CHAPTER SEVEN

Taking to the Sea – Crossing the Peninsula: 2800–1300 BC

The period before us, *c.*2800–1300 BC, saw the pace of change intensify. At the beginning, a kaleidoscope of different cultural groups were scattered across the face of the peninsula. All were rooted in the past, intent on maintaining their distinct cultural identities. But already networks of interaction linked them loosely together, facilitating the flow of desirable commodities such as copper, gold, amber and finely polished stone. The degree of interconnectedness varied, but no community could be said to be completely isolated. By the end of the period Europe's first 'civilization', centred on Crete and named Minoan by archaeologists after the mythical figure King Minos, had come and gone and the face of European society had changed for ever. A rigorously hierarchical system now prevailed across much of the peninsula, evident in the burial record with its emphasis on the elite, while the exchange networks saw a flood of varied commodities transported over very considerable distances. It was almost as though the natural routeways of Europe had coalesced into one great system of intercommunications. And with the new connectedness came individual mobility on an ever-increasing scale. The continent was diversifying and pulling together at the same time.

7.1 *Opposite:* The sacred enclosure of Stonehenge, situated on Salisbury Plain in the centre of Wessex, was first laid out in the Neolithic period about 3000 BC, but the stones which now dominate the site were put up several centuries later. Bluestones were brought from south-west Wales *c.*2600 BC but these were rearranged when the Sarsan circle and the great trilithons were erected *c.*2500 BC. Thereafter Stonehenge remained in active use as a religious centre for 800 years.

Bronze Age Dynamics: An Outline

What characterizes the development of Europe in the third and second millennia BC is the speed of change evident in virtually every region. There is a feeling of energy, of vigour and of a real enthusiasm for innovation and change. It is almost as if the old – that which is traditional and ancestral – is deliberately put aside as communities embrace a pan-European spirit, not because of any political desire for unity, but rather for the excitement of the new. The European world was beginning to open up. This was not a sudden development. Already in the fourth millennium connections along the Atlantic seaways were allowing belief systems to spread rapidly over great distances and at the beginning of the third millennium the Corded Ware/Single Grave culture saw the practice of single burial, and with it a new

attitude to the significance of the individual, extend across large parts of the North European Plain. What happens now, towards the middle of the third millennium, is an escalation in these processes of change.

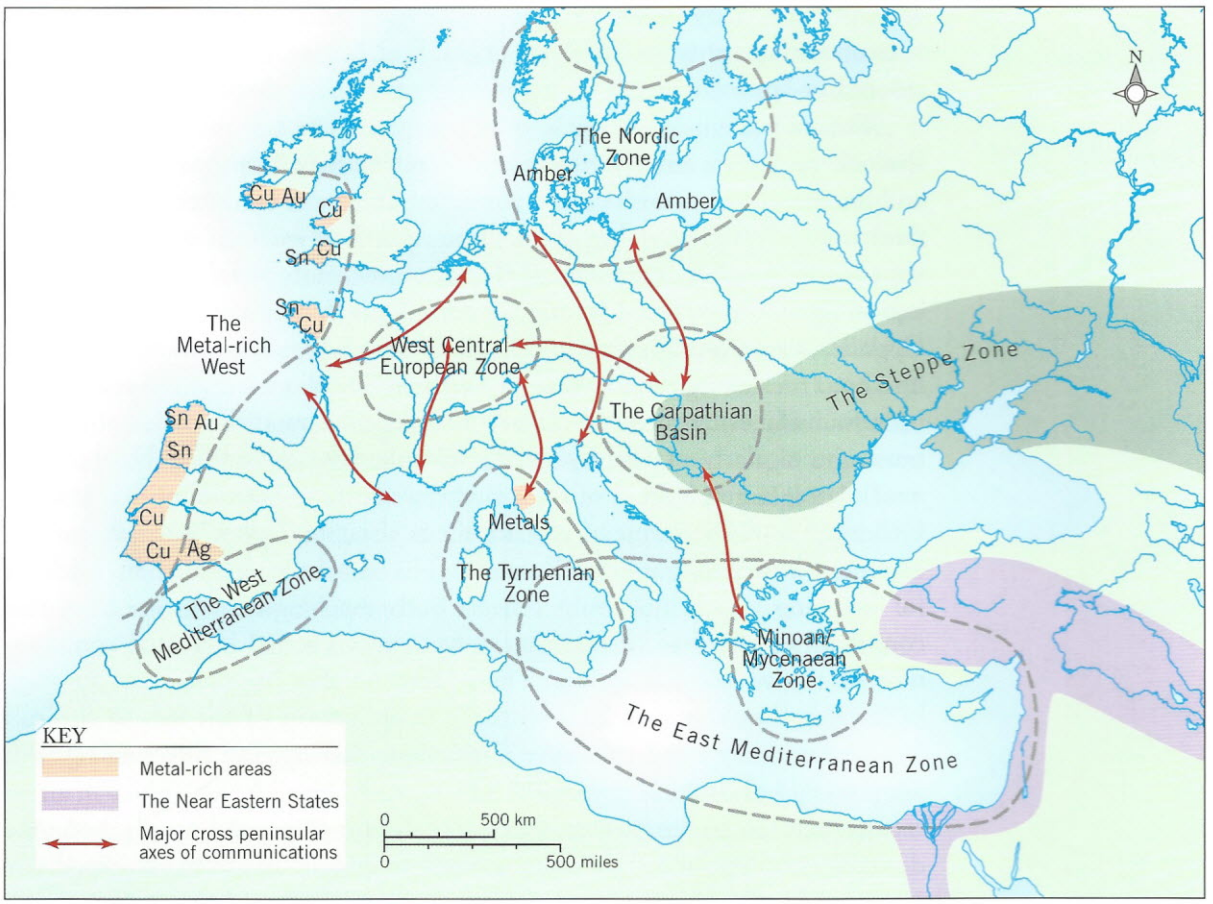
Behind it all lies a stable economic base founded on food production. Livestock were now playing a more significant part, not just for their eventual meat yield but for a variety of ancillary products: wool, milk and its derivatives, and also blood, a useful source of salt that could be tapped from a living beast. It was probably in this period that the European population finally developed lactose tolerance and woollen fabrics became a commodity capable of being produced in surplus and traded in bulk. The beasts, when finally slaughtered, contributed to the all-important feast, which was central to the workings of society.

A stable economic base, allowing the holding capacity of the land to rise, favoured a growth in population and, where the land was especially fertile, could have allowed segments of the population to spend less time engaged in the daily tasks of food production. One of the results of all this was that society now had more energy to invest in social pursuits – feasting and ceremonial – and on creative tasks such as developing technologies and adding value to products by finessing their form and finish. These two strands, each enhancing the other, led to hot spots of innovation springing up across the face of Europe. The most spectacular of these was the palace-centred society that emerged in Crete in the second millennium – the 'Minoan civilization' – but many other communities throughout Europe enjoyed a creative momentum of their own.

Over much of Europe it is possible to distinguish elites through their distinctive, well-furnished burials, often given added prominence by large barrows built over them to create a monument ever-present in the group consciousness. These barrows would have served as time-markers, enabling societies to demonstrate – and to declaim – their history in terms of prominent ancestors and tales of their heroic pursuits.

It is likely that the paramount leaders were regarded as semi-supernatural beings, serving both secular and religious functions. But in complex societies, like those of the Egyptians or the Near Eastern states, a more developed hierarchy existed, with a king at the top exercising divine powers and a separate theocracy performing other functions below him. In the Minoan world, power was vested in a theocratic chiefdom comparable to those evident in other parts of Europe at the time; but with power more centralized and systems more complex, it is possible that some separation of functions had begun.

One of the characteristics of more hierarchical societies is the imperative for the elite to distinguish themselves from lesser beings by their ability to control the flow of desirable goods, their command of knowledge and their



7.2 Europe in the period 2800–1300 BC. The ocean interfaces now support very distinct cultural zones, bound together by maritime exchange networks. These zones are variously linked to centres of innovation occupying route nodes in the heart of Europe.

physical prowess in leadership and battle. This imperative in turn led to a far greater flow of commodities and encouraged mobility among the elite.

Networks of exchange had long been in operation. What changed now was the extent of those networks and the sheer volume of materials that flowed through the arteries of Europe. Most important was bronze – the alloy of copper and tin – an attractive metal, gold-like in colour when untarnished and capable of taking a fine polish. In Europe, once full tin-bronze (*c.*90 per cent copper and 10 per cent tin) had been developed, it was adopted universally, replacing unalloyed copper and the arsenical alloys. The earliest appearance of a regular bronze-using economy is to be found in Britain and Ireland in the period 2200–2000 BC, after which it spread eastwards and southwards through Europe, reaching all parts by 1400–1300 BC. Since the constituents of bronze were not widely found, and tin was (and is) exceedingly rare, bronze took on value as a prestige commodity. Once established, it became highly desirable and the movement of the metal as ingots or as scrap or finished items became

widespread. Many other commodities now entered into the exchange networks in quantity: gold, silver, amber, furs, horses, textiles, oils and exotic stones like lapis and amethyst are all evident in the archaeological record.

The movement of materials in bulk required efficient modes of transport. Bullock-carts were already widely in use and we may suppose that packhorses and donkeys had by now become common. Transport by water was easier and river routes would have begun to come into their own. Maritime networks were also enhanced and seagoing ships become more visible in the archaeological record. In pictorial form, they occur inscribed on pottery vessels in the Cyclades, painted on pottery and in frescoes in Minoan contexts, and carved into hard rock along the coastline of southern Scandinavia. Actual vessels have been found in estuarine mud at various locations around the coasts of Britain, most spectacularly at Ferriby on the Humber estuary and at Dover, while wreck sites, largely devoid of their timberwork, have been identified at Cape Gelidonya and Uluburun off the southern coast of Turkey, and off Sozopol on the Black Sea coast of Bulgaria. The dramatic increase in evidence for seagoing vessels no doubt reflects both the heightened awareness that communities now had of maritime travel and an actual increased commonness of the vessels themselves. There were notable improvements in shipbuilding technology, not least with the introduction of the sail in the east Mediterranean by about 2000 BC – a technique developed in Egypt and quickly adopted by Levantine shipping.

Knowledge, particularly knowledge of distant places and people, became a desirable attribute for those who aspired to power. An overseas expedition mounted by the Greek elite provides the storyline for Homer's *Iliad*, while in the *Odyssey* the hero, Odysseus, attains greatness through his tireless adventures and his survival skills. He returns home not only with honour, but with new knowledge of the alien, awe-inspiring world beyond. That these stories could be told shows that there were audiences who revered the nobility achieved from undertaking voyages into the unknown.

Emerging elites, competition for luxury goods and a new socially determined mobility created a world in which innate aggression could easily flare up into outright warfare. Of this there is ample evidence in the huge quantities of arms and armour found throughout Europe. Short daggers give way to swords suitably weighted for thrusting and for slashing blows; the battle-axe is everywhere present while body armour becomes increasingly common. Although the full panoply of arms and armour developed in the centuries after 1300 BC, the archaeological record is already redolent with signs of aggression.

Mobility begins to break down the earlier cultural isolation. In the west, for example, the 'bell beaker' – a highly distinctive ceramic vessel type – gains wide popularity. It is one of the items accompanying single inhumation

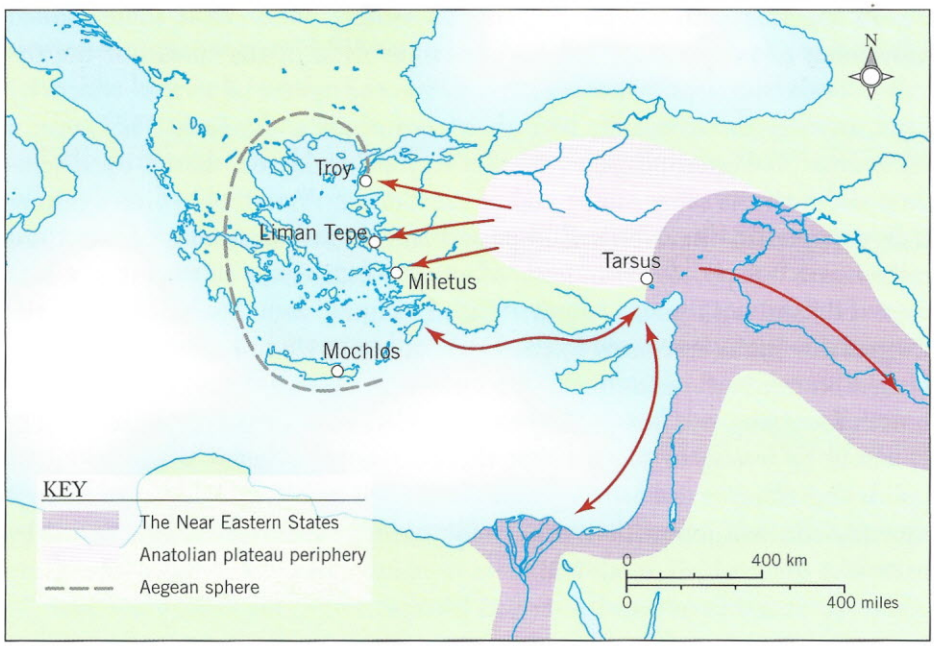
burials together with bronze daggers and archers' gear. While some limited movement of people may well have been involved in the spread of the so-called 'beaker package', what we are seeing is the uptake of a value-system by local societies in accordance with their own needs and beliefs. Thus, over a wide area of western Europe, 'beaker' culture traits are shared by diverse groups. Much the same can be said of the Corded Ware/Single Grave culture that emerged in the North European Plain at the beginning of the third millennium (see pp. 167–9) and was adopted by indigenous cultures in a swathe from Holland to Russia. Another broad cultural zone stretched from the Carpathian Basin eastwards to the Urals, characterized by distinctive single-bladed bronze battle-axes made in a variety of regional styles, and the use of horses for riding and for pulling two-wheeled vehicles with spoked wheels. It would be wrong to suggest that these zones represented single ethnic or political entities, or even thought of themselves as a unified people. At best they are zones of interaction, selectively sharing aspects of culture, linked by networks along which goods and ideas were exchanged: they reflect the interconnectedness that now characterized Europe.

