

Europe in Her Infinite Variety:

c.4500–2800 BC

After the initial rapid spread of farming, which must have involved the movement of people in small but frequent increments, two broad processes began to get under way. In the areas of initial settlement – the loëss soils of the deciduous forest zone, and the islands and coasts of the Mediterranean – indigenous hunter-gatherer populations were quickly assimilated and settlements increased in number, gradually filling up the available spaces between the original pioneer holdings. But beyond the limits of the initial Neolithic settlement zone the processes of change were more complex, varying from localized population advances to the assimilation of Neolithic ways by indigenous foragers. The overall result was the opening up of more and more land to agriculture and the creation of a thoroughly mixed gene pool. As the communities settled into their ecological niches and established their territories, cultural differences became more evident and social networks developed to bind disparate communities together. Thus, a kaleidoscope of different ‘cultures’ crystallized out across the face of the European peninsula.

At one level there was considerable similarity from one end of Europe to the other. Most communities cultivated wheat and barley and ran herds and flocks of cattle, sheep/goats and pigs, though the balance between crops and domesticates varied. Land was cleared using axes of polished stone and the soil was broken first with hoes but later with ards drawn by oxen which scratched furrows through the ground but did not turn the soil in the manner of a plough. All communities now made pottery – humankind’s first artificial material – and for many the plasticity of unfired clay provided a freedom for expressing identity by favouring particular shapes and kinds of ‘decoration’. In the structure of buildings and the arrangement of settlements there is a general sameness – the houses were usually rectangular and timber-built and were grouped together in hamlets or villages – but different social systems led to variation and distinct regional vernaculars began to appear.

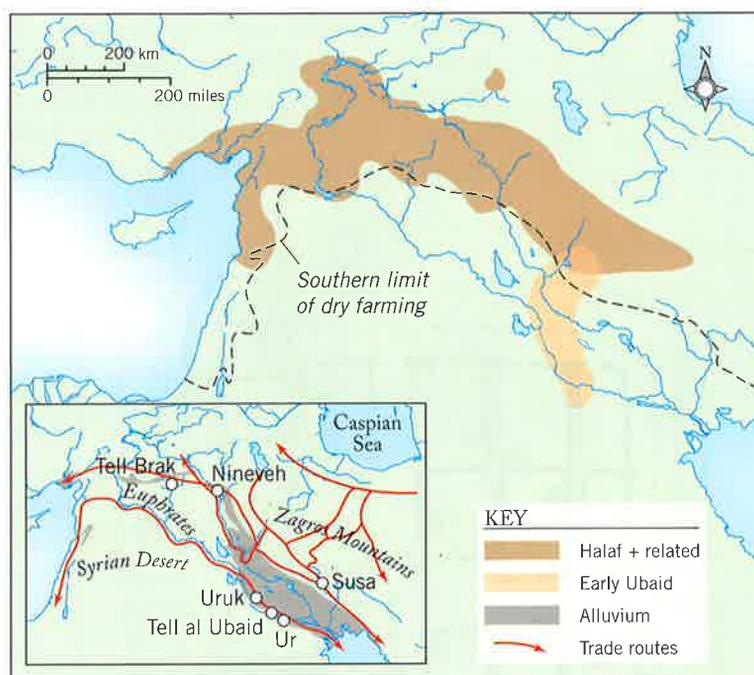
It used to be thought that the east was instrumental in introducing new technologies and new belief systems into Europe: this was the *ex oriente lux* hypothesis. More recently, as the complexity of European development has

become known and a reliable absolute chronology has been established, principally through radiocarbon dating and dendrochronology, it has become clear that many of the significant advances seen in Europe resulted from indigenous energies and inventiveness. Yet the fast-developing communities of south-west Asia are likely to have had some impact on their peripheries. The centre of the urban development in south-west Asia lay in Mesopotamia, in the valleys of the Tigris and Euphrates. It was here, c.5900 BC in the Ubaid period, that irrigation agriculture began leading to permanent settle-

ments and an increasingly complex society controlled through some kind of theocratic power. In the succeeding Uruk period (4200–3000 BC) the first towns emerged, some of them growing to considerable size: around 3200 BC Uruk itself was 100 ha (250 acres) in extent and later, by about 2900 BC, had quadrupled in area. The spectacular growth of an urban civilization in what was a highly fertile but otherwise resource-poor region created a massive demand for materials such as metals, timber, precious stones and other luxury goods, and to meet this demand a huge hinterland came to be exploited. It is not at all unlikely that some of the commodities consumed by Mesopotamian urban societies came from Europe through developing trade networks. The demands of the core could well have stimulated production in the periphery, but, that said, it would be quite wrong to see Mesopotamian urbanization as the principal driver of European social and economic change. Those European communities that, stimulated by the new demands, may have increased production, chose to do so. The innovative surges apparent in Europe were largely self-generated.

Diversification: Places to Live

The great diversity apparent in European society at this time can best be seen through settlements. In south-east Europe, in modern Bulgaria, the tell settlements first established in the early stages of Neolithic pioneering in the

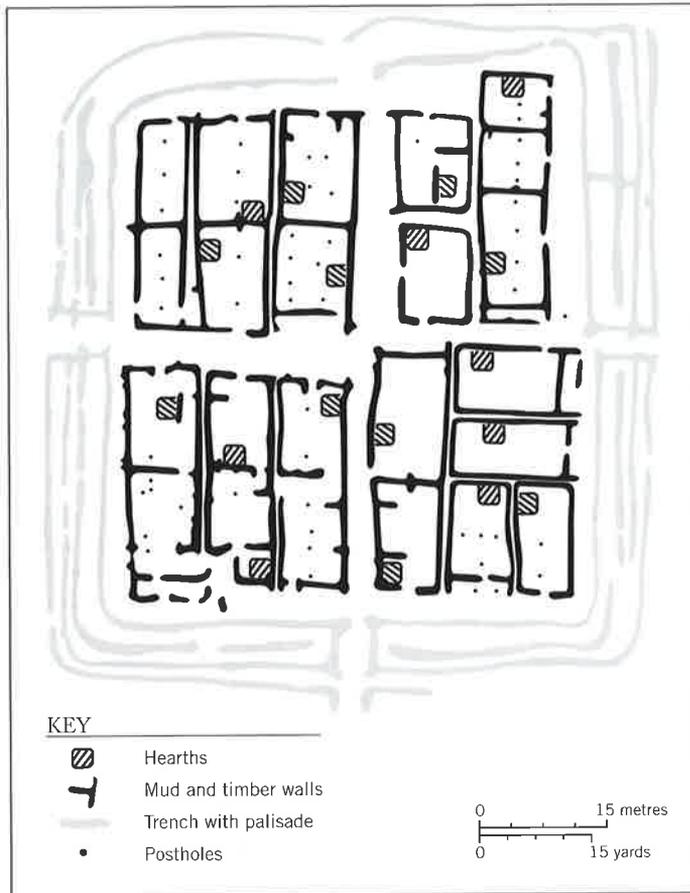


6.1 The Near East at the time of the emergence of city states. The Halaf culture (c.6000–5400 BC) spread in a broad arc from the Mediterranean coast to the Gulf. The Ubaid culture (c.5900–4200 BC) emerged during this time in Upper Mesopotamia. By the Early Dynastic Period (2900–2350 BC) the centre of gravity had shifted slightly but still focused on the rich alluvial lands between the Tigris and Euphrates.

sixth millennium continued to grow. The best-known of the tells is Karanovo in south central Bulgaria. During the two thousand years of its occupation, it covered an area of some 10 ha (25 acres) and grew to a height of 12 m (40 ft) as a result of successive houses being built on the debris of their predecessors. While the houses differ in detail and spacing through time, they are all either square or rectangular and built with walls of vertical posts. Sometimes they were divided into two or three rooms. Each house was provided with a hearth. From the comparatively small sample excavated, the overall impression is of a large village of closely packed houses showing little significant social differentiation. The impressive height to which the tells grew was a result of a deliberate choice made by the occupants to build on the debris of the past with the intention, perhaps, of demonstrating the permanence and longevity of their village, in this way stressing their deep ancestral roots.

Further to the east, in the broad zone of lightly wooded land between the steppe flanking the north shores of the Black Sea and the Russian forests, pioneer farmers had established a network of farming villages which exploited the thick, rich black soils of the region. This group, known archaeologically as the Cucuteni-Tripolye culture, colonized a swathe of land from the eastern foothills of the Carpathians as

far as the valley of the river Dnepr. In the early fourth millennium some of these villages, centred on the valley of the southern Bug, grew to colossal sizes – up to 400 ha (1000 acres) in extent – capable of housing, it is claimed, a population of up to ten thousand! Such staggering concentrations may have been a defensive measure against internal or external threat, or perhaps they represent a stage in the transformation from an egalitarian tribal system towards a more ranked society or chiefdom. Whatever the reason, these super-centres were by far the largest anywhere in Europe at the time and from what we know of their plan they were carefully laid out, with zones of houses separated by



6.2 The settlement of Polyanista in north-eastern Bulgaria as it was first laid out about 4500 BC. The four compact blocks of houses, perhaps each representing a lineage, were protected within a multiple palisade.

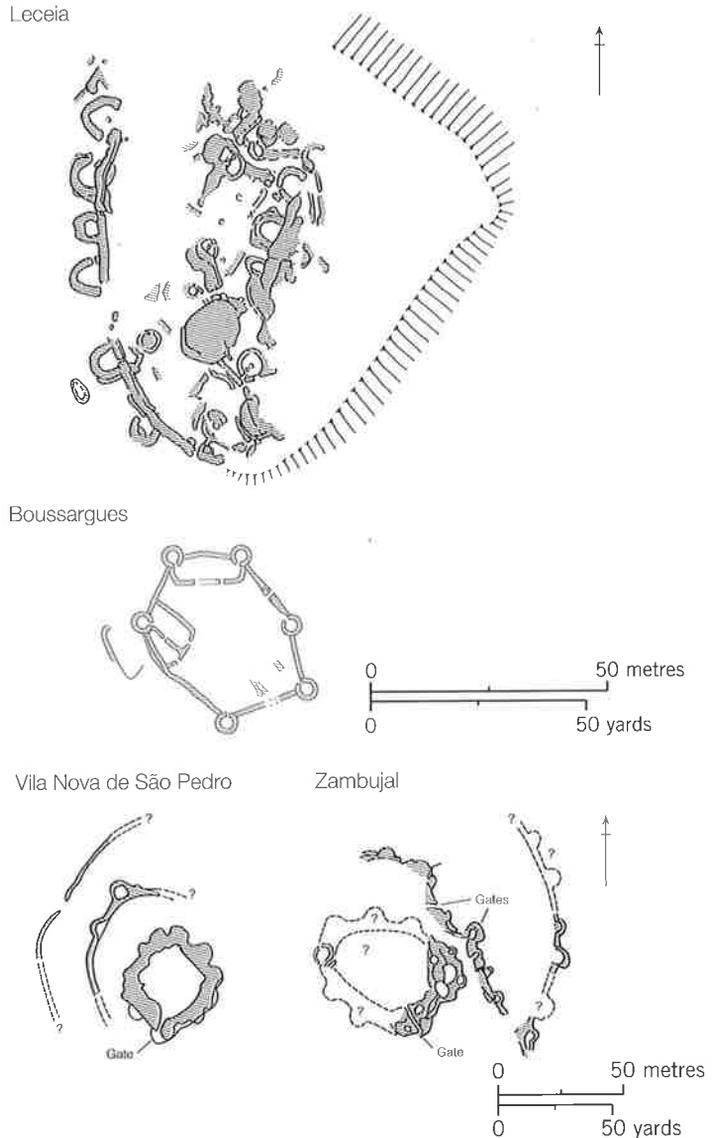
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streets. Clearly some kind of coercive power was at work to maintain such a high level of order.

Over much of the region settled by the first farmers of the LBK, small villages continued to be built but, instead of the long-houses so characteristic of the LBK, the later houses tended to be smaller and there was greater variety reflecting the different regional cultures that had crystallized out. The overall decrease in the size of houses shows the emergence of a rather different social structure, with more emphasis now being placed on the individual family and less on the extended families or lineages who had occupied the earlier long-houses.

The use of timber to build houses was widespread in central and northern Europe from south Russia to Brittany. In southern Europe, while timber was still employed in many parts, extensive use was also made of stone. This is nowhere better demonstrated than in the impressive stone-built 'fortifications' of Portugal, south-eastern Spain and southern France. In Portugal the sites are assigned to a cultural group usually referred to as Vilanovan, after the type site of Vila Nova de São Pedro, near Santarém. Vila Nova comprises a central, roughly circular, enclosure about 35 m (115 ft) across built of a thick drystone wall with forward-projecting bastions and a single, long, narrow entrance. Outside were two further arcs of walling, the inner one having hollow cells set within bastions.

Similar stone-built fortifications are known in Almería in south-eastern Spain, most famously at Los Millares. Here, a promontory between two rivers, the Andarax and the Rambla de Huéchar, was defended by three lines of walling, the outer being the most extensive, running for more than 200 m (650



6.3 Settlements with stone-built fortifications were a feature of the Early Bronze Age in many parts of southern Europe. Leceia, Vila Nova de São Pedro and Zambujal are from the Tagus region of Portugal; Boussargues is in southern France.

