitheatre.

There are many reasons for thinking that ideas connected with death played an important part in the systems of belief of which the circles are the architectural expression. As we have already seen, circles were a common feature of burial mounds. We have only to imagine the disappearance of the cairn of New Grange, for example, to obtain a free-standing megalithic circle, in the shape of the surrounding peristaliths. At Callernish on the Isle of Lewis the process is in fact half

accomplished, a diminutive cairn being surrounded by a large stone circle, approached by eight alignments of megaliths. With this latter can be correlated the attachment of the Dartmoor alignments to cairns. The conjunction of double alignments, or avenues, with circles can, of course, be matched at Cerrig-duon, Stanton Drew, and Avebury. Despite their possibly late date, the stone settings at Stonehenge seem to reproduce important elements of megalithic tombs, the circles equating with peristaliths, the graded U-settings with forecourts, and the lintelled trilithons with portals. In the same direction point the dedicatory burial at Woodhenge and the inhumations set at the foot of several of the sarsens of the Kennet Avenue at Avebury and of one of those of the Sanctuary on Overton Hill. The cremations found in two-thirds of the "Aubrey holes" at Stonehenge may have been subsequent to the erection of the posts, but in this case they only go to confirm the sanctity of the site. The close connection between sacred sites and burial is well brought out in the unique monument at Bleasdale, Lancs., where we have a small round barrow set almost tangentially within a circular timber stockade. The barrow itself had a causeway across the ditch, defined by sideposts as if to give access to the central grave. This contained Middle Bronze Age funerary pottery and was itself surrounded by a circular setting of timber uprights. Finally, it is pertinent to remark that barrows and cairns tend to cluster round free-standing circles, whether of stone or of wood, simple or defined by ditches. Many of the most famous barrows in the south of England are found within a short radius of Stonehenge.

As already stated, both Stonehenge and Woodhenge are orientated in such a way that the axis of each points to the midsummer sunrise. It would be rash to infer from this anything definite about the religious outlook of their builders, though it does betray some preoccupation with the sun, and, in the case of Woodhenge, the axial line of which divides at right-angles the burial set in the innermost ring, seems deliberately to associate its maximum potency with the grave. It is possible that we have here an expression of the idea that life proceeds from death, one which may easily have been combined with fertility cults. Yet there is no need to read into the fact of orientation any more than that the builders of Woodhenge and Stonehenge shared an interest in the solar calendar common to most people whose livelihood is in any degree bound up with husbandry. In all essentials the great circles retain their mystery.

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PREHISTORIC ENGLAND & WALES



ROMAN CONQUEST

A.D. 43

IRON AGE { C. Belgae - two waves c.75 & 50 B.C.
 B. Middle LaTène (Marnian) overlords } c.300/250 B.C.
 A. Late Hallstatt - LaTène groups } c. 500 B.C.

BRONZE AGE { Carps tongue sword people c. 750 B.C.
 (Millenium of integration)
 Wessex - Breton people c. 1750 B.C.

The BEAKER invasions c.1900/1800 B.C.

NEOLITHIC { Baltic (Peterborough) } c.2500/2200 B.C.
 Western (Windmill Hill & Megalithic)

MESOLITHIC { Baltic (Maglemosian)
 Western (Tardenoisian)

UPPER PALAEO-LITHIC (Creswellian)



- ⌂ Settlement
- ⌊ Lake-dwelling
- ⊙ Hill-fort
- = Cemetery
- Flat grave
- ⊕ Sacred site
- ⌒ Round barrow
- ⌒ Long barrow - unchambered
- ⌒ Megalithic chamber tomb
- ⊙ Neolithic 'camp'
- ⌒ Cave or rock-shelter
- Various