Meanwhile in the East . . .

How far were the changes taking place in Europe the direct result of developments in south-west Asia and Egypt? The Minoan world had developed links with Anatolia and Egypt and by 1300 BC maritime systems were linking the coastal regions of the east Mediterranean in cycles of exchange. This much is not in doubt. But what effect, if any, the enhanced 'trade' with the east had on Aegean developments is less clear. Few would now argue that the impetus for the spectacular Minoan civilization came from outside, though it is quite likely that becoming part of an enlarged trading system helped stimulate the Minoan economy. Beyond that, in 'barbarian' Europe, there is no need to see the various innovative changes in economy, technology and social structure as anything other than the result of indigenous energies.

South-west Asian and Egyptian societies underwent a period of rapid change. In Mesopotamia the third millennium saw the emergence of the Sumerian city-states, culminating in the Akkadian Empire, while in Egypt, in its relative isolation, the pharaonic system of the Old Kingdom flourished. During this time trading systems were established, extending eastwards and down the Persian Gulf to the Indus valley civilization, and westwards across Asia Minor. The Levantine coast of the Mediterranean now became an important route linking Egypt into the broader network.

The centuries 2300–1900 BC saw widespread social disruption. In Mesopotamia the Akkadian Empire came to a sudden end about 2200 BC. In



7.3 Anatolia served as a link between the Near Eastern states and the Aegean sphere. A number of trading ports developed through which trade and exchange were articulated.

Egypt the Old Kingdom ended in 2125 BC and a century and a half of instability ensued, while in the Levant many cities were abandoned at this time. What caused the crisis is uncertain but there is growing evidence to indicate a severe and sudden change in the climate, heralding a period of greater aridity. By 1900 BC, however, recovery was well under way. In Egypt the New Kingdom was established in 1975 BC, and in Mesopotamia new people – the Amorites – established many cities in the south, among which Babylon, under its king, Hammurabi (1792–1750 BC), became dominant. In northern Mesopotamia the city of Assur, commanding the routes between southern Mesopotamia and Anatolia, rose in importance, by the middle of the millennium becoming the centre of growing Assyrian power, while in Anatolia the fast-developing trade networks gave increasing prominence to the city of Hattusa which had become the centre of the Hittite Empire by 1650 BC.

The names of the different polities and their rulers abound and the interrelationships between them, political, economic and military, are intricate in the extreme. What is significant for us is that, in the period of recovery, *c.*1900–1300 BC, the three great centres of innovation – Mesopotamia, Egypt and Anatolia – became consuming societies on a gigantic scale, needing to be fuelled by commodities from far and wide. The lands around the eastern end of the Mediterranean had now been gathered into their sphere to create a single, linked maritime interface stretching from the Dardanelles in the north-west to the Nile delta to the south-east. It was through the many ports along

this sinuous littoral that exchanges with the maritime communities of Europe were to be articulated.

The Eastern Mediterranean: Minoans and Mycenaeans

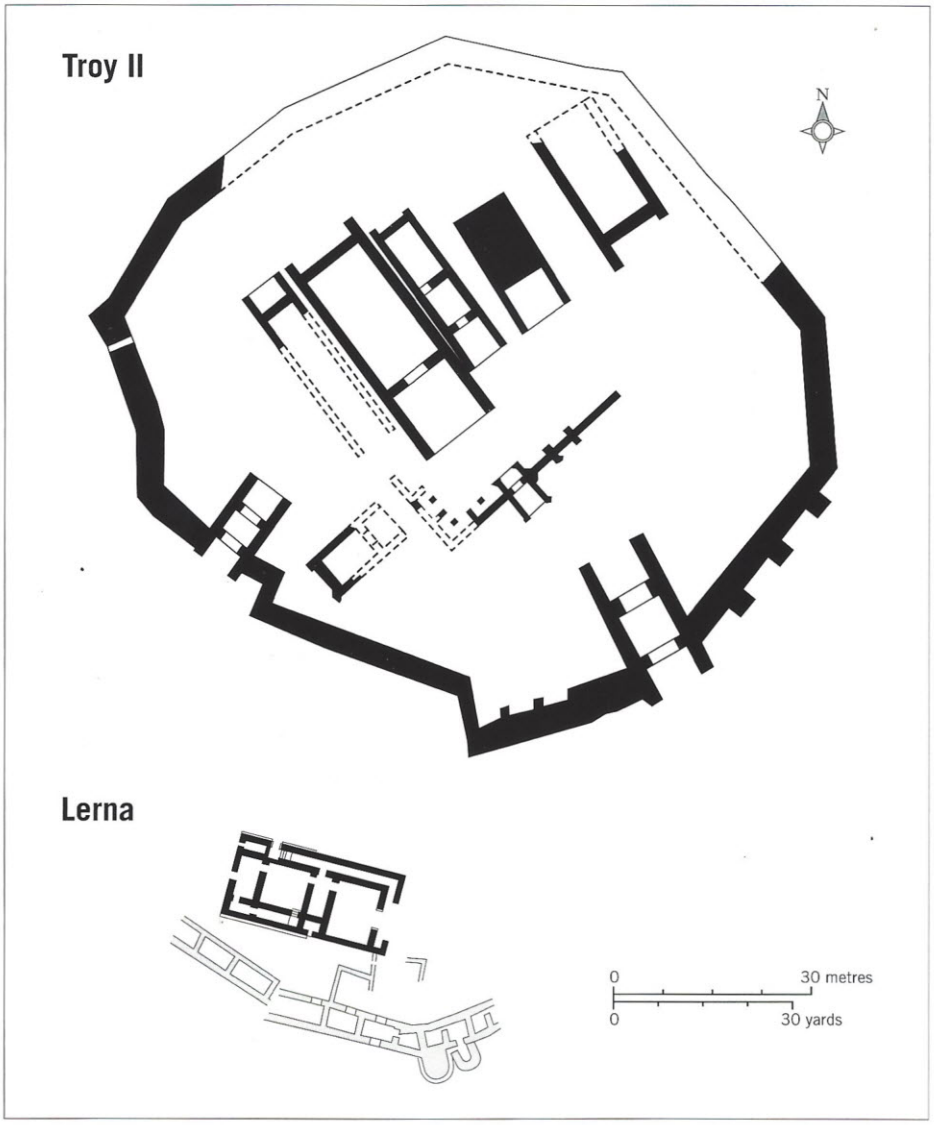
The Cyclades

The Cycladic Islands had the advantage when it came to developing competence to cross the seas. In the earlier period, *c.*3100–2700 BC, long boats powered by many rowers were already actively in use for inter-island journeys, facilitating cycles of reciprocal exchange interspersed with periodic bouts of raiding.

In the period that followed, *c.*2700–2200 BC, a new internationalism becomes apparent, manifest in the growth of settlements within and around the Aegean at nodal points on the mainland coast where land routes reached the sea and on the islands where maritime routes coalesced. The best-known example of such a site is Troy, guarding the Dardanelles. Here, in the phase designated Troy II, a defended citadel, comprising a row of well-built megaron-style houses, rises above a settlement spread at its base. The style and quality of the buildings and the surprising amount of gold vessels and jewellery found in the ruins leave little doubt that the city was in the hands of an elite with access to conspicuous wealth. So too at Lerna, on the Argolid, where a substantial rectangular house – known as 'The House of Tiles' and comparable in size to the megarons at Troy – has been found. From its ruins were recovered a number of clay seals, the detritus from the process of registering, recording and securing goods in transit. Some of these new 'international' sites grew to considerable proportions: Manika, controlling the seas between the Greek mainland of Attica and the island of Euboea, covered 50–80 ha (125–200 acres).

That there was now much greater mobility within the Aegean is apparent from the distribution of artefacts. People were also on the move. At Agia Photia, close to the north-west extremity of the island of Crete, a cemetery has been found embodying practices and materials quite alien to the rest of Crete but closely similar to those of sites in the Cyclades. Here, surely, is evidence for a colony of Cycladic traders who had established themselves in a convenient location to exploit the maritime systems linking Crete and the Anatolian coast.

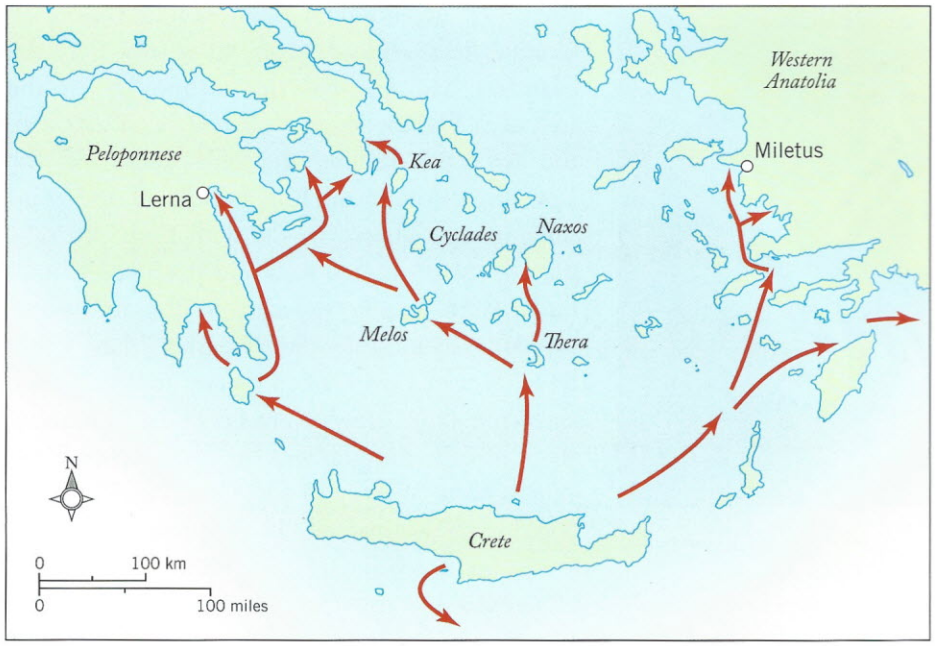
Later, in *c.*2500–2200 BC, a significant change can be recognized in the Cyclades represented by the appearance of a distinctive array of pottery known as the Kastri group (after a fortified settlement on the island of Naxos) found spread widely across the islands, extending to the mainland of Attica. These vessels, designed for pouring and drinking, were made with a monochrome black or brown burnished surface in imitation of metal vessels and are clearly derived from Anatolian prototypes. At broadly the same time many



7.4 Elite enclaves of this period, like Troy and Lerna, are now fortified by strong defensive walls. Within, the prime house, or megaron, dominates the settlement.

settlements were abandoned and a wholly new type of settlement with strong fortifications makes an appearance; Kastri is one of the best-known examples. These changes have been interpreted by some archaeologists as evidence of an intrusion of alien groups from the Anatolian coast lands. This is possible but it could equally be that greater access to Anatolia through the exchange networks led to the adoption of Anatolian drinking rituals, while the dislocation in settlement pattern may have been a result of internally generated social stress; the changes need not have been related.