6.4 The fortified settlement of Zambujal in Portugal has undergone extensive excavation. The aerial photograph shows successive walls strengthened with circular bastions.



ft), emboldened by nineteen forward-projecting 'bastions' and a gate flanked by foreworks. The approach to the site was 'guarded' by four smaller stone forts. Beyond the outer wall and overlooked by the smaller forts was an extensive cemetery of about eighty passage graves. The complex and the graves were in use from the end of the fourth millennium to the end of the second millennium.

While it is easy to describe these stone-built structures it is more difficult to offer a convincing explanation for their function. Everything about them – the massiveness of the walls, the 'bastions' and the narrow, well-protected entrances – argues that they were built with defence very much to the fore. But the size and elaboration may also have been designed to impress – to demonstrate the might of the polity responsible for their construction. Places of such visual prominence might also have served as foci for assemblies, perhaps for seasonal meetings associated with feasting and worship of the gods. In other words, sites of this kind, representing the consolidated effort of the community working under some kind of coercive leadership, are likely to have performed a range of functions.

This brief review has done scant justice to the range of constructional work under way in all parts of Europe at this time. Timber, drystone, wattle and daub, and *pisé* (tightly packed mud) had all been mastered, and in the variety of the individual buildings, their arrangement one with another and the ways in which the settlements were separated from the world around, we can begin to glimpse the many different identities that contributed to the patchwork of Europe.

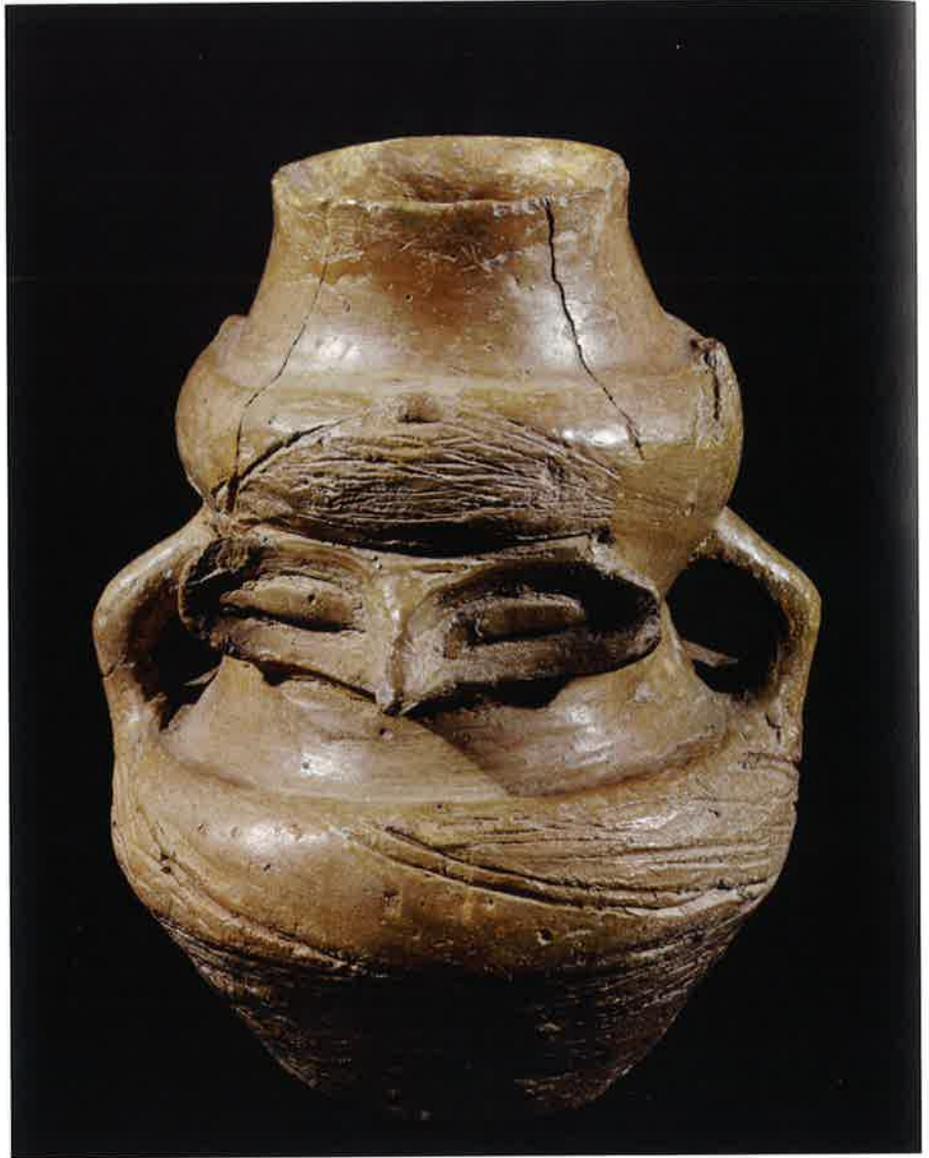
Pottery: A Medium for Self-Expression

Pottery is of central interest since it is usually prolific – sometimes inconveniently so – and, after the Mesolithic period, pretty well ubiquitous. More to the point, the plastic clay was used by societies to transmit messages about themselves and their beliefs. Mastery of the medium was rapidly acquired. The choice of the right kind of clays, the creation of the vessel forms by hand usually using a coil-building technique, the application of various forms of decoration by impression, modelling and painting with slip, and the control of heat and oxygen during firing were all practices well established early in the Neolithic period in Greece, where the technology was introduced from southwest Asia around 7000 BC, spreading to the rest of Europe by around 4000 BC.

Local inventiveness soon takes over, creating a stunning array of vessels often of high artistic merit. Some, like the simple round-bottomed bowls found in many parts of western Europe at the beginning of the Neolithic, were shapes determined by the clay medium itself. This thread runs through the rest of this period, but because of its wonderfully flexible nature clay can be used to copy containers made of other materials – a phenomenon referred to as skeuomorphism. In some assemblages it is possible to recognize the organic prototypes – basketry or leather – that the potters chose to copy with great attention to detail. Other vessels are evidently inspired by metal prototypes. More intriguing are pottery vessels in human form – a frequently recurring phenomenon in the Balkans. This is presumably far more than playful inventiveness. Perhaps these anthropoid pots were meant to represent individual people. If so, their manipulation in the social space in which people lived and died would be redolent with meanings well understood by the initiated. We know from modern ethnographic examples that the grouping and placing of pots within the living space could convey a variety of messages. In one African community the way in which a woman placed her own pot (that which represented her) could inform her sexual partner of her availability or otherwise. In prehistory, interpretations of this kind are beyond the reach of even the most imaginative archaeologist.

Pottery was, for many societies, a way to express their identities. Thus, the

6,5 Anthropomorphic pottery vessel, c.4000 BC, from Hotnica, near Veliko Turnovo in Bulgaria. It is possible that pots of this kind were directly identified with individuals living or ancestral.



reproduction of a set of motifs on the body of a pot was a reaffirmation of group coherence and a way to distinguish 'us' from 'them'. At another level the adoption of a particular vessel form associated with a belief system was a demonstration of one's adherence to that belief.

Not all societies expressed their identities through pottery. In many regions of Europe it is possible to recognize a change to much simpler and less highly decorated ceramics in the Early Bronze Age after c.2500 BC. A possible reason for this is that bronze, in the form of weapons and ornaments, may

now have provided the means of demonstrating group identity, with pottery receding from view and now restricted to a more limited utilitarian role.

Europe's early potters were brilliantly inventive. Their sense of form, space and colour was often stunning, and in sheer creativity they could hold their own with the best of modern craft potters. Diversity in pottery form and decoration is a direct reflection of the many different cultural groups that were now identifying themselves across the face of Europe.

Commodities and Networks: Hard Stone

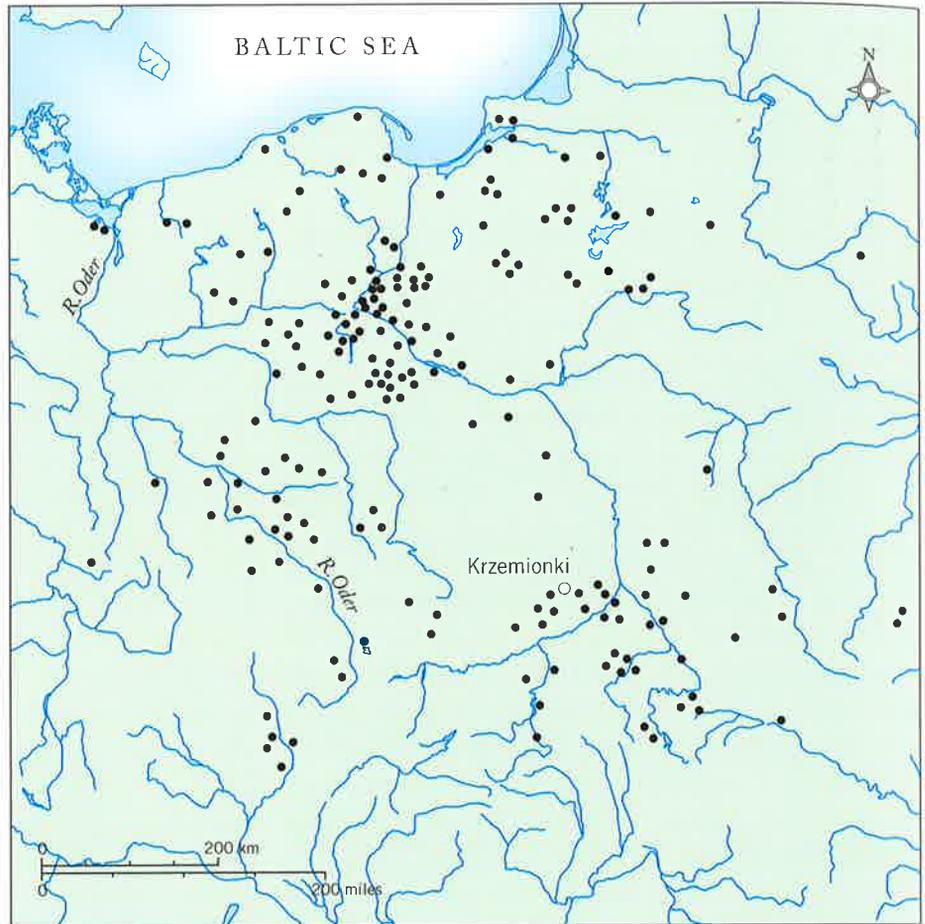
The exploitation of select commodities and their movement, often over great distances, is as old as mankind, but it is not until the period 4500–2500 BC that the exploitation of rare resources begins to take on a momentum sufficient to create interlocking networks of exchange robust enough to be clearly visible in the archaeological record.

By definition, the material that dominates the Neolithic period is stone. Different kinds of stone contributed in different ways. Siliceous stones – flint, chert and obsidian – that would easily take a conchoidal fracture when struck were particularly useful for making tools worked from flakes and blades. Hard, more granular stones of igneous and metamorphic origin could be roughly chipped, pecked and then ground and polished to make robust axes and adzes, while stones of exceptional colour or texture could be polished to create items of high prestige. Throughout Europe there are many examples of the exploitation of stone.

Obsidian, a black, shiny volcanic glass, was a popular commodity in the Mediterranean and its hinterland. Obsidian from the Cycladic island of Melos was already being extracted and distributed in the Late Palaeolithic period, while obsidian from central Mediterranean sources was first used in the Mesolithic period and came to be heavily exploited and widely distributed in the period around 5000 BC when it is found across the width of the Mediterranean from Liguria to Tunisia. Sources in eastern Slovakia and northern Hungary were also exploited on a lesser scale. Obsidian owed its attraction partly to the ease with which it could be worked into long, regular blades, but it was its striking black, shiny appearance that pleased the eye and made it the more desirable.