At about this time the maritime interactions between the Cyclades and Crete change significantly. While Crete is still in receipt of Cycladic copper



7.5 By the end of the third millennium Crete has begun to dominate the Aegean maritime trade networks, benefiting from its central position and productivity to engage directly with the islands and the Greek and Anatolian mainlands.

and obsidian, no other Cycladic goods are found at Cretan sites in contrast to the preceding period. The implication would seem to be that the Cretans were making voyages to the Cyclades in search of raw materials but were no longer prepared to receive Cycladic shipping. In other words, the Cretans were beginning to develop their own exclusive maritime networks. The establishment of a strong Cretan presence, possibly even a colony, on the island of Kythera off the coast of the Peloponnese is a further indication of the newly emerging maritime aspirations of the Cretans. The Cretan challenge to the southern part of the Cycladic maritime network may explain the settlement changes apparent on the Cyclades. With their cycles of voyaging now curtailed, the elite systems of the islands would have been put under stress, creating severe inter-island rivalries. The emergence of strongly fortified settlements thus becomes more understandable.

The following period, 2200–1900 BC, saw a collapse in the dispersed settlement system of the Cyclades and the emergence of a few large centres. This coincides with widespread dislocations in Egypt and south-west Asia, there ascribed to a sudden climatic change to more arid conditions. Whether or not climatic fluctuations were a significant factor in the Cyclades is less clear. It could be that the changes were simply a continuation of trends already under way in the preceding period as the traditional canoe-based maritime systems came under increasing stress. Another factor that had a profound impact was the introduction into Aegean waters of the deep-hulled sailing

7.6 Cast of a Minoan seal stone showing a sailing vessel with a central mast. Vessels of this kind would have been capable of making longer journeys and carrying more bulky cargoes than the earlier rowing boats.

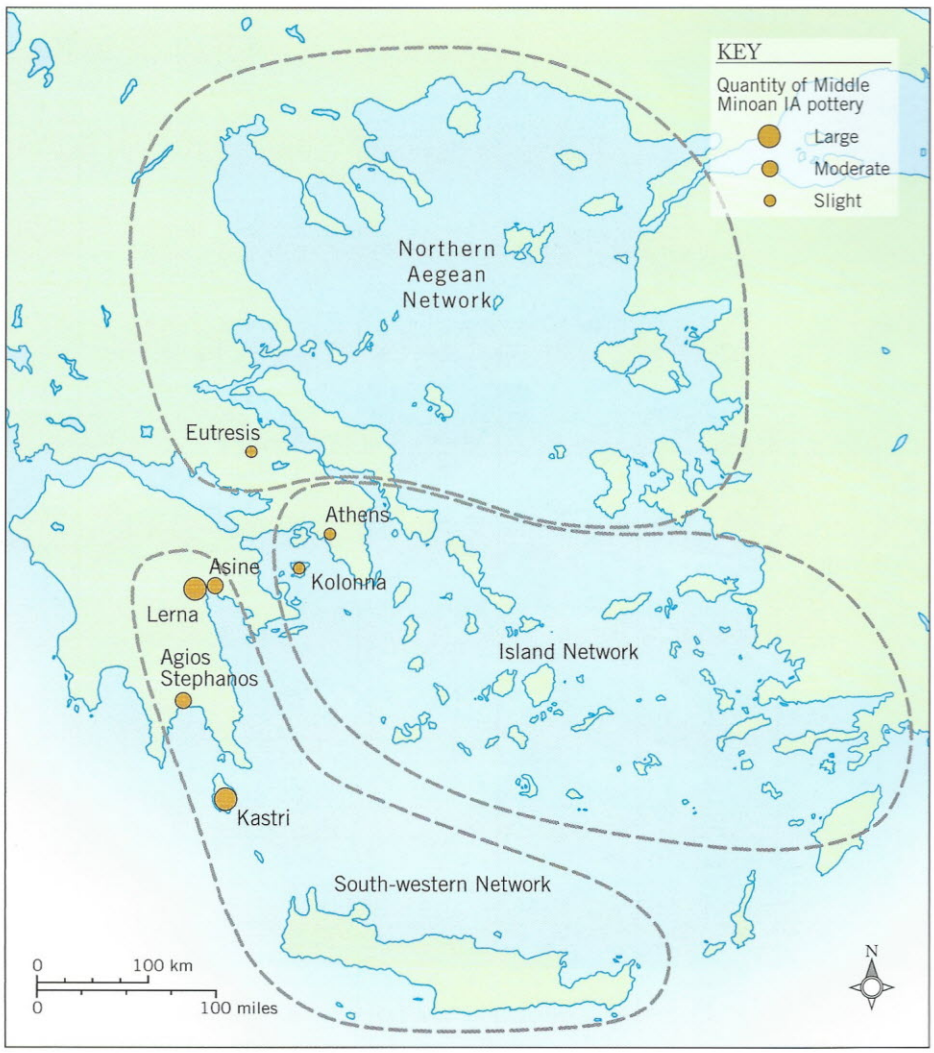
ship. The depiction of these sailing vessels on Cretan seals around 2000 BC shows that the islanders had adopted the technology of the so-called 'Byblos ships' that had been active in the sea lanes linking the Nile delta and the Levantine coast from the middle of the third millennium. These vessels, with their centrally placed, square-rigged sails and deep plank-built hulls, were greatly superior to the traditional Cycladic canoes. In fair weather they could travel at speed over much greater distances, and since the ships' crews were far fewer in number than a full complement of rowers, and the vessels were anyway of increased capacity, they could carry a greater bulk of cargo and stay at sea longer. The Cycladic canoe was no match for these revolutionary vessels.

The appearance of deep-hulled sailing vessels in the Aegean was a death blow to the long-established social systems of the Cyclades based on prowess gained by taking part in canoe flotillas to distant islands. The new ships needed proper anchorages at deep-water harbours. This in turn encouraged the nucleation of settlements around ports, and as greater quantities of supplies could be transported with ease, so the population of the port settlements grew, increasing security in the event of attack. The changes set in train by the advent of the sailing ship were profound indeed.

The Cycladic network continued for a while, though in a modified form, linking the islands and the adjacent mainland to the east and west. This was the situation around 2000 BC as the Aegean world was poised on the brink of dramatic change. For the next half-millennium, Minoan Crete was to assume hegemony of the southern Aegean – an interlude remembered in the later Greek tradition as the 'Thalassocracy of Minos'.

Crete and the Minoans

The discovery of an advanced Bronze Age culture on Crete, which could justifiably be called a 'civilization', began with the excavations of Sir Arthur Evans at Knossos in 1900. Since then numerous expeditions have expanded our understanding of the spectacular world of the Minoans – a name chosen with insight and panache by Evans though with little basis other than in mythology. A detailed discussion of Minoan Palatial society is not possible within the limits of the present book, but a brief sketch must be given before we can consider its place in the development of the Aegean Bronze Age.



7.7 By the beginning of the Middle Bronze Age, *c.*2000 BC, three distinct trading networks had emerged in the Aegean and are clearly reflected in the archaeological evidence.

Until *c.*2000 BC Crete played a relatively minor role in regional developments, not least because of its comparative isolation. But with the advent of the deep-hulled sailing ship, able to make longer journeys at greater speeds, the position of the island, conveniently placed between the Aegean, Anatolia and Egypt, began to give it an advantage in the more adventurous long-haul journeys now becoming the norm. The island soon began to assume a central position in the trading networks. The period 1950–1700 BC saw the development of a series of monumental regional centres, usually referred to as 'palaces', at Knossos and Mallia on the north coast of the island and at Phaistos on the south coast. These palaces were surrounded by much larger settlements. Some time around 1700 BC there was a devastating earthquake that caused extensive

7.8 The palace of Knossos has been extensively excavated and is now displayed to the public. The aerial photograph gives a clear idea of the extent of the palace and the way in which it is arranged around a large central court.

destruction, but such was the stability of the society that the palaces were immediately rebuilt and new ones were erected at a number of other sites, including Kato Zakros at the eastern end of the island and probably at Chania in the north-west. These sites continued to flourish until *c.*1450 BC when they were destroyed in what appears to have been a single phase of conflagration, though whether through a natural catastrophe or as a result of human activity is unclear. Only Knossos was rebuilt after the destruction. The historical sequence is, therefore, comparatively simple, with two Palatial phases, Old and New, followed by a Post-Palatial phase to accommodate the last stage of the occupation at Knossos lasting to *c.*1050 BC.

The palaces are generally similar in form and comprise a number of different functional areas. Focal to them all is a large, open central court around which are rooms for residential, ceremonial, performance, manufacturing and

storage use. Storage facilities are particularly impressive, providing space for ranks of large storage jars (*pithoi*) and rows of below-ground silos and granaries. At Knossos the silos in the west court could hold sufficient grain to feed eight hundred people for a year. The discovery of stamped seals together with lists written in various scripts (hieroglyphic, Linear A and Linear B) shows that complex systems of control and accounting were in operation. Evans was probably correct in his assumption that the palaces were the residences of the elite – the kings and sub-kings – but they were also centres of communal storage and redistribution: places where commodities in the form of tithes or gifts could be assembled and controlled, later to be redistributed by means of direct gifts to equals or in recognition of services, or more indirectly by the provision of feasts. In the palace workshops, raw materials were converted by resident craftsmen into commodities of enhanced value. In the great courtyards performances and religious ceremonies could be staged in the presence of the elite and here, or in the secondary courtyards attached to some palaces, emissaries and subordinates could be given audiences. In other words, the palaces were central sites where all the functions necessary to the maintenance of the state could be enacted.

The palaces, and the cities that grew up around

7.9 Crete in the Bronze Age showing the distribution of the palace centres and the mountain sanctuaries.

7.10 *Below:* The Linear A script inscribed on a clay tablet found in Aghia Triada, on the southern coast of Crete.

them, were only one element of the settlement system. There were also small towns like Gournia, Palaikastro and Myrtos, each clustered around a central courtyard house, most likely the residence of a local community leader who perhaps served as an administrator answering to the palace authority. And in the surrounding countryside were many isolated farms like the small establishment at Vathypetro with its storeroom full of *pithoi*, its olive and grape presses, and cluster of sheds and barns. The landscape was settled, ordered and productive, and well able to support the complex state system that had emerged with its many groups of full-time specialists – priests, scribes and recordkeepers, wall painters, stonecarvers, potters, bronzeworkers, seal-stone engravers, jewellers and many others. Each of the palace centres would have been self-contained under its own ruler, but it is quite probable that all were subservient to the king in residence at Knossos.

7.11 *Opposite:* The citadel of Mycenae from the air. The defensive wall was extended in the thirteenth century to include the early shaft graves of Grave Circle A (bottom centre). In the centre of the site at the highest point lies the palace (megaron). Mycenae dominates the route from the Gulf of Argos to the Gulf of Corinth.

Overseas trade seems to have intensified over time. Already in the Pre-Palatial period an enclave of Minoan traders lived on Kythera and in the mid-sixteenth century it seems that another group settled in the Nile delta at Tell el Dab'a, where wall paintings in Minoan style have been found. Other enclaves may well have gained a foothold on the coasts of western Anatolia. Minoan pottery has been found at several sites, including the ports of Miletus, Iasos and Knidos.

Imports to Crete abound. Large oxhide ingots of copper have been found at Aghia Triadha, Tylissos and Zakros which isotopic analysis shows probably came from south Russia or Afghanistan. Afghanistan was also the source of the lapis lazuli and quite possibly the tin arriving on the island. These commodities would have travelled over land by well-established routes through Anatolia to one of the west-coast ports and thence by ship to Crete. Silver came from the Laurion mines in Attica and from the island of Siphnos. Fine stone for making vessels arrived from Greece and from Egypt: Egypt may also have been the source of the gold used in small quantities in the palace workshops and of elephant ivory, as well as of finished items including stone vessels, statues, scarabs and other small trinkets.

In return Crete had much to offer: woollen fabrics, wine, olive oil, scented oils dispatched in distinctive stirrup jars, ointments packaged in fine stone vessels, medicinal herbs and good timber. All were desirable products welcomed in Egypt, a major consumer with few natural resources of its own. Egyptian texts also refer to lichens to make embalming fluid brought in from 'Keftiu' – the name used at this time by the Egyptians for Crete. In the reign of Tuthmosis III (1479–1425 BC) tomb engravings depict men from Keftiu in the ranks of tribute-bearers carrying Cretan vases of gold or silver. The annals of Tuthmosis also record the presence of ships from Keftiu in Levantine ports loaded with cargoes of poles, masts and great trees destined for Egypt, though it is not clear whether

7.12 The settlement of Thera on the island of Santorini was buried in ash at the time of a devastating volcanic eruption which altered the shape of the island. The houses of the Bronze Age settlement are exceptionally well preserved including the West House where the walls of one room were found to be decorated with a frieze depicting a naval expedition. The frieze provides incomparable details of sailing ships of the period in all their variety as well as the architecture of the settlement and the lush land around.

the Cretan ships had picked up their cargo of timber in the Levant or were simply stopping off there on a circuitous route down to Egypt.

Who were the carriers of all these goods? The simplest explanation would be to suppose that there was now a seafaring class resident on Crete and under the control of the Cretan overlords. These men would set out on their maritime expeditions as the spring sailing season opened, carrying tribute for their masters to prearranged ports to establish diplomatic relations or to repay obligations. On their return journeys they might bring back gifts for the Cretan elite. How much true trade there was is impossible to judge, but trusted ships' masters might have been given some leeway to acquire goods in foreign ports on an entrepreneurial basis. Once back in the home port at the end of the sailing season, there would have been ample work to occupy the men in repairing their vessels and building new ones. In addition to the Cretan 'merchant navy' it is

7.13 Mycenaean Greece in the fourteenth and thirteenth centuries BC. All known sites are plotted, giving an idea of where the main centres of population were clustered.

highly likely that ships from Egypt, the Levant and the southern coasts of Anatolia bringing tribute and merchandise visited the ports of Crete.

Our knowledge of Minoan vessels is limited to seal engravings of deep-hulled sailing vessels dating to *c.*2000 BC and a remarkable series of painted reliefs found at Akrotiri on the island of Thera in a building destroyed by the eruption of the volcano probably some time in the sixteenth century BC. Some of the vessels appear to have been decked out for a festival or maritime parade, while others seem to be involved in a naval expedition. The size and style of vessels varies. One is shown in full sail with steering oars slung aft, others are depicted as being propelled by paddlers while the vessels involved in the naval expedition appear much sleeker and less cluttered. The Thera paintings are ample demonstration that there now existed an established and assured tradition of shipbuilding.

Enter Mycenaeans

Minoan civilization was flourishing when, early in the fifteenth century BC, palaces, towns and villas, with the exception of Knossos, were devastated by fire, leaving most of the sites abandoned. The cause of the destruction continues to excite: natural catastrophe, internal strife or external attack have all been suggested, with the weight of opinion favouring the last. After the destruction influences from mainland Greece greatly increase. Mycenaean material culture replaces Minoan, mainland-style chamber tombs with weapon burials are introduced, and the language of administration, recorded in Linear B script, is now Greek, replacing the earlier non-Greek of Linear A. Crete had evidently been incorporated in the Mycenaean sphere though whether by armed invasion or peaceful annexation remains unclear.

The name 'Mycenaean' is an archaeologically imposed term used to describe cultural developments centred on the Greek mainland dating from the seventeenth century BC until towards the end of the millennium. During this period a number of centres of power emerged under the control of elite rulers. They shared a broadly common culture and may have owed allegiance to an over-king living at Mycenae in the Peloponnese.

7.14 A bronze dagger blade of *c.*1550 BC from Shaft Grave Circle A at Mycenae inlaid with gold and silver to depict an animal hunt. The large shields are of types described by Homer.

Mycenaean society was a world of warrior heroes – a world hauntingly echoed in Homer's *Iliad*. The leaders lived in 'palaces' based on the megaron house and buried their dead first in shaft graves typified by the famous Grave Circles at Mycenae and later in huge tholos tombs (corbelled structures shaped like beehives) like those clustering outside the citadel of Mycenae and close to the palace at Pylos. It was this culture that spread to Crete, establishing its power base at Knossos.

The Mycenaean palaces of mainland Greece developed apace after about 1400 BC. Clusters of buildings spread out around them and many were surrounded by massive walls built of Cyclopean masonry, using huge stone

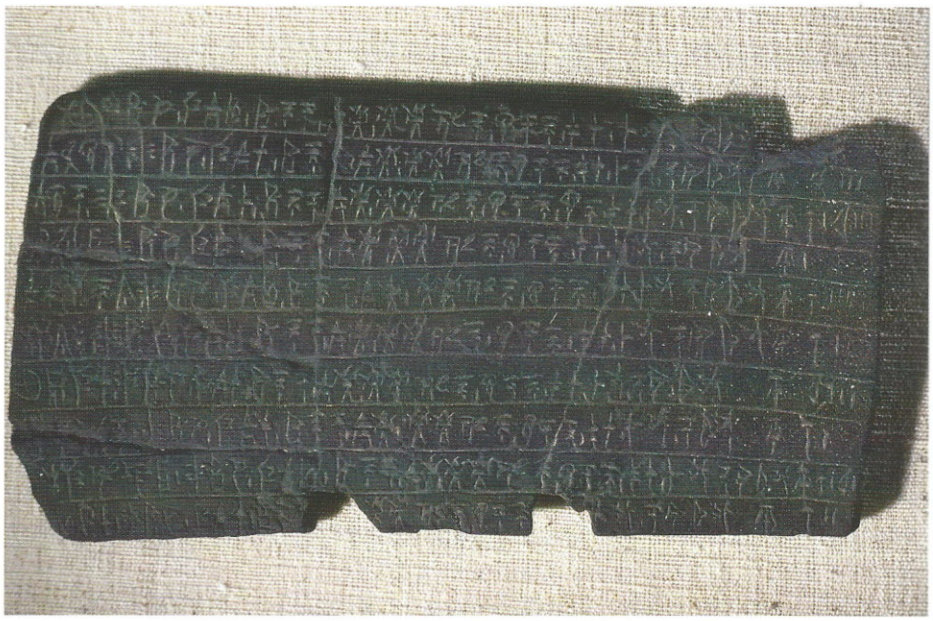
blocks redolent with power. The entrance to the citadel of Mycenae, with its corridor approach and four-square gate surmounted by a pediment depicting a pair of heraldic lions, proclaims the might of the resident king and, even today, awes the visitor.

The heroic warrior society of the time is well demonstrated by contemporary depictions of warriors in wall paintings, seals and metalwork. Weapons and armour abound, most famously the sophisticated suit of bronze body armour and the boars'-tusks helmet found in the chamber tomb of Dendra in the Argolid. And if any further proof were needed, chariots, armour, weapons and fighting men, amassed in preparation for military adventures, are listed in the Linear B texts.

The emergence of an elite in Greece whose authority was based on heroic prowess echoes what was happening in many other parts of Europe at about this time, the only significant difference being the facility of the Mycenaean leaders to manipulate resources – a power reflected in their profligate use of gold, silver, ivory, amber and the like. While their personal authority would have attracted exotic gifts, it was their locations, set in highly fertile regions astride major routes, that allowed them to command the flow of commodities. The Mycenaean world lies at the interface between the consuming zone of the east Mediterranean, feeding the states and empires of the east, and the highly productive expanse of peninsular Europe. The key node in this system was the Plain of Argos at the head of the Gulf of Argos – easy to approach by ship and from where, by a comparatively short overland portage, it was possible to reach the Saronic Gulf which provided access to the north Aegean, and the Gulf of Corinth and thence to the Adriatic and Italy.

7.15 A suit of bronze body armour from the Mycenaean chambered tomb at Dendra in the Argolid. The cuirass is made of telescoping plates of bronze with hinged shoulder pieces and a separate neck guard to provide a degree of flexibility. The helmet is made of boars' tusks.

Barely 10 km (6 miles) from the head of the gulf the early inhabitants chose the hill of Mycenae as their base. A rich and fertile landscape and full command of the overland route ensured that Mycenae rose to a position of



7.16 Clay tablet inscribed in Linear B text from the palace at Pylos.

supreme dominance. The other palatial centres elsewhere in Greece were also located so as to control sufficient fertile land to support large populations, and to oversee communications by land or by sea. The importance of local production is well illustrated by the Linear B tablets found at Pylos, which give detailed accounts of the manufacture of woollen and linen fabrics and perfume. To these must be added wine, oil and grain – the staple products of the Aegean world.

Mycenaean pottery is found around the shores of the east Mediterranean and as far west as the Tyrrhenian Sea. But pottery distributions do not necessarily mean that the exchange networks were dominated exclusively by Mycenaean overlords or even by Mycenaean shipping. Coastal communities from other regions of the east Mediterranean must by now have been heavily involved in the trans-shipment of goods and it remains a possibility that the mainland Greek polities played little direct role in these matters themselves.

Something of the complexity of the problem is well illustrated by the cargoes of two ships wrecked off the southern coasts of Anatolia – the Uluburun wreck, which went down in the fourteenth century BC, and the Cape Gelidonya wreck, which met its fate a century or so later. The Uluburun wreck carried a mixed cargo dominated by 354 oxhide ingots of copper weighing in total 10 tons (10.16 tonnes), 120 bun-shaped copper ingots, *pithoi* packed with Cypriot pottery, and Canaanite amphorae containing about 1 ton (1.016 tonnes) of terebinth resin. Packed around this bulk cargo were ingots of tin weighing 1 ton (1.016 tonnes) and coloured raw glass, scrap gold and silver, an

7.17 Diver excavating the shipwreck of Uluburun. He is stepping on a pile of oxhide ingots of bronze and carries an amphora.

7.18 *Right:* Mycenae commanded the crucial cross-peninsular route which led from the Gulf of Argos to the Gulf of Corinth, and the Saronic Gulf and was the focus for a number of roads. The plain of Argos was quite densely settled in this period with another fortified palace at Tiryns nearer to the coast.

elephant tusk cut into sections, twelve hippopotamus teeth, logs of Egyptian ebony and ostrich shells. Additional items which may have belonged to the crew included two swords, one Syrian and one Mycenaean, Syrian pendants, a Mesopotamian cylinder seal, an Egyptian scarab and various Mycenaean pots. Something of the organization of the operation is hinted at by two wooden writing tablets with ivory hinges and a pair of weighing scales with sets of weights. The cargo was clearly of very considerable value and may indeed have been a tribute in transit to a king. The most likely point of departure for the

7.19 The Bronze Age ship which was wrecked at Uluburun on the Turkish coast was probably engaged in a circular voyage circumnavigating the eastern Mediterranean picking up rare raw materials en route. Which was its port of origin is unclear but it may have been a Cypriot vessel.

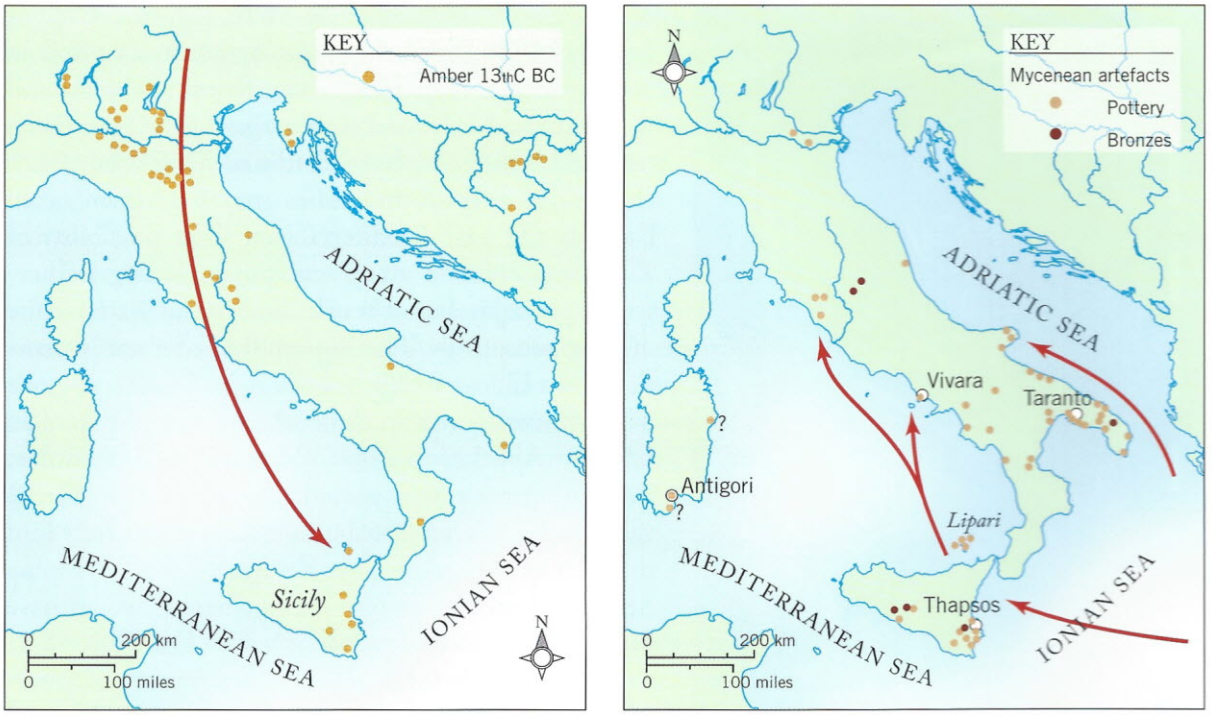
vessel was Cyprus or, perhaps, one of the Levantine ports. Who the intended recipient of the cargo was we can only guess – perhaps it was one of the Mycenaean overlords. But even if these speculations are correct they provide no clue as to where the vessel was built or the ethnicity of its master.