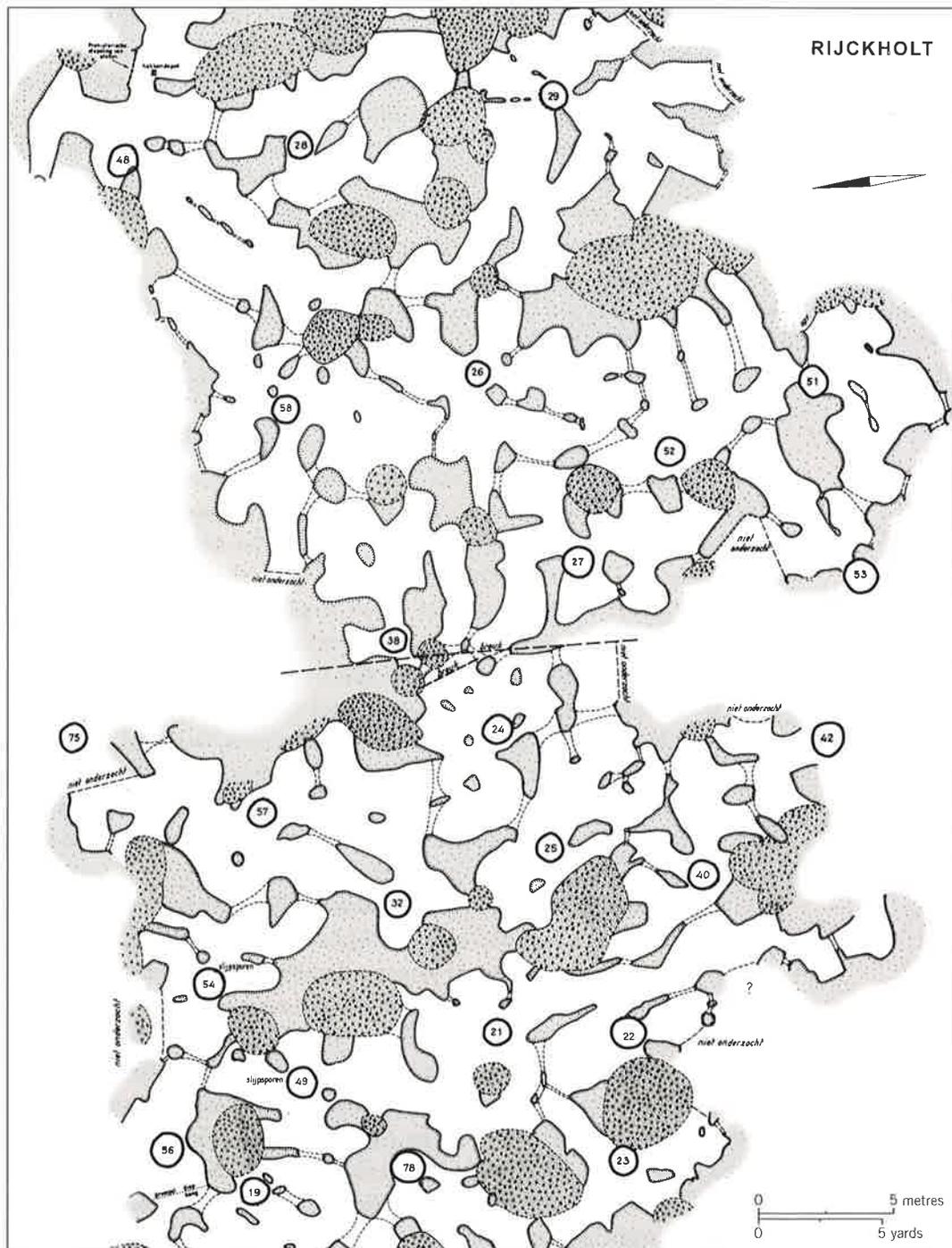
The visual appearance of flint, as well as its mechanical qualities, made the products of certain sources particularly sought after. Chocolate flint, honey flint, spotted flint and banded flint were all exploited in different regions in north central Europe. Of these, banded flint from Krzemionki in the Holy Cross hills of Poland was one of the most widely distributed, reaching distances of up to 400 km (250 miles) from the source. Banded flint, with its flowing streaks of light and dark colour, has a particular attraction, especially

6.6 Banded flint was mined on a large scale at Krzemionki in Poland and was distributed widely across the North European Plain.



when polished to form long elegant axeheads. The flint nodules were acquired by digging pits or shafts down through the chalk to the level of the nodule bed. When the bed was close to the surface the open cast digging of pits would suffice, but as the layer sloped away and became deeper it was necessary to dig shafts and open up galleries radiating from the bottom. The source was exploited for a considerable period of time throughout the Funnel Beaker Culture (TRB) (3900–3100 BC) and the subsequent Globular Amphora culture (3100–2700 BC). In the earlier period the mined flint was taken to a single large production site at Cmieló nearby and there worked into finished axes which were distributed over distances of up to 100 km (60 miles). In the later period the manner of production changed, with the axe-manufacturing sites now being located close to the shafts, the products reaching sites of up to 400 km (250 miles) away. One explanation offered to account for these differences is that during the TRB period, when production was centralized, the axes were fed directly into the exchange networks, while in the Globular

6.7 *Opposite:* The flint mines at Rijckholt in Holland. The depth at which good flint lay required the miners to dig deep shafts to find the seam before digging a dense network of interlocking galleries to maximize the extraction of workable flint.



- shaft with the serial number of the mine
- sink hole, filled with terrace gravel
- tectonic fault
- - - inaccessible connection, known as a 'breach'
- chalk, not mined

6.8 *Opposite:* The two maps show the distribution of two different types of stone used to make axes in Brittany. The dolerite was used to manufacture simple axes while the hornblende was used for more complex shaft-hole axes. Both maps show the extensive network of distributions with the rivers, particularly the Loire, featuring large.

Amphora period people travelled to the mines from distant parts and worked for a limited period, extracting and shaping the stone they required, before leaving for home with their new stock of axes. At their home bases the axes would then have entered the local distribution networks.

There is nothing at all unreasonable in supposing that production in the later period was by direct access. Indeed, one could go so far as to suggest that this method may have been the norm, with the resource being regarded as belonging to the people at large rather than to the locality. It is quite possible that the mining season brought disparate communities together for feasting, games, worship and the like. At such times allegiances could be reaffirmed, marriages agreed and gifts exchanged, giving strength to a wide-flung network. In other words, the source of the commodity may have become the centre of the social network.

Flint mining became widespread in the chalklands of western Europe, in southern Britain, Belgium, Holland and Denmark. The mines of Rijckholt in southern Holland give a good idea of the skill of the miners. Because of the thickness of the overburden and depth of the desired flint band within the chalk the miners had to dig shafts 1–1.5 m (3–5 ft) in diameter to a depth of between 4 and 12 m (13 and 40 ft) depending on the slope. There are estimated to have been two thousand shafts altogether.

An average mine would have taken three men about a month to exploit, during which time they could have extracted 8000 kg (17,600 lbs) of flint. Given that there were two thousand individual shafts, the total yield would have been enormous, but since the mines were probably in use throughout much of the fourth millennium the annual yield was relatively modest. Rijckholt flint was much favoured and widely distributed throughout Holland, Belgium and western parts of Germany.

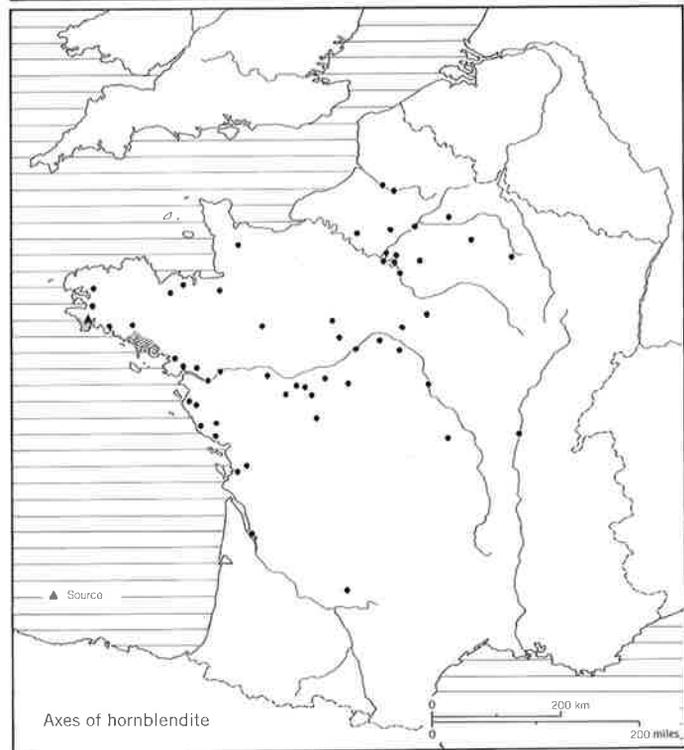
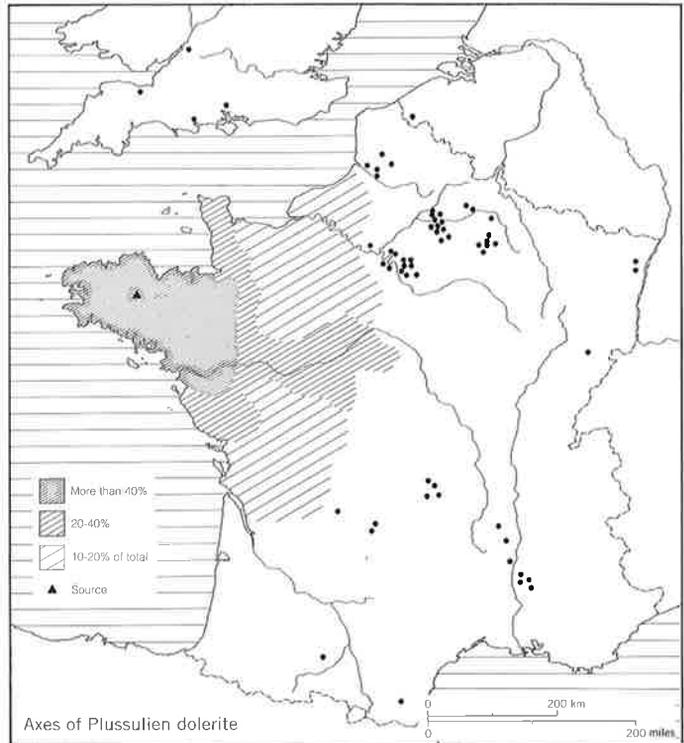
In areas where flint did not naturally occur, hard stone of igneous or metamorphic origin was chosen to make axes which were usually carefully polished before use. Of the large number of sources identified as production centres, the most extensively studied is the quarry at Sélédin near Plussulien in the centre of Brittany, where a fine-grained dolerite was easily accessible. The quarry seems to have been in use from just before 4000 BC until as late as c.2200 BC. During this time extraction was on a very large scale, extending over an area of 100 ha (250 acres) with the nucleus concentrated within about a hectare. Between 80–100,000 tonnes of raw material was extracted, which, allowing for the inefficiencies of the production methods used, would have yielded about two million rough-out axes. If the quarry had been in use for the full two thousand years, the average output per year would have been about a thousand rough-outs or three per day.

Again we are faced with the question of how the quarries were managed –

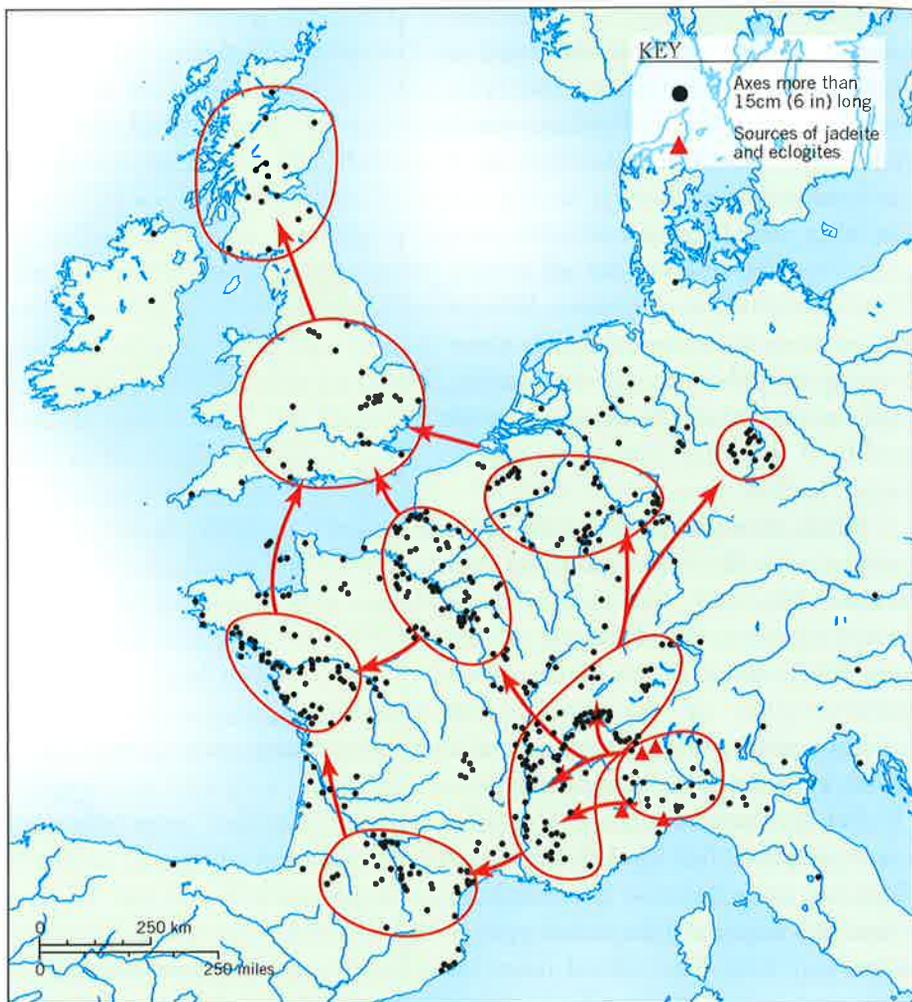
whether by local specialists, or by groups coming from far and wide to make axes for a short period every year before returning home. The latter seems the more reasonable explanation since axe production as part of a seasonal assembly would explain why this one source was favoured above all others. The compulsion to use Sélédin dolerite may have come from its direct association with a prestigious meeting place rather than from any special quality of the stone itself or monopoly on production.

What stands out, besides the huge production, is the considerable area over which the axes were distributed, stretching from the Pyrenees to the west Midlands of Britain. It is a vivid demonstration of the mobility of artefacts passing from hand to hand through the networks of exchange.

While it may have been the significance of 'place' that gave Sélédin axes their particular value in the minds of those who acquired them, other types of stone may have been valued more for their unusual qualities. This would seem to be true of jadeite – a highly distinctive, greenish-coloured, fine-grained rock that could take a very high polish. The general term 'jadeite' is frequently used to cover a variety of metamorphic rocks including true jadeite, chloromelanite, nephrite, etc., but analysis has suggested that the great majority of the so-called 'jadeite' axes found in Europe are likely to have come from deposits in the Alpine area, more particularly in the Italian Piedmont and Liguria.