The Cape Gelidonya cargo was altogether different, comprising copper ingots and copper scrap from Cyprus and tin ingots from an unknown source, perhaps the stock of a merchant or bronzeworker. Together the wrecks offer an incomparable insight into the complexities of maritime exchange in the east Mediterranean in the late second millennium BC, linking the European kingdoms to the empires of the east.

The Tyrrhenian Sea and Beyond

The discovery of Mycenaean pottery and bronzework in Italy, Sicily, Malta and Sardinia shows that communications had been established between the east Mediterranean and the Tyrrhenian Sea after about 1600 BC, but to interpret this as evidence of Mycenaean exploration of the west is to force the material remains beyond their reasonable limits. All that can safely be said is that voyages took place between the two seas.

Maritime networks were already well established in the central



Mediterranean (see p. 119). These networks, linking the central Mediterranean islands to North Africa, Italy and Liguria, continued to develop throughout the third and second millennia, providing the structure for the distribution of Mycenaean and Cypriot finds around the Tyrrhenian Sea. Lipari in the Aeolian Islands, the principal source of obsidian and focus of the Neolithic network, was chosen by east Mediterranean entrepreneurs as their earliest entrepôt. It lay conveniently sited in relation to the main shipping routes and could boast a maritime tradition going back for centuries. At about the same time another landfall was established on the tiny island of Vivaria close to Ischia in the Bay of Naples, whence it would have been possible to access the northern coasts of the Tyrrhenian. Contact between the two seas continued to develop. By the fourteenth century BC a major port of call had been established at Scoglio del Tonno, near Tarento in the instep of southern Italy, and by the thirteenth century a port near Antigori on the Gulf of Cagliari was providing direct access to southern Sardinia. On Sicily, Thapsos on the east coast provided entry to the island. The east Mediterranean ships' masters probably chose one of the five major ports as their favoured *emporium* (market) and it was there that the major exchanges took place, with local shipping transporting goods to and from the more distant regional ports.

The Mycenaean and Cypriot pottery arrived presumably as containers for

7.20 The Italian peninsula was closely linked to the east Mediterranean trade network in the Mycenaean period as the distribution of objects of Mycenaean origin demonstrates. One of the commodities which it may have been trading is amber from the Baltic which was transported across the Alps to the Po valley and thence to the south.

7.21 A rich burial of the Argaric culture from Cerro de la Encina, near Granada, in Andalucía. The status of the burial is indicated by its two gold earrings, a copper dagger and four fine pottery vessels.

oils, unguents and other desirable luxuries. Cypriot copper, in the form of oxhide ingots, was carried in some quantity. Ingots have been found on Lipari and in southern Sicily and more than fifty have been recorded scattered across Sardinia. There are a few clues as to what commodities may have been taken back to the east Mediterranean. One possibility is alum, important in many activities including leather-working, the dyeing of textiles and in the manufacture of pharmaceuticals. The importation of alum is mentioned on Linear B tablets from Pylos and Tiryns; one of the prime sources in classical times was the Aeolian Islands. Another possible commodity was amber. Baltic amber was transported across Europe to the Po valley and scattered distributions throughout Italy hint that it may have passed, via Etruria, to the Tyrrhenian Sea and thence to eastern Sicily where it would have been available to traders.

It is difficult to gauge the intensity of the interaction between the two seas. It was probably on a modest scale but by the thirteenth century BC pottery and metalwork in Mycenaean style were being made on Sicily, possibly by artisans who had arrived with the traders and stayed to serve the local markets.

The extent to which east Mediterranean entrepreneurs were able to trade in the Tyrrhenian Sea was determined by the existence of local maritime networks with which they could articulate. The virtual absence of Mycenaean finds to the west of Sardinia is a strong indication that, at this time, the west Mediterranean was a world apart, but the occasional ship's master would surely have been tempted to venture west, lured on by curiosity. The only evidence that this might have happened is two sherds of Mycenaean pottery found in southern Spain, at Montoro in the valley of the Guadalquivir, upriver from Cordoba. The west Mediterranean was to remain largely unknown to the emerging civilized world for a few more centuries.

Yet the west was not without its own cultural developments. In Iberia one well-defined cultural group, called the Argaric culture after the settlement of El Argar, developed in south-eastern Spain between Granada and Murcia. The region is semi-arid but the river valleys provided ample cultivatable land, and extensive upland pastures were available for flocks and herds during the summer months. The region was also metal-rich, with ample supplies of copper and significant, but more restricted, deposits of silver.

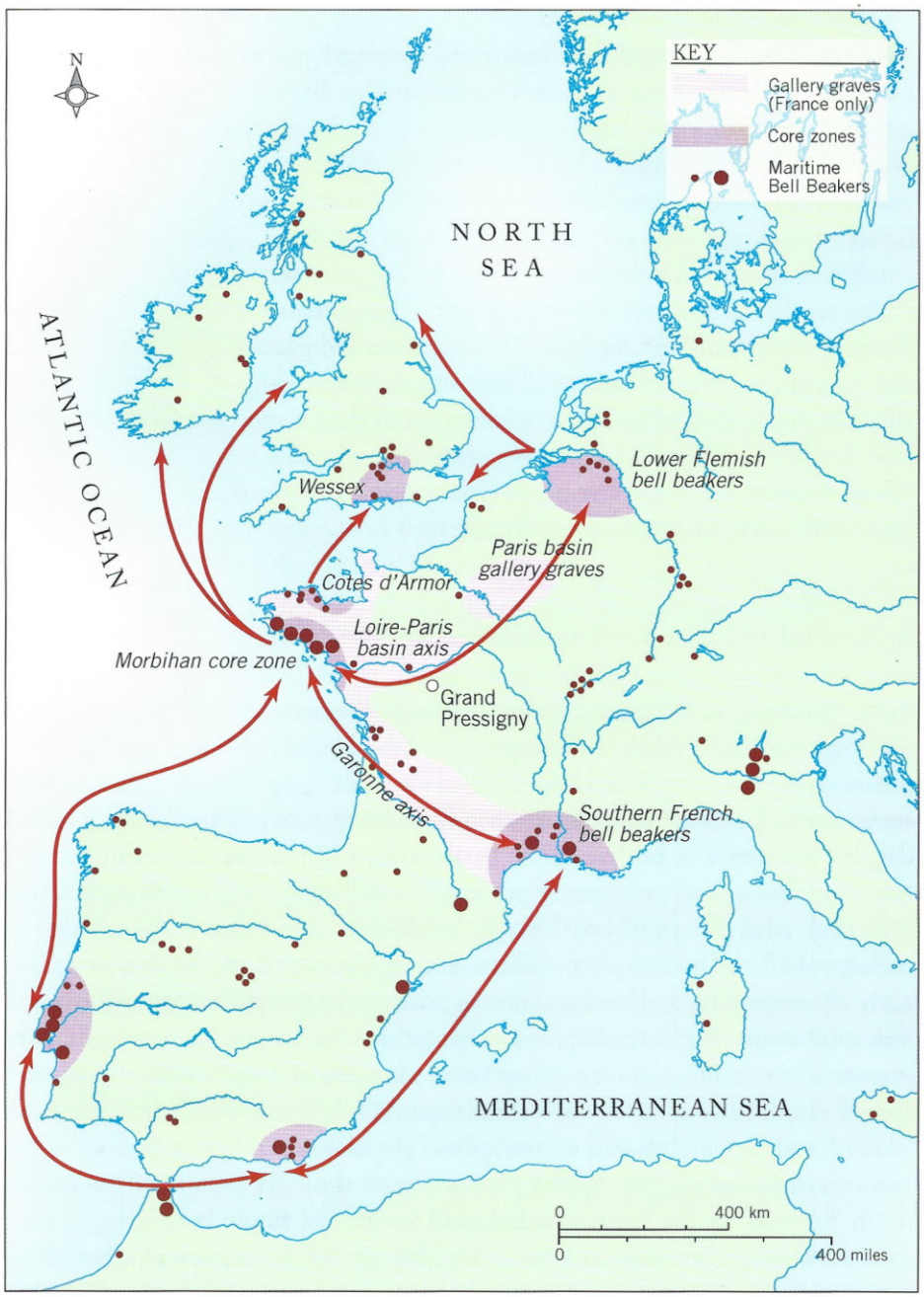
Here, single burial was practised in stone cists or very large pottery vessels, with the dead now treated as individuals, decked out in their own personal finery and accompanied by weapons and pottery. Status was indicated by the quality of the grave goods, the richer individuals being accompanied by items of silver (which was quite abundant), gold, faience and ivory. The dead were buried within settlements beneath floors or behind walls to remain close to the living.

Everything about the Argaric culture suggests that it developed locally with very little external stimulus: inland there were endless mountains and barren mesetas and, although the Argaric zone had an extensive interface with the sea, there is very little evidence of maritime contact except with the adjacent coast of North Africa, whence came the coveted elephant ivory and rare ostrich eggs used to make personal ornaments. At this end of the Mediterranean the maritime networks were still little more than parochial.

The Atlantic and the North Sea

In the third and second millennia BC many parts of western and central Europe were caught up in the beaker phenomenon. From Portugal to Hungary and from Provence to Scotland the rite of single burial was widely adopted. In many zones within this broader region the burials were accompanied by highly distinctive grave sets including a ceramic beaker and items redolent with status such as archers' equipment (arrows, wrist guards and presumably bows), daggers of copper or bronze, stone battle-axes, and personal adornments such as amber beads and gold earrings. In western Europe archers' equipment is preferred while in northern Europe battle-axes occur more frequently. So widespread is the beaker phenomenon and so distinctive are the grave sets that early observers came to look upon it as evidence of a rapid and pan-European folk movement. But interpretations change and the consensus now is that the phenomenon represents the acceptance of a set of beliefs and values that spread rapidly along networks of exchange. While there may have been some level of mobility, significant migrations of population are unlikely. One of the confusions to have arisen in the past was over the significance of the beaker itself. So long as the form was believed to have a single origin, arguments focused on the direction in which the idea of the beaker moved, but if we accept that the basic form is sufficiently generalized to have developed in more than one place, it becomes much easier to give proper emphasis to regional sequences and local inventiveness and to tease out the threads that come together to give the impression of widespread cultural unity.

We have already seen, in Chapter 6, how a distinctive cultural grouping – the Corded Ware/Single Grave culture – emerged in the North European

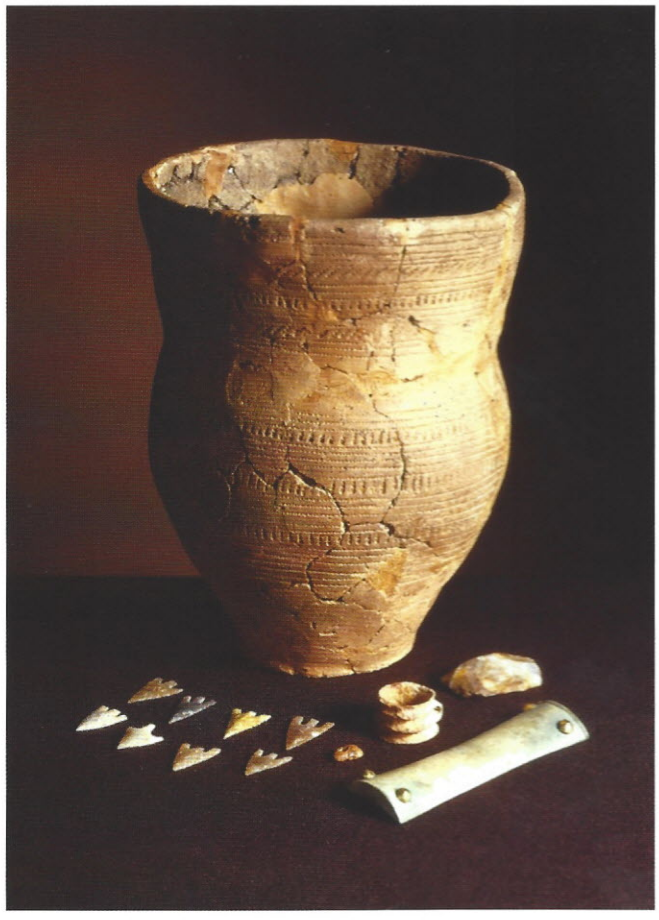


7.22 The third millennium trading networks of Atlantic Europe were complex. Their extent is best exemplified by the distribution of a distinctive pottery type – the Maritime Bell Beaker. The crucial nodes in this network were the Tagus valley and the Morbihan, but major hinterland routes existed along the major rivers.

Plain some time around 3000 BC, and over the next hundred years or so spread into adjacent areas, into Denmark, Netherlands and Switzerland in the west and eastwards deep into Russia. The characteristics of the culture were single burial usually accompanied by a cord-decorated beaker and often by a stone

battle-axe. The western extent of this Corded Ware complex roughly coincided with the valley of the Upper and Middle Rhine.

A quite separate thread is the development of a highly distinctive decorated bell beaker – known as the Maritime bell beaker – in the Tagus region of Portugal some time around 2800–2700 BC. These vessels were fired to a red or red-brown colour and decorated with horizontal bands of comb decoration covering the entire outer surface. The vessel form and decoration clearly emerge from the indigenous ceramic tradition and the bow-and-arrow grave set of the hunter may also have originated in this same region.



7.23 A Beaker grave group from Culduthel, Inverness-shire, Scotland. The wrist-guard and the arrow heads show that the deceased was provided with the equipment of an archer.

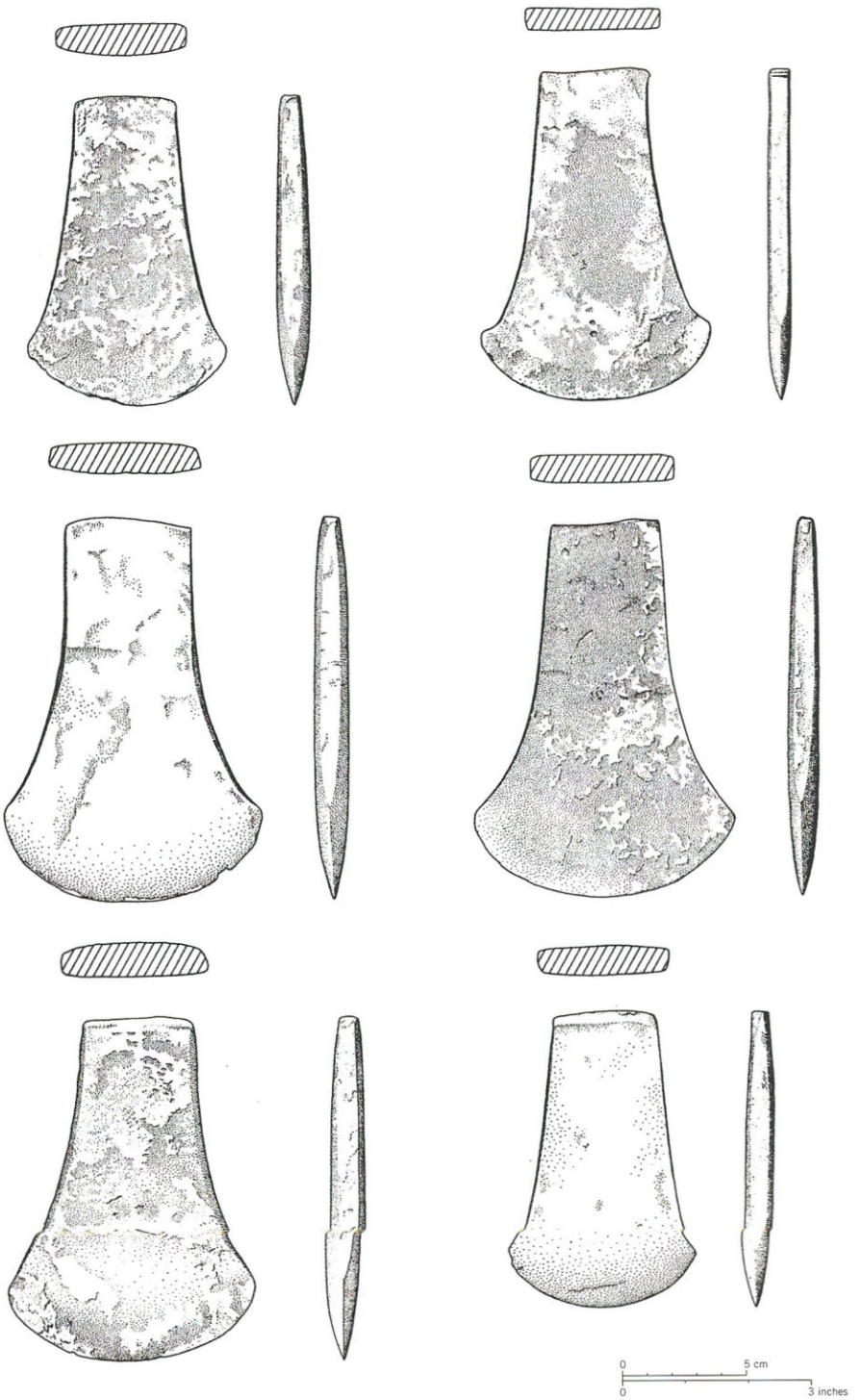
The initial spread of the Maritime bell beaker took place along the Atlantic seaways in the middle centuries of the third millennium, using the well-established routes between the Tagus and Morbihan/Loire estuary regions that had been in operation at least since the initial spread of the megalithic passage graves two millennia previously. From Armorica (Brittany) the beliefs inherent in the Maritime bell-beaker package spread out across western Europe using long-established exchange networks, one southwards along the western coast of France to the Gironde estuary and thence via the Garonne and Aude to the Mediterranean coast and the Rhône estuary, the other along the Loire to the vicinity of Orléans and across the Gâtinais to the Seine valley, thence northwards to the Lower Rhine. These major axes were well attested in previous periods and can be traced in the distributions of other artefacts throughout the third millennium. One example is the stone shaft-hole axe made from hornblendite in the vicinity of Quimper in western Brittany. The distribution of axes from this source neatly charts the two routes. Another commodity much favoured in exchange at this time was the attractive honey-coloured flint from Grand Pressigny, found in the valleys of the Claise and Creuse not far from Poitiers. It was distributed in various forms, from large cores or long, narrow blades, to finely flaked daggers and lance heads. Grand Pressigny flint is found in many burials in the Paris Basin and

accompanies beakers in the Netherlands. It was also exported in considerable quantities eastwards to the Rhône–Saône valleys, to be used in many west Alpine settlements of the period 2800–2400 BC.

It was along these same active exchange routes that the beaker package spread across western Europe, to be adopted and adapted by many of the communities who encountered it. In the Rhine valley it was introduced into regions where the single-grave traditions of the Corded Ware complex were already established. Here the fusion of the two created a rich mixture of beliefs and a bewildering variety of beaker types. The Loire/Seine/Rhine corridor opened up northern France to influences from both the Atlantic and the Corded Ware complex; and it was from here, across the English Channel and the southern North Sea, that the beaker package was introduced into southern and eastern Britain in the last two centuries of the third millennium BC, to be incorporated into the already vigorous indigenous cultures. To what extent this involved the movement of significant numbers of people it is difficult to say, but the very widespread introduction of the single-burial tradition might indicate some inflow of people – a suggestion given support by the discovery that oxygen isotope analysis of the teeth of a beaker burial found at Amesbury near Stonehenge in Wessex showed that the individual had probably grown up in mainland Europe.

If we are correct in seeing the Morbihan–Loire estuary as the core zone from which the Maritime bell-beaker package spread through the networks of western Europe, we need to consider whether the long-established maritime routes, leading onwards to western Britain and Ireland, also enabled beaker ideologies and technologies to reach these regions. Until recently the evidence has been ambivalent, but new work in the south-west of Ireland is beginning to clarify the situation. Survey and excavation on Ross Island, on the eastern side of Lough Leane in Co. Kerry, have revealed evidence of copperworking associated with early beaker pottery in contexts dating to 2400–2200 BC. The copper produced here from sulpharsenide ores, principally tennantite, was of a distinctive low-arsenic composition; it was used to make flat axes that were distributed throughout Ireland and into Britain. That the choice of ore type and the methods used to smelt it are characteristic of a specialized technology practised in Atlantic Europe in the mid-third millennium BC suggests that individuals with a knowledge of copper production arrived in south-western Ireland, from Brittany or further south, along the established seaways.

The initial discovery of copper in Ireland probably dates to 2500–2400 BC and the Ross Island works were still being exploited as late as 1900 BC, the metal being fashioned into flat axes and halberds – the traditional products of the earliest Atlantic copper industry. Once the technology was established, other copper sources came on stream, the best-known being from Mount



7.24 Early Irish copper axes from the Cappeen hoard, Co. Cork. Axes of this kind are the earliest copper tools to be made in Ireland and circulated to Britain.

Gabriel some 54 km (34 miles) to the south where surface workings have been identified producing copper from *c.*1700–1500 BC.

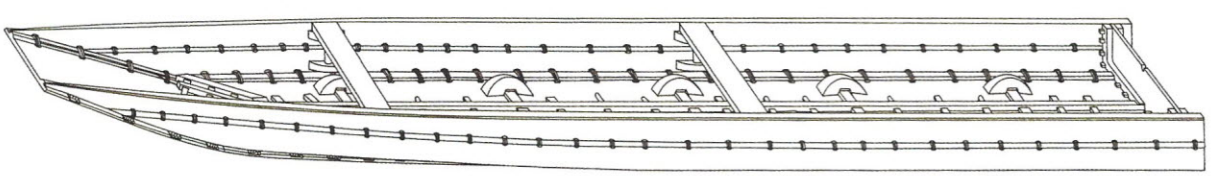
The Irish 'copper age' ended about 2100 BC with the rapid transition to the use of tin-bronze, the tin most likely coming from Cornwall, a peninsula that lies conveniently astride the maritime routes between Brittany and south-west Ireland. It is easy to envisage how travellers practised in metal technology could have learnt of Cornish tin and decided to experiment with the new metal. The highly innovative nature of these interactions led to Britain and Ireland being the first regions in Europe to develop a regular tin-bronze metallurgy.

At about the same time gold was being extracted from the Wicklow Mountains in south-eastern Ireland. Much of it was fashioned into magnificent collars known as *lunulae* in the period 2200–2000 BC. These elite items entered into the Atlantic distribution networks. More than eighty-five have been found in Ireland, five sites have produced *lunulae* in Cornwall and six in Normandy and Brittany. The distributions neatly reflect the western maritime route used by the metal specialists.

Crossing the Seas

A willingness to face the Atlantic Ocean, making long-haul trips across the open sea as well as hopping along coasts, implies not only a tradition of seamanship but also the availability of sturdy vessels. The coastal waters of Britain have produced remains of eight vessels of the second millennium BC: from the Humber estuary, Dover, Southampton Water and the Severn estuary. The two best-preserved examples come from Ferriby on the Humber and from Dover: both are masterpieces of carpentry and demonstrate the existence of a well-established shipbuilding tradition. The vessels were built plank first; that is, their coherence and strength as structures came from the planks of the hull and the way in which they were attached rather than from an inner frame or from transverse timbers. The thick oak planks of the hull were fastened together by sewing with twisted yew withies and were caulked with moss held in place with laths. In the Dover boat additional waterproofing was provided with a stopping made of beeswax and animal fat. To give added rigidity to the bottom planking, transverse timbers were used which passed through cleats integral with the upper surfaces of the planks. In shape the vessels were long boats – Ferriby 1 was 13 m (43 ft) long and Dover about 11 m (36 ft) – with flat bottoms making them easy to beach. None had keels, though in the case of Ferriby 1 the central base plank was thicker than the others. The means of propulsion is not immediately apparent but was probably paddling, though it has been suggested that some of the projections on the central base plank of

7.25 The remarkably-preserved Dover Bronze Age boat *in situ* during excavation. The cleats to hold strengthening bars and the bindings of the laths covering the plank joins can be clearly seen.



7.26 Conjectural reconstruction of the Dover boat. The left end of the boat (?the bow) was recovered within the excavation, but the right-hand end (?stern) with the square transom is hypothetical since it still remains to be excavated.

the Ferriby 1 vessel could have supported a movable mast. Sea trials carried out with a half-size replica showed that this was entirely feasible and offered a highly efficient form of propulsion.

The British second-millennium sewn-plank boats demonstrate the carpenter's intimate knowledge of timber and deftness with the bronze axe and adze. They show too that a series of solutions to constructional problems had been tried and tested. This is a mature boat-building tradition, the antecedents of which must have stretched back for centuries, even before the advent of metal tools increased the speed and precision of construction.

There has been much discussion about the capability of these vessels: whether they were restricted to coasts and estuaries or whether they were regularly used on open sea expeditions. Recent sea trials have suggested that, under appropriate conditions, such vessels would have been able to cross the Channel or the southern North Sea in comparative safety. In the context of the time, journeys of this kind would have endowed those who led them with well-earned prestige.

The sewn-plank boat tradition was well established in British waters by the second millennium BC, but what of other vessel forms? The contemporary Nordic tradition (see pp. 217–9) is based on the long boat with well-defined keels and high stems and sterns, while the strong possibility remains that skin boats, constructed of a light wattle framework covered in cows' hides, were widespread. Such a comparatively simple form of construction, very well suited to the buffeting waves and swells of the Atlantic, has long been used in western waters. For the coastal communities, then, mobility at sea employing a variety of craft would have been commonplace.