6.9 The distribution of jadeite axes from their source in the western Alps across Europe. The distribution vividly displays the exchange networks then in operation.



Jadeite was used to make axes and, more rarely, rings. The axes were widely distributed in Europe in the period 4700–3800 BC and most prolifically in the centuries from 4500 to 4300 BC. Several thousands of jadeite axes have been found in western Europe but the distribution is far from even. Small axes, presumably utilitarian examples, are found in some number in the Alpine region close to the sources, while larger, more fragile and highly finished examples tend to be found in more distant parts, extending from southern Italy to the north of Scotland, implying that these were more prestigious items distributed through networks of elite exchange. Many have been found in ‘watery’ contexts where they were probably deposited as gifts to the spirits of the places, while others were deposited in burials, particularly in the *grands tumuli* of the Carnac region of Brittany. Clearly jadeite axes were items greatly to be revered.



6.10 Finely finished jadeite axes were made in the western Alps and transported via the exchange networks across western Europe, some reaching as far afield as Scotland. The axes were items of considerable value and many were deposited in ritual contexts. These two fine examples were found in Scotland.

The Europe-wide distribution of the large prestigious jadeite axes is particularly revealing since it reflects the exchange networks then in operation. From the Alpine sources two main routes seem to have been followed. One passed through the Lower Rhône valley and the Languedoc, and by way of the Carcassonne Gap–Garonne–Gironde route to the Atlantic. Thence the axes were carried, most probably by sea, to the Loire valley and southern Amorica (Brittany). The second main route led up the Rhône–Saône valley and then bifurcated, with one branch leading to the Seine valley, and the other to the Rhine–Moselle valleys and beyond to Thuringia. From Amorica, the Seine valley and possibly the Rhine mouth, axes were carried to most parts of Britain, with a few reaching Ireland. This astonishing distribution pattern is the first full reflection of a network of exchange routes that is to recur many times.

By the mid- to late fifth millennium BC disparate communities, scattered across hundreds of kilometres, were linked, albeit loosely, in systems of reciprocal exchange through which commodities, and with them ideas and beliefs, could quickly spread. We will see later in this chapter and the next how these systems were further consolidated, leading to convergent developments in culture across extensive regions.

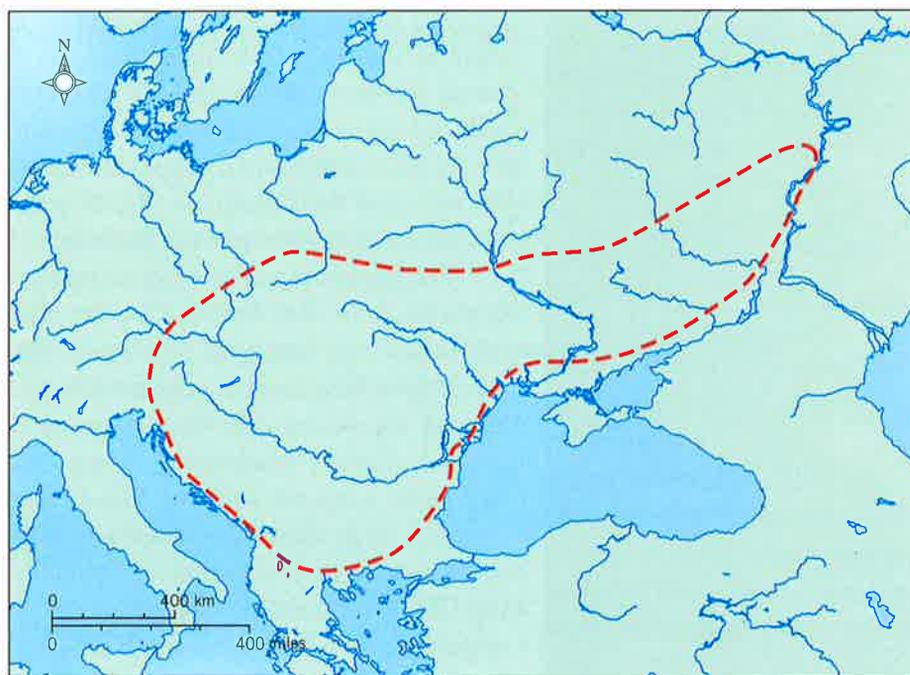
Glittering Metals

Humans find coloured stones attractive. Among the stones that stand out from the usual dun-coloured rocks, copper minerals – the bright green of malachite and the vivid blue of azurite – are among the most striking. It is easy to understand how such minerals, picked up as pebbles or chipped out of the living rock, may have been taken home and, by accident or design, may have been heated in an open hearth. In such circumstances, the minerals would, comparatively easily, have been reduced to metallic copper, itself a substance endowed with remarkable properties – it is shiny, reflective and malleable, and can be changed from solid to liquid and back again simply by the application and removal of extremes of heat.

While there is some evidence to show that copper was first being extracted in small quantities in Anatolia in the sixth millennium BC, the first large-scale production took place in the Balkans. The earliest mines so far discovered are at Aibunar near the town of Nova Zagora in north-western Bulgaria. Here the copper ore was dug out of the rock, leaving long, narrow trenches as much as 80 m (260 ft) long, from 3 to 10 m (10–33 ft) wide and up to 20 m (66 ft) deep. This was mining on a large scale involving a massive expenditure of labour. The Aibunar mines are dated to around 5100 BC and since the technology involved in casting the shaft-hole tools in two- or three-piece moulds was already quite advanced here, it is likely that even earlier workings remain to be discovered.

The copper tools found at Aibunar had been used in the mining process, but similar artefacts found elsewhere, particularly in graves, show little or no evidence of wear. Simple axes and chisels have also been found, again usually in burial contexts – in fact, the full range of common tools, previously made of stone, was now being made in copper. Yet, at this early stage, most copper implements were probably not meant to be used but were prestige goods symbolic of the power to command raw materials and the ‘consolidated work’ required to produce them.

The fifth-millennium copper production in the Carpatho-Balkan region was a remarkable phenomenon. While it is possible that some knowledge of the properties of brightly coloured copper ores had spread to Europe from



6.11 The extent of the Carpatho-Balkan metallurgical province showing areas maintaining contact with each other through exchange networks in the fifth millennium BC.

Anatolia in the late sixth millennium, the developments in the Balkans, both in the range of items made and the sheer volume of production, owed little to outside influence – we seem to be witnessing here an entirely indigenous development. What gave impetus to all this is a matter of guesswork. Most likely it was related to the rise of elites demanding new ways to display their power and the exalted status of their lineages. Yet this precocious production was short-lived, lasting only until about 3800 BC, after which output declined very rapidly and metallurgy all but disappeared for several centuries before it eventually got under way again, the specialist craftsmen now generating a different range of tools and weapons owing little to the fifth-millennium types.

In the period of their floruit the Carpatho-Balkan mines produced huge quantities of copper that was distributed through exchange networks over considerable territories reaching westwards to the flanks of the Alps and eastwards across the steppe, through Moldavia and Ukraine, as far east as the Volga. No doubt the metal was used in the reciprocal exchanges that served to give a degree of unity to this vast territory. In many ways the distribution of this early copper in eastern Europe was equivalent to the distribution of Alpine jadeite in the west.

The sudden development of copper production in the Balkans by indigenous communities may not be unique. Recently some evidence has been put forward from the site of Cerro Virtud in Almería in south-eastern Spain that



6.12 An elite burial from the cemetery at Varna on the Black Sea coast of Bulgaria. The burial, of a man in his mid-40s, is adorned with 990 separate gold objects as well as an impressive array of copper tools and weapons. The burial dates to about 4000 bc.

suggests copper was being extracted here as early as the early fifth millennium bc. It would not be at all surprising if the metal-rich regions of Iberia proved to be the centres of other autonomous copper industries, the necessary skills developing locally without reference to events in the Balkans.

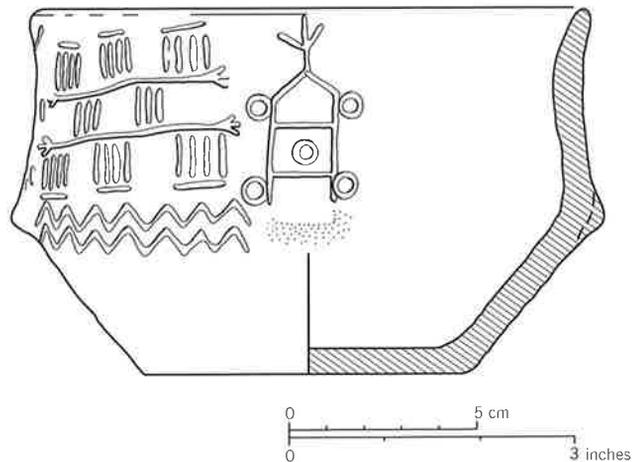
The second metal to make a dramatic appearance in the Balkans in the fifth millennium bc was gold – a metal that would have been found in its native form in alluvial deposits and as veins exposed in bedrock. For the most part gold was used for small objects such as beads and bracelets or, in sheet form, as coverings for other objects or as attachments for clothing. The most dramatic example of the use of gold comes from a cemetery of some 280 burials excavated at Varna on the Black Sea coast of Bulgaria. More than half of the burials were accompanied by grave goods and of these eighteen were particularly rich. The most elaborate grave, that of a male 40–50 years old, produced nearly a thousand gold objects, mostly beads but also including rings, bracelets and a number of applied decorations for the hair, clothing and body, including a penis sheath. He was also provided with copper axes and other tools and a sceptre in the form of a perforated stone axe. The lavish use of gold was focused almost entirely on enhancing the body and its dress, but in two cases even the accompanying pottery was enlivened with gold sheet. The consumption of gold in the Varna cemetery was colossal: in all some three thousand items are recorded, weighing over 6 kg (13 lbs)! No sources are known in the immediate vicinity, the nearest being in south central Bulgaria.

Inventive Minds and New Technologies

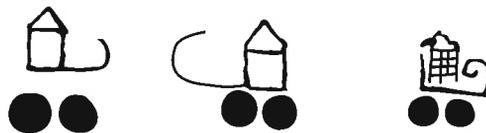
The fifth millennium saw the development of many new technologies. The most dramatic was pyrotechnics – the skilful control of fire – to release copper from its ore and to transform its shape, and to create high-quality ceramics with carefully controlled surface colouration. These were specialist skills, though those involved may well not have worked full time at these crafts.

Equally far-reaching developments lay in the field of land transport with the appearance of the wheeled vehicle and the domestication of the horse. The earliest evidence for wheeled vehicles appears simultaneously in south-west Asia and in northern Europe about 3500 BC. In Mesopotamia pictographs representing four-wheeled wagons are found on tablets of the Late Uruk period while models of solid wheels, made from chalk and from clay, have been found in Syria and Turkey dating to a century or two later. The earliest European evidence consists of parallel wheel ruts from beneath a megalithic long barrow at Flintbek, near Kiel, and a pot from Bronocice near Cracow in Poland which is decorated with a schematic picture of a four-wheeled wagon. Both European finds are broadly contemporary with the Uruk pictographs. The likelihood is that the wheel was a Mesopotamian invention but new finds could well change our perception. By the beginning of the third millennium the idea had spread widely throughout Europe and the Pontic steppe. The earliest wheels were single-piece discs but these were soon augmented by composite wheels built of two or three pieces.

Wheeled vehicles soon spread across Europe and in the third millennium many clay models of high-sided four-wheeled carts are found throughout the Great Hungarian Plain and Transdanubia. Thereafter four-wheeled vehicles are found as a recurring motif in rock-art depictions in many regions. Mobility was important. The ability of a community to harness its ox-drawn carts and to transport goods opened up new opportunities for interaction and, where the terrain was open enough to permit passage, bulk commodities could now be moved over great distances. Mobility was becoming a feature of life.



6.13 Early wheeled vehicles illustrated as pictographs (below) from the Late Uruk (mid-fourth millennium BC) in Mesopotamia and (above) on a pottery vessel of c.3500 BC from Bronocice, near Cracow, Poland.



6,14 Pottery cup in the form of a four-wheeled vehicle from Szigetszentmárton, Hungary dating to the early third millennium BC.



Parallel with these changes came the domestication of the horse. Wild horses roamed the steppe in large numbers and it was in this region that domestication, and later horse-riding, first took place. During the fifth millennium BC a distinctive culture – the Sredny Stog culture – emerged in the region between the Lower Dnepr and Lower Don valleys, spreading across a broad zone from the open steppe to the forest steppe. Sheep/goats, cattle and pigs were domesticated but horses were also vital to the community's well-being. Wild horses were hunted but there is also evidence that they were herded and that some were becoming sufficiently tame to be ridden. At one site, Dereivka, located above a tributary of the river Dnepr, perforated strips of antler have been found that are thought to have been the cheek pieces of simple bridles. At the same site the teeth of a stallion show a pattern of wear that probably resulted from chafing against a solid bit. These scraps of evidence, pointing towards the beginnings of horse-riding, date to c.4000 BC. Thereafter the successive peoples of the steppe became the most proficient horse-riders in Europe.

The advantages of horse-riding are obvious – speed of movement was greatly increased, probably as much as tenfold, and this new manoeuvrability allowed flocks and herds to be managed with much greater ease. When, later, horses were used for traction in place of paired oxen to pull vehicles, speed of transport also improved from around 25 km (16 miles) per day to between 50 and 60 km (31 and 37 miles). The trained, domesticated horse, therefore, offered many benefits and it is hardly surprising that horse-riding spread

rapidly throughout Europe, reaching most parts by the end of the third millennium. The well-trained horse may itself have become a valuable item of exchange. It was probably in this way that riding horses were introduced into the Great Hungarian Plain and Transdanubia, in exchange for items of Balkan copper. In the more westerly parts of Europe indigenous wild horses – the successors of herds that had colonized Europe in Upper Palaeolithic times – were the stock from which domesticated horses arose. It was, therefore, the knowledge of horse-breaking, training and riding that spread to these parts rather than the beasts themselves.

One final ‘technological advance’ may be mentioned – the woolly sheep. The earliest sheep were hairy, rather than woolly. Wool-bearing sheep were first introduced into Europe from the Near East in the early part of the fourth millennium. These beasts could be plucked to remove the woolly undercoat, providing a fine fibre that could be beaten into a felt or spun into thread for weaving, opening up an ‘industry’ that has provided wealth for European communities ever since.

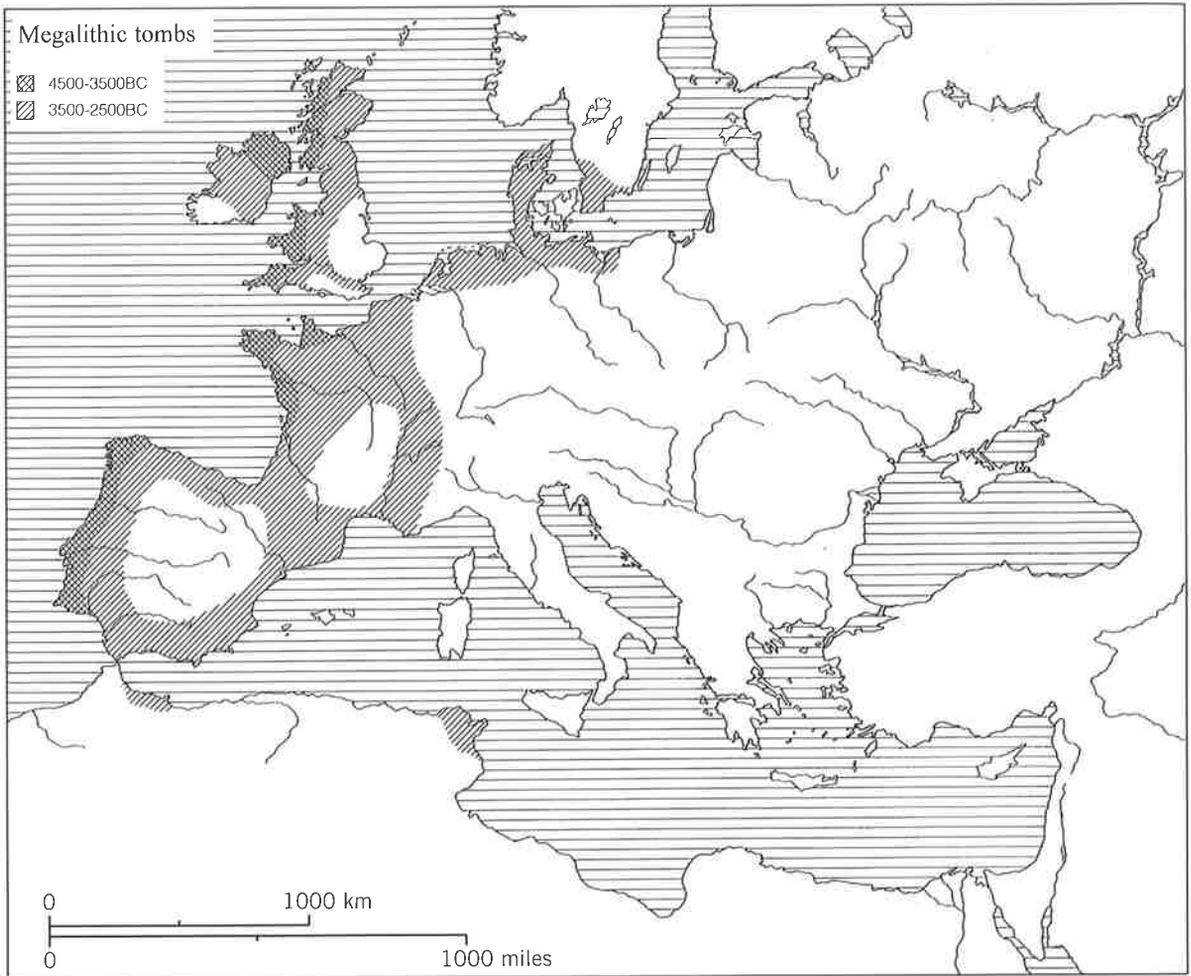
The Emergence of Europe-Wide Networks

With the increase in the production of ‘rare commodities’ such as easily worked flint, fine polished stone, copper, gold, trained horses, etc., exchange intensified and as a result networks of interaction became more far-reaching. In this way ideas and beliefs spread, creating the appearance of cultural similarity over very considerable regions. The flow of ideas and the acceptance of value systems were clearly a consequence of contact through the various exchange networks rather than folk movement. This is not to say that there was no mobility – ideas and commodities cannot move without the agency of people – but there is no need to call up mass migrations to explain change.

The Atlantic-Facing West

Many of the communities of the Atlantic-facing part of Europe, from southwest Portugal to southern Sweden, and including Britain and Ireland, adopted the practice of collective burial in chambers built of large stone slabs (hence *mega-lithic*). The earliest manifestations of this practice in the Upper Alentejo in Portugal and in Brittany date to the period 4700–4500 BC, while in some parts of the broader region megalithic tombs were still in active use up to the mid-third millennium.

The earliest megalithic tombs, known as passage graves, dating to c.4700–3500 BC, developed in regions where indigenous Mesolithic populations were dense and had begun to adopt a more sedentary way of life. In the

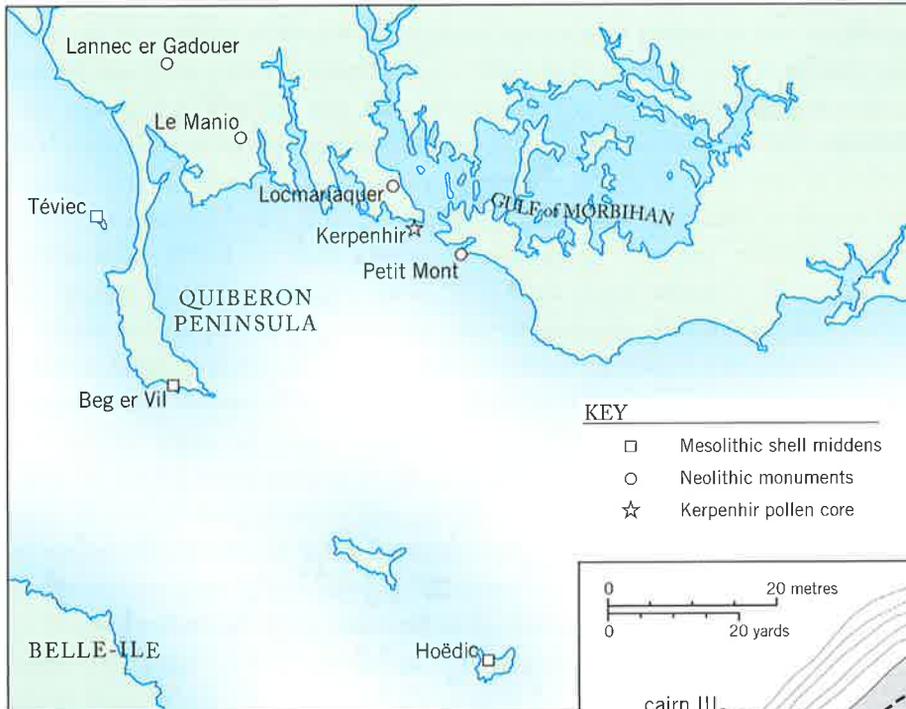


6.15 The distribution of megalithic tombs shows them to be essentially an Atlantic phenomenon. The earliest of the tombs – passage graves dating c.4500–3500 BC – have a maritime distribution, suggesting that the beliefs and technologies behind their construction were communicated along the Atlantic seaways.

following millennium megalithic tombs, now in the form of gallery graves, spread inland to cover much of Iberia and France as well as the Low Countries and northern Germany. In origin, therefore, the megalithic idea was inspired and developed among Atlantic coastal communities.

In addition to the megalithic tomb itself, long mounds associated with collective burial feature prominently in funerary ritual in the western parts of Europe. These mounds occur at least as early as megalithic architecture in areas like Brittany and western France, and are found throughout the megalithic zone as well as in areas beyond it. One view, which has much to commend it, is that the long mounds echo the shape of Early Neolithic long-houses of the LBK tradition and can therefore be considered as ‘houses for the dead’. An alternative view is that the long mounds were a construct designed to replicate the elongated shell middens of the Mesolithic foragers. In Portugal

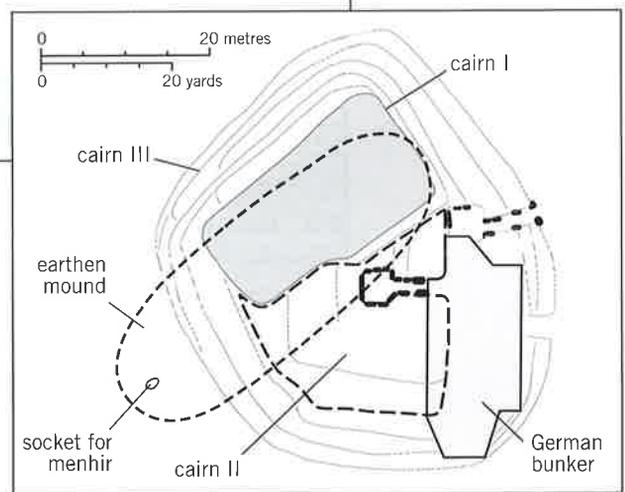
and Brittany shell middens were places where the ancestors were interred and in the Tévéc middens collective burial in stone-lined cists was also practised, lending some weight to the argument. The two interpretations are not necessarily mutually exclusive. The different manifestations of megalithic burial rites along the length of the Atlantic interface reflect the different patterns of interaction between indigenous belief systems and new ideas reaching the area as part of the 'Neolithic package'. Each region, indeed each micro-region,



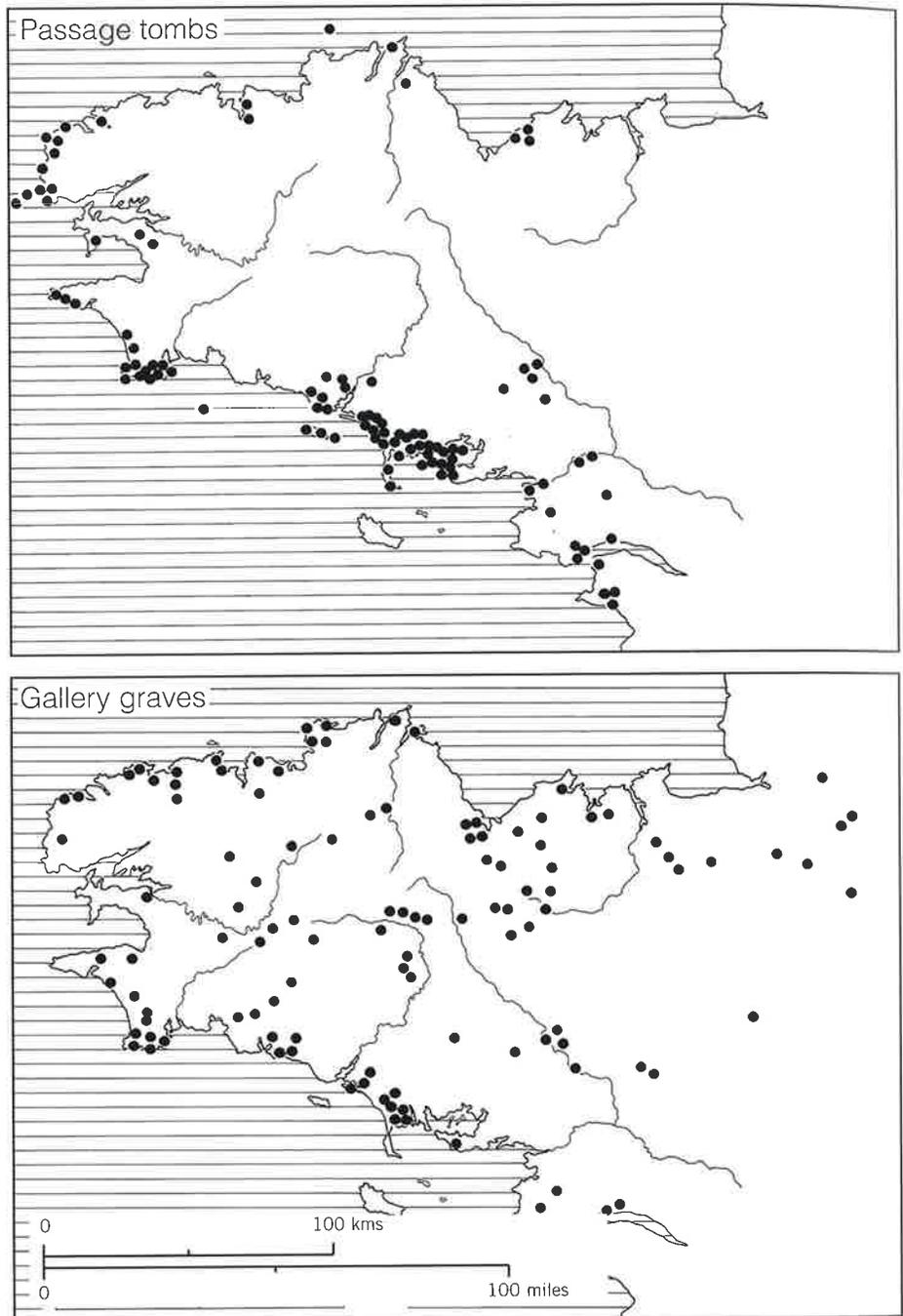
6.16 The passage grave of Le Petit Mont, Morbihan, in southern Brittany developed in three separate stages from an earlier earthen mound with a menhir at one end.

can therefore be expected to have its own trajectory of development.