Emerging Local Elites

Throughout western Europe the third and second millennia BC saw the emergence of elites. They appear in the archaeological record as individuals endowed at their time of death with rich grave goods. Although the phenomenon is widespread, three distinct clusters stand out – in the Tagus region of Portugal, in Armorica (Brittany) and in Wessex.

The Tagus region was developing a very distinctive culture of its own by the beginning of the early third millennium BC. This was characterized by settlements with massive stone-built 'fortifications' – sites like Vila Nova de São Pedro after which the culture is generally named (see p. 143). It was very probably in this region that the form of the Maritime bell beaker first developed *c.*2800 BC and spread along the Atlantic seaways together with knowledge of copper-producing technologies. The next stage in the Portuguese development, known as the Palmela complex, begins in the

middle of the third millennium BC. The fortified settlements continued in use, as did the tradition of burying the dead in collective tombs, but there is now an increase in the desire to display the elite status of the dead through a range of exotic grave goods. Local copper was widely used to make tools, but only rarely weapons. Gold, probably from Galicia, but perhaps from as far afield as Ireland, was plentiful in the form of personal jewellery and small sheet attachments for dress, while fastenings for dress and other trinkets were made of ivory imported from North Africa. Another favoured commodity was callaïs – a fine-textured stone, usually greenish-blue in colour, used to fashion beads. Much of the callaïs probably came by sea from Armorica where it was also popular in contemporary burials.

In Armorica the elite burials of the second millennium are concentrated in the west of the peninsula, west of the rivers Blavet and Trieux, with a particularly dense cluster on the southern flank of the Monts d'Arrée – a distribution contrasting with that of the earlier megalithic tombs which focused on the southern Morbihan. The burials were usually individual and were placed in stone-built cists beneath barrows. Bronze daggers and short swords, flat axes, and flint-barbed-and-tanged arrows are frequently included. The daggers were provided with wooden handles which in some cases were ornamented with closely spaced gold pins. Other luxury goods include the silver beakers, and items of amber and gold, like the small decorated gold box from La Motta near Lannion and the large amber plaque accompanying the burial at Saint-Fiacre in the Morbihan. The distribution of the Armorican barrow burials, away from the traditional megalithic focus in the Morbihan, suggests that a new political geography was emerging, with the elite now choosing to distance themselves from the past. This view is further supported by the fact that the Armorican barrow burials owed little to the beaker package: here was a community able to benefit from local resources of copper, tin and some gold, and from their favoured location at the end of a peninsula, thrusting into the middle of a vibrant maritime network. Maybe they saw themselves as new men carrying little from their past.

Across the Channel in Wessex lay another centre of power. In the earlier part of the third millennium BC the Wessex chalkland saw the emergence of massive ceremonial sites referred to by archaeologists as 'henge monuments', but by the middle of the millennium most had declined in significance, with the notable exception of Stonehenge where, some time before 2600 BC, a number of bluestone monoliths imported from the Preseli Mountains in south-west Wales were set up. Within a century the famous circle of sarsen stones enclosing five towering trilithons had been erected, creating a monument without parallel in Europe. Thereafter Stonehenge remained in active use, remodelled on a number of occasions during the course of the next eight centuries or so.

7.27 The array of gold objects found with a mid-second millennium BC burial in a tomb at Upton Lovell, Wiltshire. The collection well displays the craft of the sheet gold worker.

The rich burials, clustering in Wessex in the period *c.*2000–1400 BC, belong to an indigenous tradition developing from the single inhumations of the Beaker period. The richest are lavishly provided with exotic goods. One of the most famous is the burial beneath Bush Barrow, a prominent mound within sight of Stonehenge. The chieftain buried here was accompanied by three bronze daggers, an axe, a stone mace head attached to a staff decorated with bone fittings, two decorated gold plaques and a gold belt hook. One of the daggers had a wooden handle decorated with gold pins which may well have been made in an Armorican workshop. Not far away, at Upon Lovell in the valley of the river Wylye, a female had been buried wearing an elaborate multi-strand necklace of amber beads, the strands separated from each other by large amber spacer plates. Among her other grave goods were a bronze knife and an awl, gold beads, a decorated gold plaque and a gold-coated cone of Kimmeridge shale. Other exotic materials enjoyed by the Wessex elite included jet from the Yorkshire coast and beads of bright blue faience probably made in Britain. One of the most spectacular items from a grave of this period was a handled cup carved from a solid lump of amber, found with a burial at Hove in Sussex – an outlier to the main distribution.

The chalklands of Wessex were able to sustain a stable agricultural economy but commanded few other resources. The reason for the prominence of the region lay in its central position with regard to routes from the southern coasts of Britain to other parts of the country. The chalk uplands

converging on Salisbury Plain together with the rivers flowing into the Solent provided the natural lines of communication along which most other parts of southern Britain could easily be accessed. An added attraction was Stonehenge itself, which must have been a sight of wonder and veneration worthy of pilgrimage.

Finally, we must consider Ireland. We have already seen that it was highly productive of bronze, used to make axes, daggers, halberds and spears, and of gold, most dramatically displayed in the spectacular *lunulae* found throughout the island. But no clusters of rich burials proclaim centres of power. It may simply be that the Irish elite chose to demonstrate their access to wealth by dedicating it to the gods and consigning it to bogs or to pits in the ground rather than using it in sumptuous burials. Such is the variety in human behaviour.

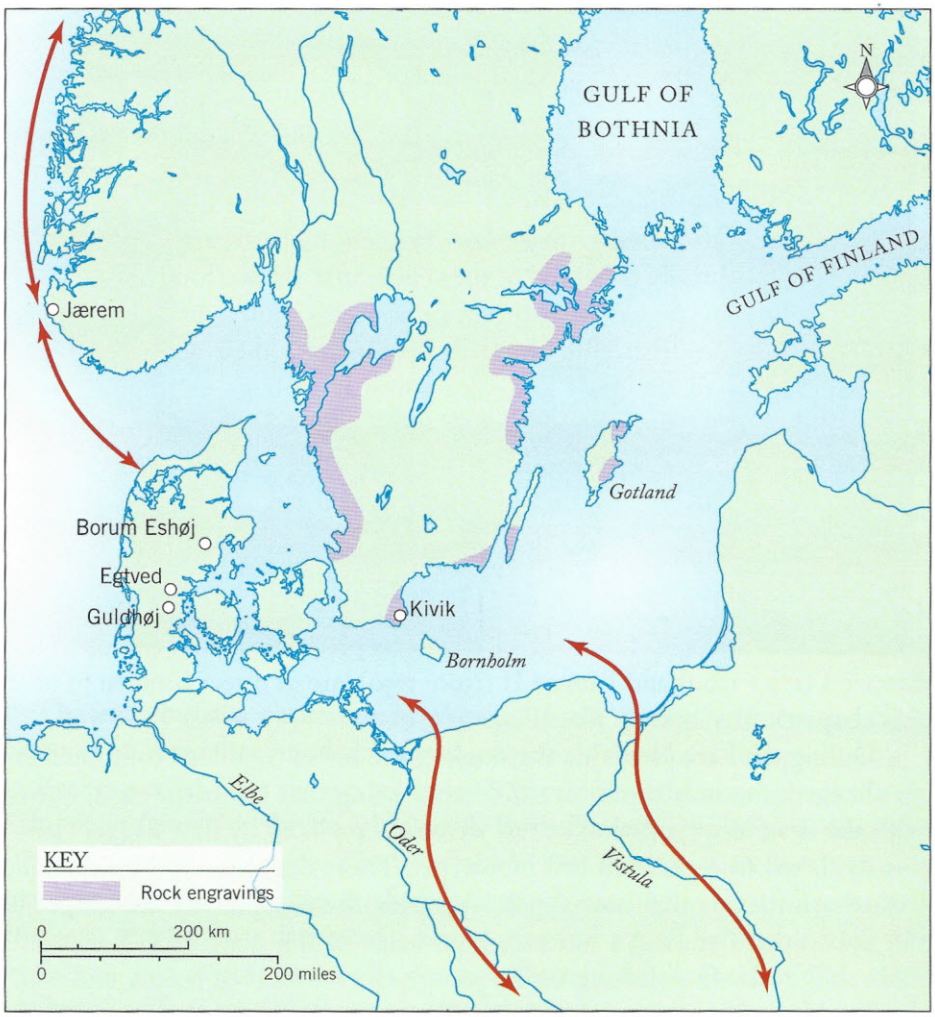
The Nordic Realms

In Denmark the Late Neolithic period continued until *c.*1730 BC, after which comes the Bronze Age. This is divided into six periods, the first two of which, Bronze I (1730–1500) and Bronze II (1500–1250), are of direct concern to us in this chapter.

During the Late Neolithic the single-grave burial traditions continued little changed, the only significant difference being that the battle-axes, buried with the dead as a symbol of status, were now replaced by flint daggers laboriously flaked to replicate metal prototypes. These daggers, and also the long barbed arrowheads that now appear alongside them, represent the apogee of the flintworker's craft. An intimate knowledge of the material and consummate skill in the flint-flaking technique created artefacts of beauty and wonder in a land with no copper supplies of its own.

Around 1700 BC metal begins to flow in in some quantity – copper, tin and gold – becoming abundant by the middle of the millennium, by which time local metalsmiths were producing a range of items equal to or excelling in quality those of neighbouring regions. The Scandinavian Bronze Age was a period of stunning technical and artistic achievements, nurtured under the patronage of chieftains who dominated an increasingly hierarchical social structure.

The elite were now buried with equipment appropriate to their rank, including, in the cases of the most prestigious individuals, items of gold. In a number of cases burials, monumentalized by large barrows, were made in waterlogged conditions that have preserved much of the organic component of the grave, providing a wealth of detail seldom available elsewhere in Europe. At Egtved in Jutland the grave of a young woman of 18–20 was excavated in

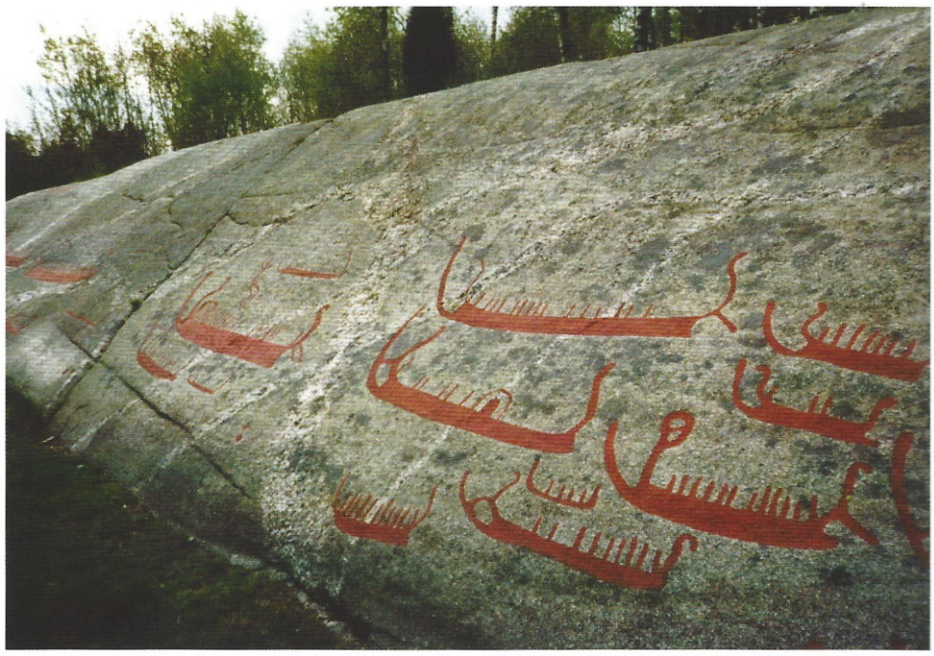


7.28 The Nordic region in the second millennium BC showing some of the major sites and routes.

1921. She had been buried in an oak coffin carved out of a solid trunk, and was lying on a cow's hide dressed in a shirt of brown sheep's wool with elbow-length sleeves and a string skirt also of wool. Across her stomach she was wearing a bronze disc with a substantial protruding spike of sufficient prominence to deter an over-ardent admirer. She wore bracelets on each wrist. At her head was a birch-bark box containing woollen cord and an awl, and at her feet was a birch-bark pail once filled with beer or fruit wine. The cremated remains of a child of six or seven were placed in the coffin before she was laid to rest. The Egtved woman was buried in the second half of the second millennium BC. At about the same date a young man of about twenty was interred at Borum Eshøj in eastern Jutland. He too had been laid on a cow's hide in an oak coffin. He was dressed in a loincloth held by a leather belt and

7.29 Flint dagger from Hindsgavl, Denmark, dating to about 2000 BC. By using a technique of carefully controlled pressure flaking, the highly skilled craftsman has been able to imitate the shape of contemporary bronze axes to produce this masterpiece.