One region in which megalithic origins have been extensively studied is Brittany. We have already seen that the earliest manifestation of Neolithic ritual building is represented by two types of structure: long mounds (*terres tumulaires*) and menhirs. The long mounds were rectangular or trapezoidal constructions containing a variety of structures including hearths, settings of posts or stones and small stone-built cists (*coffres*) often containing human burials. Thus, they combine the stone-cist burial tradition and the idea of the long mound. However, in cases where it has been possible to observe carefully the



6.17 The distribution of megalithic tombs in Brittany clearly demonstrates that the earlier passage tombs have a very distinctive coastal distribution. The later gallery graves are more evenly spread which may reflect the expansion of communities into more inland areas.



relationship of the mound and the burials within, it can be shown that the cists, often set within small circular mounds, predate the construction of the long mounds. Where dating evidence is available, most mounds fall

within the period 4700-4400 BC. They are found exclusively in the Morbihan, overlooking the Baie de Quiberon and therefore represent a distinctive regional development. It was in much the same area that the menhirs, many of them decorated, were also found.

At some stage between 4000 and 3800 BC it is possible to identify a significant change in the burial architecture of the Morbihan. This is neatly exemplified by the tomb of Le Petit Mont which occupies a prominent position overlooking the entrance to the Gulf of Morbihan. The construction began as an earthen mound with at least one menhir placed at one end. The mound was then partially overlain by a stone-built cairn (Cairn I), which was later enlarged (Cairn II), this new structure containing a passage grave. In a final stage the cairn was again enlarged (Cairn III) to contain two separate passage graves. The original earthen mound probably dates to the mid-fifth millennium BC while the first of the passage graves dates to early in the fourth millennium. What is particularly interesting is that the passage graves incorporate three decorated menhirs. This same phenomenon is also recorded at three other passage graves in the Morbihan, Locmariaquer, Table des Marchands and Mané-Rutual, at all of which decorated menhirs are found to have been reused. The evidence, then, is clear enough. After a fifth-millennium phase of long mounds and menhirs, the menhirs (or at least some of them) were pulled down and incorporated into an entirely new form of burial monument – the passage grave. While the sequence could be interpreted as one of local development, it could equally well be seen to be the replacement of one ideological system with another.

To place the Morbihan sequence in its context it is necessary to look at the north-west coast of Brittany where radiocarbon dating suggests that passage graves were being erected before the middle of the fifth millennium, that is, several hundred years earlier than the passage graves of the Morbihan. The classic site here is Barnenez on the bay of Térénez, not far from Morlaix. The long stone cairn contains eleven passage graves, but is clearly a composite structure that has been extended over time. The core of the monument contained only three tombs, with radiocarbon dates suggesting construction around 4700-4500, while later extensions yield dates in the second half of the fifth millennium. Barnenez is not alone. At several other sites, also on the north coast of Finistère, passage tombs have produced dates indicating construction in the period 4500-4300.

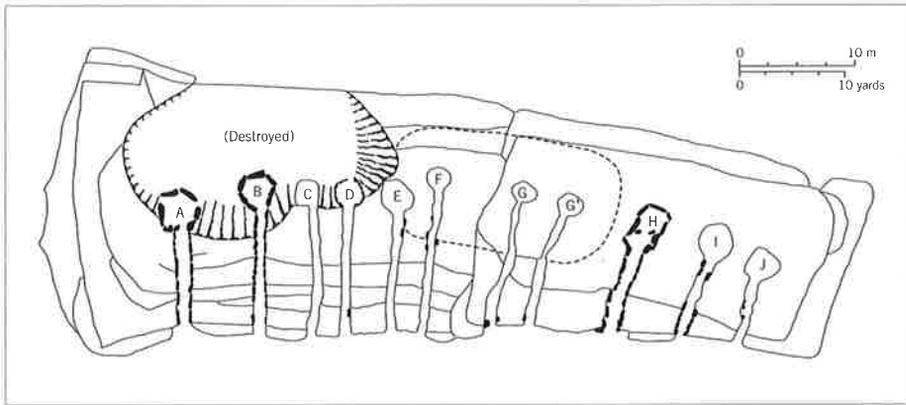
Taken at face value, the evidence would seem to suggest that initially, in the fifth millennium BC, two very different mortuary traditions were practised in Brittany, and only by the turn of the millennium did the passage-grave tradition of the north-west spread to other coastal regions around the peninsula. This pattern – of many different regional traditions converging into one

6.18 The passage grave of Barnenez, near Morlaix in northern Brittany was discovered when a farmer began to dig a quarry into it for stone. Subsequent excavation showed it to be a complex of 11 separate passage graves set within a single mound extended over time. The monument occupies a prominent position visible from the sea.



– may well have been widespread along the Atlantic coastal zone; it is only when the evidence is of sufficient quality that such complexity can begin to be recognized.

In Portugal less can be said about the sequence of development. Megalithic tombs exist in some number, clustering in the Algarve, the Tagus estuary and the coastal regions of the Alentejo. There is much variation but most fall into three basic types: rock-cut tombs, simple dolmens and passage graves. Reliable construction dates are few but thermoluminescent dates of around 4500 BC for passage graves in the valley of the Guadiana suggest a broad contemporaneity with developments in Brittany.



6.19 Plan of Barnenez showing stages in the development of the tomb.

In Britain and Ireland, the 'Neolithic package' is not in evidence before c.4300 BC; megalithic tombs appear a few centuries later. Of the many types of tomb found in the islands, the earliest seems to be simple portal dolmens, comprising a single chamber flanked by a pair of monoliths, and the more complex passage tombs, characterized by a corridor leading to a central chamber. Both types have similar distributions in Cornwall, Wales, northern and eastern Ireland, and the west coast of Scotland and Orkney – a pattern that strongly suggests maritime introduction via the Irish Sea. The earliest dates for the construction of portal dolmens lie in the first half of the fourth millennium; before the end of the millennium the passage grave had developed to its most elaborate form with the great monuments of New Grange, Knowth and Dowth in the Boyne valley, Barclodiad-y-Gawres and Bryn Celli Ddu in north-west Wales, and Maeshowe in Orkney. These monuments represent the pinnacle of passage-grave development – embodying not only a massive expenditure of effort but also refined architectural technique, a sophisticated cosmology and, in some cases, highly complex pictorial expression in the form of rock engravings.

The North Sea and Baltic megaliths differ in many respects from those of the Atlantic. The first megaliths emerge in the Funnel Beaker Culture (TRB), resulting from the acculturation of the indigenous foraging groups and early farming communities. Within the broad zone of the TRB, which stretches across

6.20 Portal dolmens, like this example from Ballykeel, Co. Armagh, Ireland, are very simple structures which may be among the earliest megalithic monuments to be built in Britain and Ireland. The excavation of Ballykeel produced material of Early Neolithic date.



the North European Plain from Poland to the Low Countries, two distinct burial traditions emerge: burial beneath long earthen mounds and burial in stone-built chambers embedded in mounds. The long earthen mounds cover much of the TRB territory, while the stone-built chambers are restricted to Holland, the coast of north-eastern Germany, Jutland and the Danish islands and southern Sweden – a zone never far from the sea. The earliest of the northern megaliths are found on Zealand and were built about 3700 BC, while those in Holland (the *hunebedden*) are somewhat later, dating from 3400 to 3000 BC. In terms of the Atlantic sequence this northern group is late.

The use of the single term 'megalithic' for both the Atlantic and the northern groups of stone-built collective tombs implies that the phenomena are related. While it is quite possible that physical contacts were maintained between the two zones by way of the sea, there is no direct evidence to suggest that this was so. TRB burial rites were varied and differed from region to region. Collective burial was being practised beneath the long mounds, which suggests that, at least among some communities, the bones of ancestors were being collected together after exposure for final disposal. In such circumstances it would be quite natural for communities to develop accessible stone-built chambers within their long mounds so that the bodies of the dead could be deposited at any time. In other words, the rite of collective burial was the driver, the megalithic tomb the result.

The belief system manifest in the construction of the passage grave developed in the Atlantic zone, in Iberia and Brittany, in the first half of the fifth millennium. It embodied a complex cosmology that required some of the tombs to be set out so as to 'capture' the setting or rising sun on the midwinter or midsummer solstice. As part of this cosmology, linear and circular settings of standing stones were erected, the former most spectacularly in the Carnac region, and an intricate art developed involving the 'carving' and painting of the surfaces of the standing stones. This sophisticated complex of beliefs and practices was transported northwards, along the Atlantic sea routes, to Ireland and to western coastal regions of Britain in the last decades of the fourth millennium. Although there is much regional variation between the territories making up this Atlantic megalithic zone, the similarities are such that direct contact by sea must have been maintained over a period of time and in all probability these disparate regions remained in contact on a continuous basis. It is tempting to see cycles of exchange now being geared to religious ceremonies associated with the major monuments drawing people from considerable distances.

From the beginning of the fourth millennium BC the concept of collective burial in megalithic tombs and the associated belief systems spread eastwards, deeper into Europe. In Iberia collective burial was quickly adopted around the

Mediterranean coast as far as Catalonia, while in France it was by the rivers – the Garonne, Loire and Seine – that ideas spread, reaching the Rhône valley and the western flanks of the Alps. What we are seeing here is a flow complementary to that of the jadeite axes from the eastern Alps, which suggests that the Atlantic beliefs and the Alpine commodities used the same networks of exchange following the natural routeways across the peninsula. When discussing the distribution of jadeite axes, we noted that the network linked northwards to the Rhine valley and beyond. Perhaps it was in this way, as well as along the coastal routes, that knowledge of Atlantic concepts of collective burial quickened the development of megalithic tombs among the coastal TRB groups.

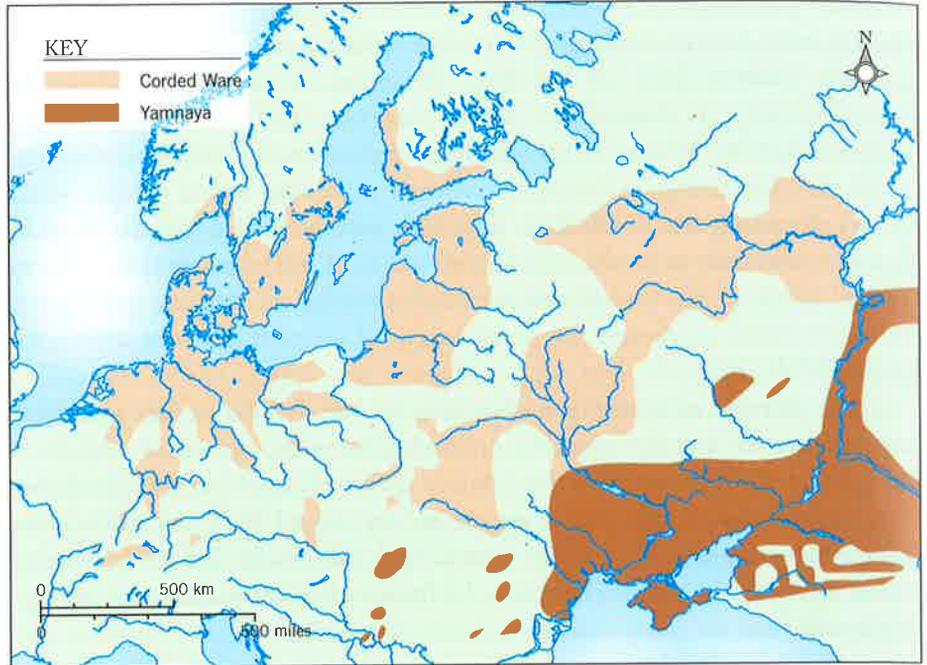
The patterns of interaction, sketched out here for the period 4500–2500 BC, are intricate. But the various strands of evidence tell much the same story: by the mid-third millennium the Atlantic zone of Europe had become linked by corridors of communication, by sea and by way of the great rivers, along which many commodities freely passed, and with them flowed knowledge, belief systems and values. The varied cultures of western Europe were now beginning to share many things.

The Corded Ware/Single Grave Culture

This somewhat cumbersome piece of archaeological terminology refers to a broad cultural continuum recognizable across a vast area of northern Europe, stretching from the Alpine Foreland to the vicinity of Oslo and from the Rhine valley to the Ukraine in the region of Kiev, with its influence spreading much further east through Russia to the Ural Mountains. The cultural continuum originates around 2900 BC and lasts, little changed, for about five hundred years. As the name implies, it is typified by a tradition of single burial with the body placed crouched in single graves or cists, sometimes enhanced with small circular mounds (or barrows) often arranged in groups. Men, women and children are buried in this way, the sexes sometimes being distinguished by different sets of grave goods. Most are accompanied by large beaker-shaped pots, often with their surfaces decorated with impressions of twisted cord applied when the pot was leather-hard before firing. Male graves often contained stone battle-axes and mace heads perforated in the centre to take a handle. These may have been symbolic of the status of the grave's occupant and are evidently copies in stone of the copper and bronze axes originating in the Carpathian region.

What are the origins of the Corded Ware/Single Grave culture? Most persistent has been the view that the culture represents an intrusion by people migrating from the Pontic steppe region; some have argued that it was by this

6.21 The distribution of Corded Ware in northern Europe in relation to the contemporary Yamnaya culture of the steppes.



6.22 Pottery drinking vessels and their associated stone battle-axes from Denmark belonging to the Corded Ware culture. From left to right the examples represent the Early, Middle and Late phases, spanning 3000–2400 bc.



means that the Indo-European language was introduced into peninsular Europe. Others have suggested that the culture developed in a core zone stretching from the mid-Rhine to southern Scandinavia and northern Poland, and that it spread out from there. But it may simply be that what we are observing in the Corded Ware/Single Grave culture is a unifying change adopted by a variety of different indigenous cultures giving the impression of cultural uniformity over a huge area of northern Europe.

Single burial and the symbolism of the beaker and the battle-axe represent a new set of values, widely adopted across northern Europe. The emphasis is no longer on ancestral tombs reflecting long lineages, but is now very much on the individual or the kin group. This could show a shift in values reflecting changes in landholding. The wooded landscape was fast being opened up and land was now being ploughed on a regular basis using the ox-drawn ards that were coming into use. With the open land came an increased use of wheeled vehicles, creating enhanced mobility. Perhaps land was now regarded as the property of the kin group, in recognition of the input of their labour in maintaining its productivity. The siting of burial mounds on tracts of abandoned arable (plough marks can be recognized under some of the barrows) may symbolize the close link between the individual and agrarian productivity. The other commonly found symbols of the burial – the beaker and the battle-axe – were no doubt redolent with meaning, the one perhaps reflecting hospitality (assuming the vessel to have held an alcoholic drink), the other denoting authority.

However one may view the origins and spread of the Corded Ware/Single Grave continuum, it represents the acceptance of a set of common values over a huge stretch of northern Europe in much the same way that the use of megalithic tombs did for western Europe. The megalithic tradition was, of course, much older in origin but for a brief period, in the first half of the third millennium, these two entirely different systems confronted each other. The dramatic changes that brought the old practice of collective burial in megaliths to an end and saw the further spread of the single-grave tradition will be considered in the next chapter.

The Balkans and the Steppe

The spectacular development of copper technology in the later part of the fifth millennium in the Balkans – rather grandly referred to as the Carpatho-Balkan Metallurgical Province – embraces a number of different regional cultures within the Carpathian arc. In parallel with its development, the great expanse of grassy steppe land extending from the Danube's mouth, around the north side of the Black Sea and eastwards to the Volga and beyond, was colonized by



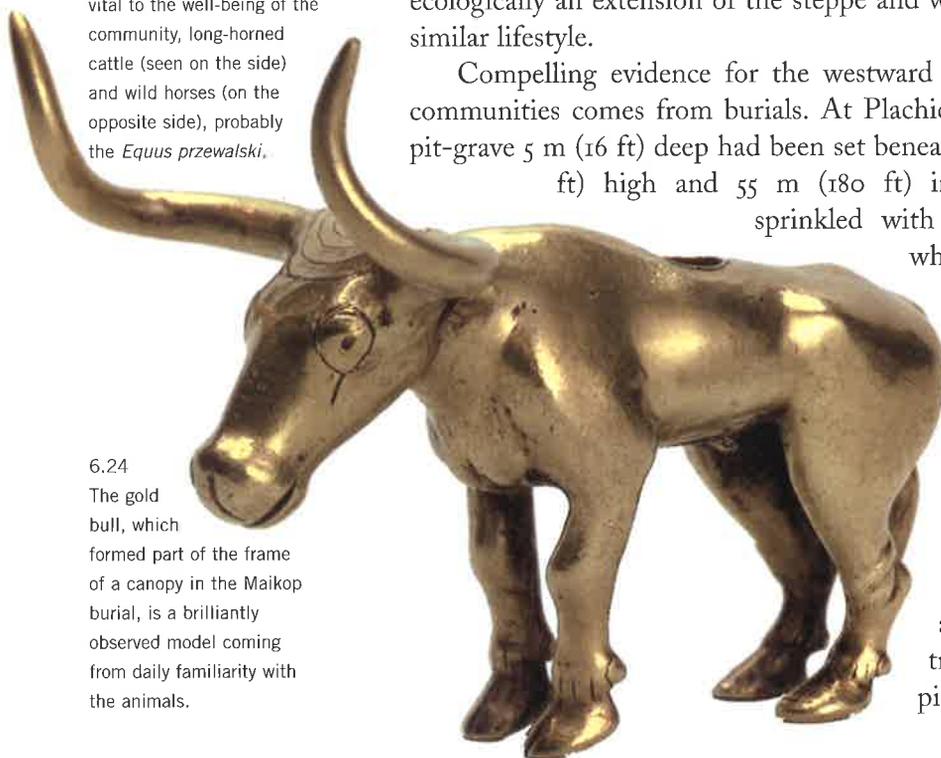
6.23 A silver bowl from a mid-third millennium BC burial at Maikop, Kuban, in south Russia. The craftsman depicts the two animals vital to the well-being of the community, long-horned cattle (seen on the side) and wild horses (on the opposite side), probably the *Equus przewalski*.

communities of pastoral horse-herders. It was here that horses were domesticated not only for food but for riding. The open grassy landscape was ideal for travel on horseback while four-wheeled wagons pulled by paired oxen transported families and baggage at times of seasonal movement. Thus, there developed a very distinctive steppe culture. One defining characteristic was the pit-grave covered by wooden beams and marked by a large mound or kurgan. In some of these burials the wagon, whole or dismantled, was buried with the dead. In this early phase the complex is known as the Pit-grave, or Yamnaya, culture and is the beginning of a very long-lived steppe tradition.

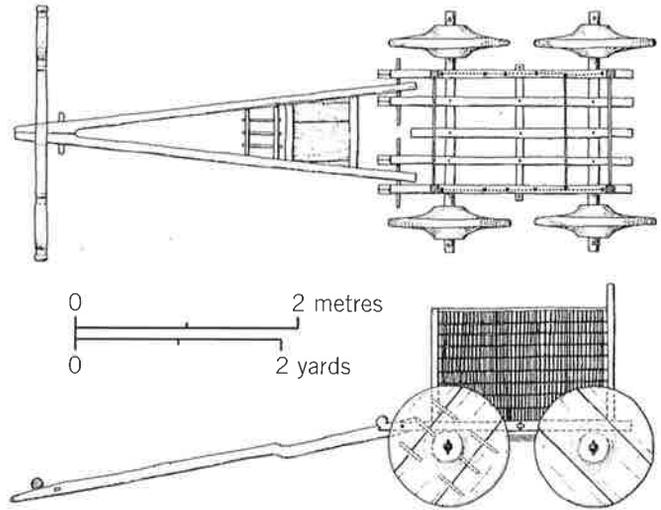
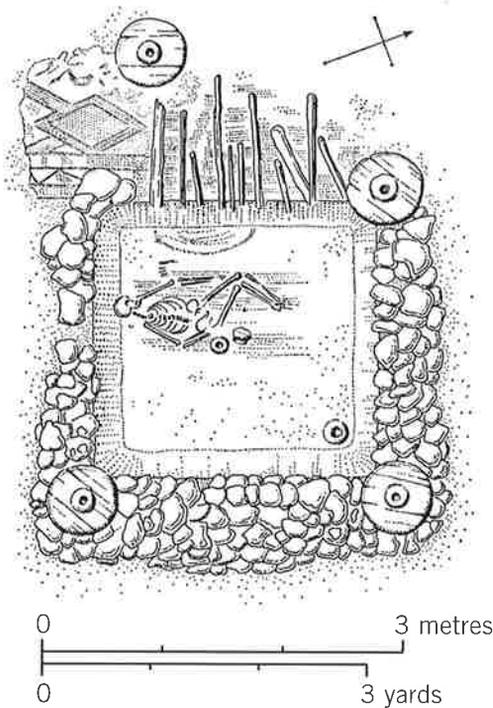
Exchange networks developed between the copper-producing region and the steppe zone. This is most clearly shown by the distribution of copper items of Balkan origin in pit-graves: horses trained for riding may have been given in exchange. Relations between the two regions were active and probably involved the movement of groups of people migrating from the steppe, along the Lower Danube valley and into the Great Hungarian Plain. This is not particularly surprising since the plain is ecologically an extension of the steppe and would have supported a very similar lifestyle.

Compelling evidence for the westward movement of some steppe communities comes from burials. At Plachidol, in northern Bulgaria, a pit-grave 5 m (16 ft) deep had been set beneath a massive barrow 7 m (23 ft) high and 55 m (180 ft) in diameter. The skeleton, sprinkled with ochre pigment, lay upon

what may have been a felt blanket in a lower pit with planks placed over the top. Two solid wooden wheels were then laid in two corners of the upper pit, presumably matched by another pair at the other end which were later destroyed. The burial, quite alien to the local burial tradition, closely resembles pit-graves from the steppe.



6.24 The gold bull, which formed part of the frame of a canopy in the Maikop burial, is a brilliantly observed model coming from daily familiarity with the animals.

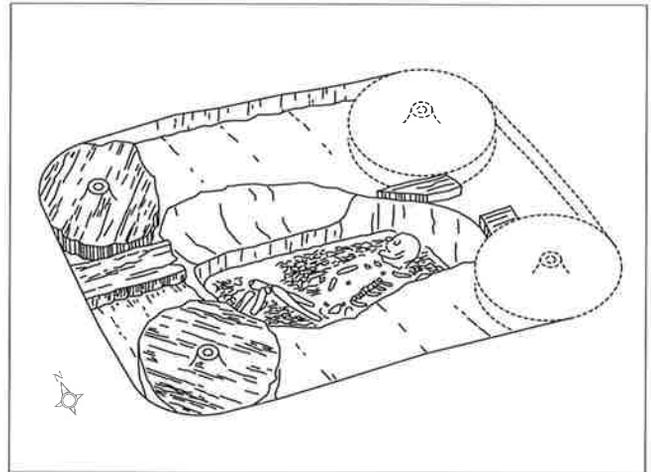


6.25 Vehicle burial from the pit grave of Tri Brata, Elista, Kalmyk, ASSR, dating to the third millennium bc. And, above, reconstruction of a four-wheeled wagon from a second millennium burial at Lchashen in Armenia.

6.26 Pit grave burial from Plachidol in northern Bulgaria, dating to about 3000 bc. The similarity to Tri Brata is striking.

Other burials of a similar kind are found in Hungary, in the flood plain of the Tisza and Körös rivers. Dating evidence for the movement is imprecise but the Plachidol burial dates to around 3000 bc.

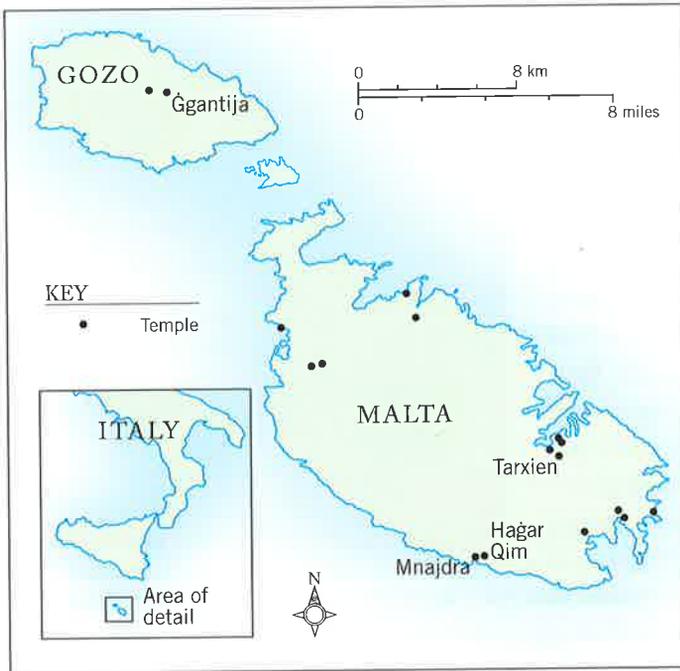
The close links between the steppe and the Great Hungarian Plain, and the westward movements of people from the steppe, is a recurring theme in the pre-history and early history of Europe. This steppe axis is one of the formative structures underlying European development.



The Mediterranean

In the Mediterranean region individual localities developed their own distinctive cultures in relative isolation. It is almost as if the sea and exploration no longer presented a challenge; status was now to be achieved in other ways.

Malta presents an extreme case. Malta and Gozo were colonized towards the end of the sixth millennium, most probably from Sicily, and thereafter maritime contact was maintained, no doubt as part of the exchange networks

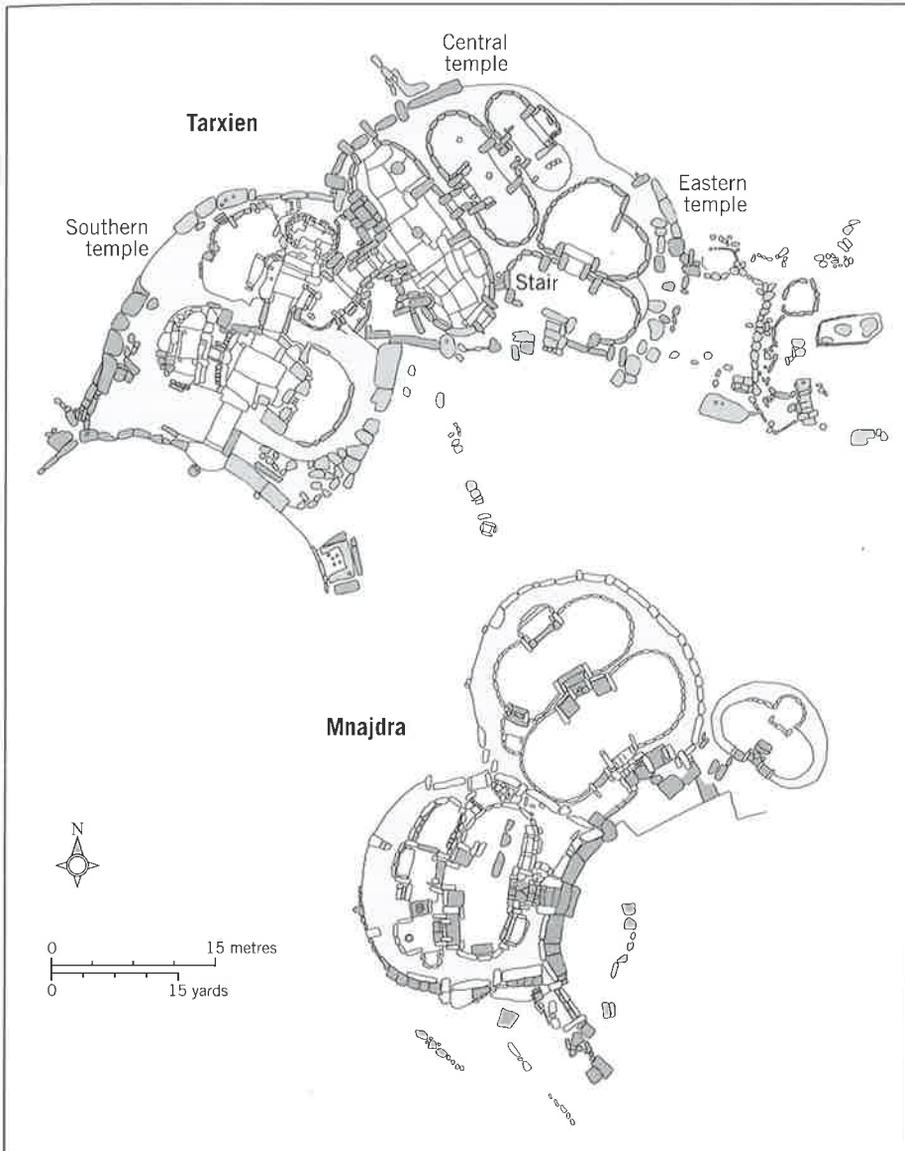


associated with the movement of obsidian and stone axes. But after about 3600 BC links with the outside world waned and a period of isolation set in. Over the next thousand years or so Malta experienced a remarkable cultural development with the construction and subsequent elaboration of seventeen monumental stone-built temples. Although they differed in detail, they were all symmetrically built about a long axis and comprised pairs of lobes, sometimes with a terminal chamber giving rise to four-

6.27 The distribution of Neolithic temples on Malta, dating to c.3500–2500 bc.

6.28 *Below:* The temple of Hagar Qim on the southern coast of Malta.





6.29 (Above) Plan of the Neolithic temple of Tarxien, Malta showing three conjoined buildings of broadly similar plan which had developed over time. (Below) The temple of Mnajdra is another composite structure that has grown over time, reflecting the longevity of these religious sites.

five- or six-lobed structures. Construction involved large orthostats of limestone with drystone walling between. Associated with the temples were massive sculptures of steatopygous (very fat) females, variously interpreted as mother goddesses or priestesses.

The Maltese temples are, by any standards, remarkable: they are unique and owe little to outside inspiration. It is tempting to explain them as the result of indigenous inventiveness, self-nurtured in a period of isolation. It could be that the increasing elaboration of the buildings reflected a

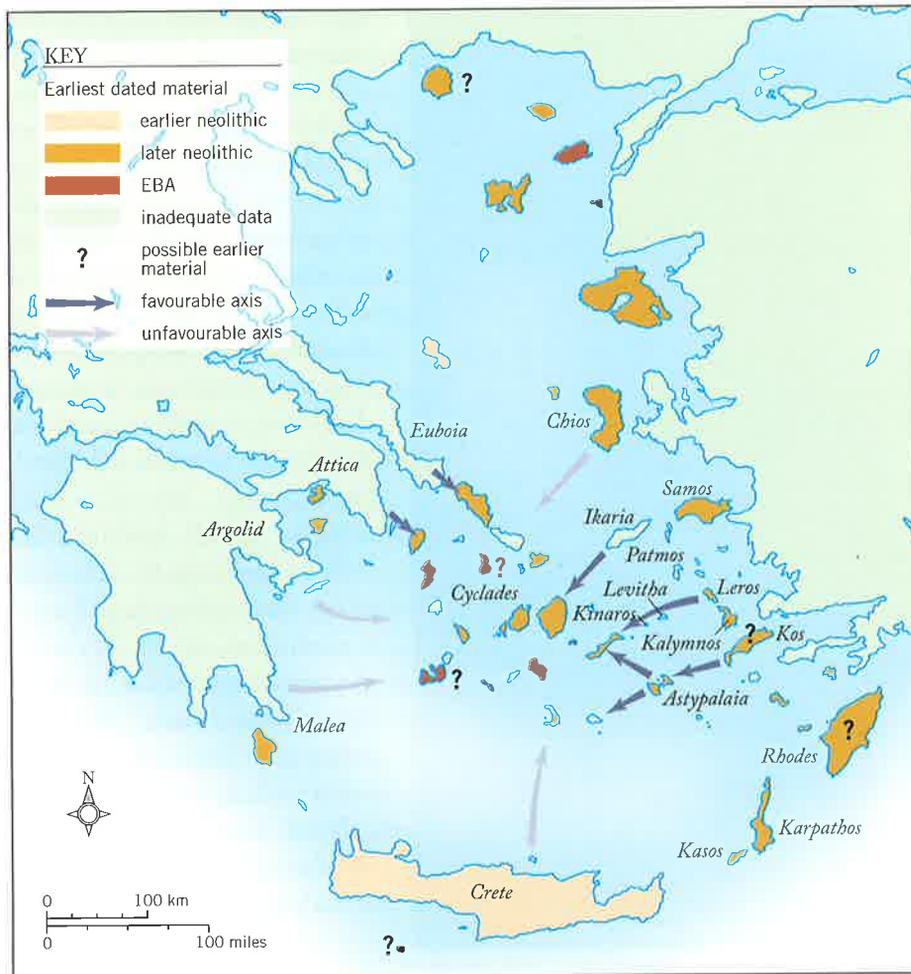
competitiveness between different communities, but a more likely explanation is that the gradual environmental depletion of the islands drew the people to make ever-greater investments in religious worship. In the end their expectations were not met and a crisis ensued from which it took centuries to recover.

A quite different story can be told of another group of Mediterranean islands – the Cyclades in the south Aegean. Here, over the period 4500–2500 BC, the islands became increasingly enmeshed in a maritime network. The earliest evidence of maritime activity begins in the Mesolithic period with the exploitation of obsidian from the island of Melos and the fishing of tuna by the inhabitants of the Franchthi cave in the Argolid, but there is no suggestion that any of the islands were occupied at this time. Crete, to the south of the Cyclades and separated from the group by more than 150 km (94 miles) of open sea, was settled around 6000 BC by migrants, probably from Anatolia, and it may well be that Rhodes was settled at the same time – but of this there is as yet no evidence.

Communities began to establish themselves on the Cyclades in the fifth millennium (Late Neolithic). Most of the major islands in the Aegean were settled by c.3200 BC, with all but the smallest being occupied by c.2600 BC. Besides the generally benign character of the islands which favoured mixed farming, there were also other commodities to be had. The obsidian of Melos was an obvious attraction. Good marble was easily accessible on Naxos and Greater Paros. Naxos also had sources of emery for grinding stone. By the Early Bronze Age Kythnos was producing copper, while on Siphnos silver and lead were available and maybe a little copper. Finally, good potting clay was fairly widely distributed, with the best coming from the volcanic islands of Melos and Thera. Taken together, the Cyclades had much to offer.

The process of colonization still has to be reconstructed in detail, but on present evidence the first islands to be settled were not those closest to the Greek mainland but a group of medium to large islands at the south-east extremity of the group clustering around Naxos, which was evidently of central importance throughout. This might suggest that the original colonizers set off from the coasts and islands of Asia Minor, but the question is best left open pending more evidence.

Mastery of the sea was of crucial importance to the wellbeing of the island communities. Such was the combination of winds and currents that at most times during the year inter-island travel would have been possible, although most of the sailing probably took place in the period from May to September when conditions were at their best. Even then there would have been times when the weather conspired to make sailing inadvisable. Shorter island-hopping trips could have been made at any time provided conditions permitted, but for the longer voyages embedded in social systems of ceremonial



6.30 The Aegean islands seem to have been gradually colonized over a period of about 4000 years, starting with the settlement of Crete in the Early Neolithic period. The islands were more easily approached from the coasts of Asia Minor than from the Greek mainland.

exchange it is likely that set times were adhered to during the late summer months when the farming cycle allowed men to leave the land.

While the existence of sturdy seagoing vessels from as early as the Mesolithic period is not in doubt, there is no direct evidence for the form of the vessels until after 2600 BC, when a series of images inscribed on pottery and carved on rock become available. These artefacts strictly date to the developments described in the next chapter, but the boat-building traditions depicted are likely to have been rooted in the much earlier period. Two types of vessel have been identified: small canoes and more elegant long boats. The small canoes probably represent vessels used for local everyday activities such as fishing trips or hauling cargoes. One rock carving from Naxos actually shows what appears to be the loading of an animal. The long boats are often depicted on flat pottery vessels (inaccurately referred to as frying pans)



6.31 Cycladic boats of the Early Bronze Age are frequently depicted on pottery 'frying pans'. The above example is from the Chalandriani cemetery on Syros. The illustrated vessels are clearly narrow-bodied rowing boats with high decorated prows.

and are far more sophisticated structures, with a raised stem and a high stern post surmounted by a fish emblem. They would have been about 15–20 m (50–65 ft) in length, sufficient to accommodate twenty-five or so rowers whose presence is indicated by schematic oars. Sophisticated long boats of this kind may well have been developed for the ceremonial interactions between the islands characteristic of the more complex social systems that were to flourish in the latter part of the third millennium. For the communities of the Cyclades the period 4500–2500 BC was a time when their maritime culture was fast evolving – this was a prelude to the spectacular cultural developments of the full Aegean Bronze Age, to be considered in the next chapter.

The Transformation of Early Europe

The eighteen hundred years or so covered by this chapter were a time of dramatic transformation across the face of Europe. Populations expanded, new landscapes were occupied and new technologies were developed and disseminated. The extraction and working of copper and gold, and the introduction of woolly sheep and ox-drawn ards contributed to the greatly increased productivity of the times, while four-wheeled carts, horse-riding and sophisticated boat-building and navigation enhanced mobility, enabling commodities, people and ideas to move with rapidity over long distances.

The European landscape now supported a bewildering number of different communities, each with its own distinctive package of material culture, belief systems and social practices. But over and above these local variations it is now possible to discern more widespread configurations reflecting a greater

level of interaction and leading to the adoption of patterns of behaviour and belief across extensive territories. The megalithic zone of the Atlantic seaboard, the Corded Ware/Single Burial zone of northern Europe, the precocious copper users of the Carpatho-Balkan zone and the horse-herding pastoralists of the steppe are among the more significant of the new configurations. But nothing was static: it was a time of change. The rise of the Corded Ware/Single Burial zone overlapped with the end of the megalithic tradition. By the end of the third millennium the western collective-burial tradition had been replaced by single burial similar to that of the Corded Ware zone but characterized by the bell beaker. Meanwhile, in the southern part of the Aegean, a new island culture was forming that was soon to blossom into Europe's first 'civilization'.

Within these broad cultural patterns and trajectories we can see the social fabric of Europe beginning to take shape. It was conditioned, as always, by the nature of the landscape, which determined the lines of communication, and by the uneven distribution of rare resources such as stone and metal, but these geographical 'givens' were now an essential part of the emerging social landscapes. The Europeans of the third millennium had achieved a new level of equilibrium with their environment.

Finally, how much had developments in south-west Asia influenced Europe at this time? The answer would seem to be very little. Woolly sheep are one possible benefit and it may be that solid-wheeled vehicles were first developed in the Tigris and Euphrates valleys and that some knowledge of the benefits of copper may have been learnt from Anatolia. But, that said, the development of European culture was *sui generis*: there is nothing to suggest that its creative energies and trajectories were in any way driven from the east. Europe at this time had a momentum of its own.