7.30 The burial of a young woman from Egtved in south Jutland, Denmark. She was clothed in a woollen shirt and string skirt. The body, together with a birch bark container, lay on a cow's hide and was covered with a woollen blanket. It had been placed in an oak coffin beneath a barrow around 1370 BC.



7.31 An exposed face of granite carved with a flotilla of boats at Hornnes, Skjeborg, Norway. The rock face once overlooked the sea. The red pigment is a modern application to accentuate the carving.

was covered with a woollen cloak. Buried with him was the scabbard of a long sword surprisingly containing only a short dagger. These well-preserved burials, just two of a number found in Denmark, offer a fascinating insight into life and death in the Bronze Age. They were young people of moderate status belonging to a hierarchical system that used the ceremony of burial to display both the social rank of the deceased and the status of his or her lineage.

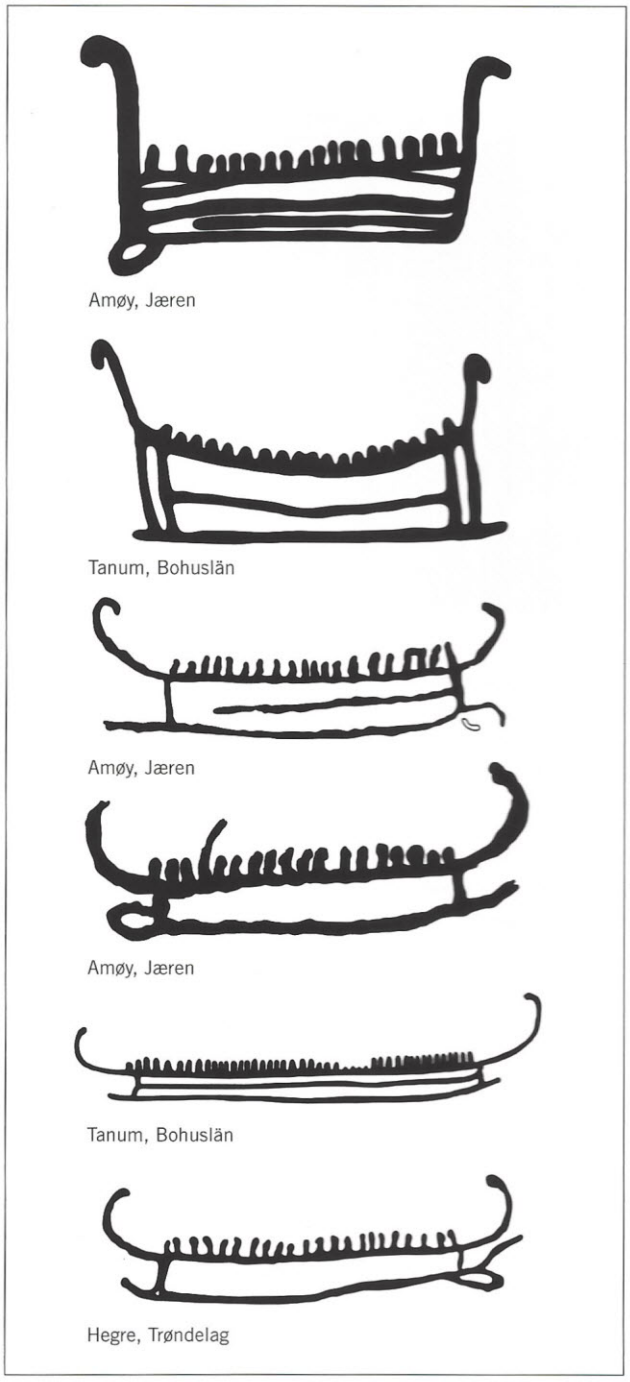
While the countryside of Denmark and southern Sweden was fertile enough to sustain its population and to meet its basic needs, it was totally deficient in copper, tin and gold, all of which had to be imported from the south. In return the region could offer furs, hides, woollen fabrics, seal oil, resin and the much-sought-after amber found in quantity along the eastern shores of Jutland and the Baltic coasts of what are now Poland and Russia. To sustain the constant inflow of metal (much of which was taken out of circulation by the social customs that required it to be buried in graves or consigned to ritual deposits) it would have been necessary to husband the local products and channel them into the exchange networks.

The pattern of exchanges that developed between the Thy district of northern Jutland and the western coast of Norway, between Stavanger and Trondheim, provides an insight into the local networks in operation. A detailed survey of the artefacts found here shows that during the Late Neolithic and Early Bronze ages the Norwegian communities received flint daggers and items of bronze and gold from Denmark. In all, 1800 imported

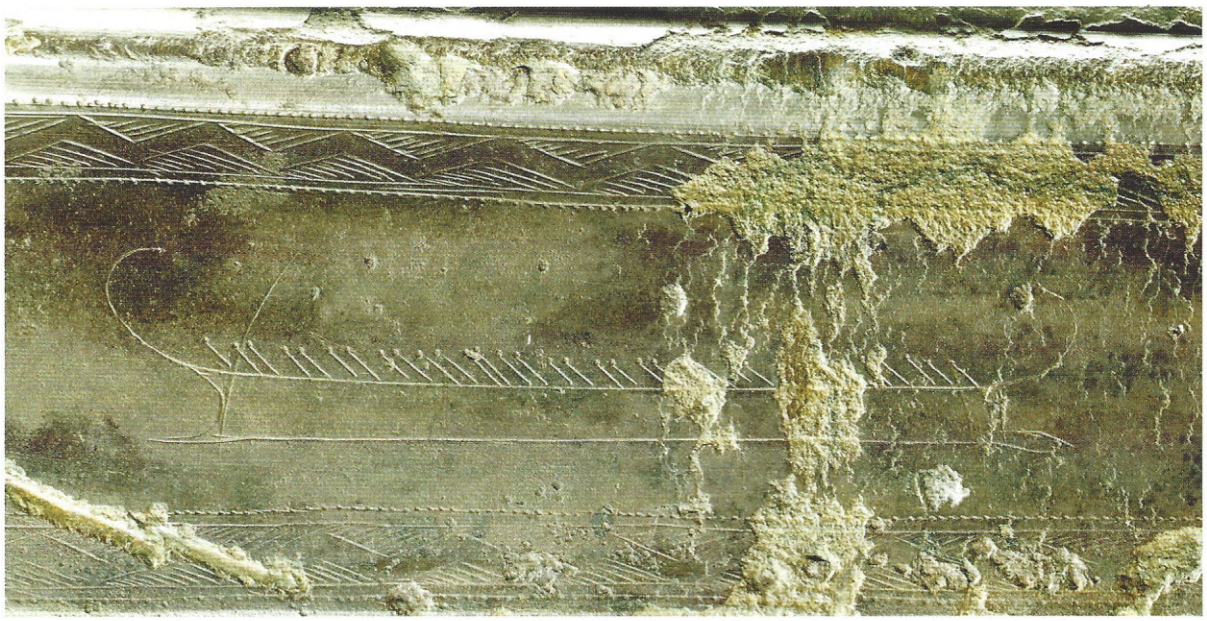
artefacts have been found. Most were flint daggers but there were also 172 bronze and seven gold objects. While the distribution of flint daggers no doubt reflected the density of population, the more prestigious metal objects were concentrated in two areas, Jæren and North Karmøy, where local elites were able to control the incoming exotics. What the Norwegian communities offered in return were most likely products derived from pastoralism and hunting. Some hint of this comes from one maritime rock shelter in the region of Sogn, where the faunal remains show that squirrel, hare, bear, marten and wild cat were being trapped, presumably for their skins. Another product that would have been easily accessible to the coastal communities of this region was seal oil which was widely valued. The coniferous forests also offered a ready supply of resin. It is not at all impossible that the wealth of the elite of the Thy district of Jutland was in no small part the result of their ability to acquire these rare commodities from western Norway for further transmission south. This example illustrates but one of the many maritime routes linking Norway and Sweden, and Jutland and the Danish islands. Control of the sea was of crucial importance.

The maritime nature of Scandinavian society in the second millennium BC is amply demonstrated by the ship imagery that pervades the cultural record. Most prolific are the rock engravings of the coastal regions of southern Sweden, where engravers had been at work over centuries, laboriously pecking images into the exposed surface of the igneous bedrock. The symbols are rich and varied but everywhere the ship dominates, sometimes appearing in scenes recording flotillas of vessels.

Ship images also enhance the surfaces of



7.32 A selection of boats carved on exposed rocks in southern Norway. All share the same high prows and sterns. If the stick figures represent people then the vessels were long sleek rowing boats with upwards of twenty rowers.



7.33 Sword from Rørby near Kalundborg, Denmark, dating to *c.*1600 BC inscribed with a boat very similar in form to those found on the rock carvings. This is one of the earliest representations of a boat in the Nordic region.

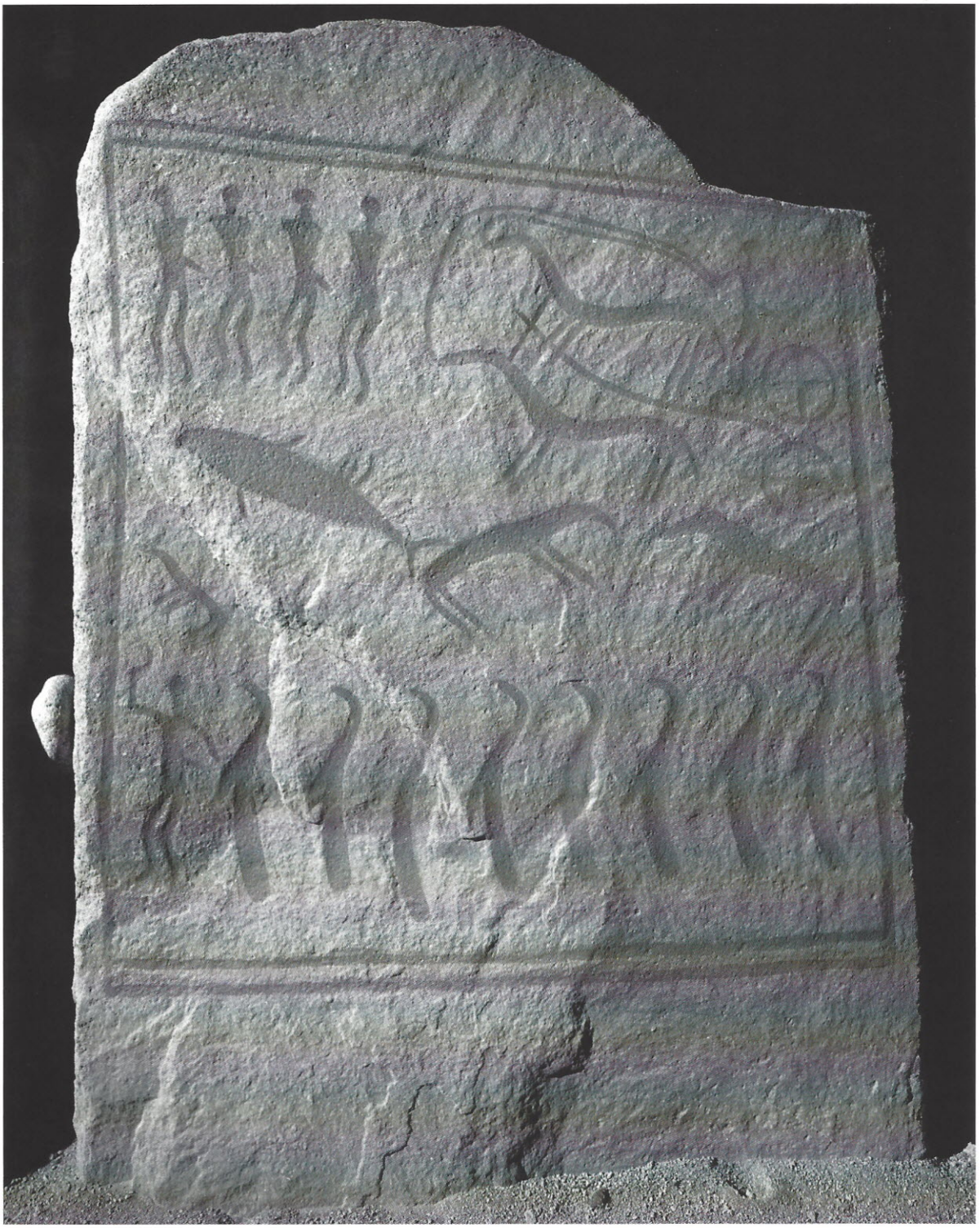
bronze implements. The earliest known example is engraved on the blade of one of a pair of elegant bronze single-edged swords (or scimitars) found at Rørby in western Zealand. The image of the vessel is precisely drawn, the hull outlined with two thin lines representing the keel and the gunwale. The gunwale-line sweeps up at both ends to create a high incurved prow and stern, while the keel-line is extended fore and aft, the aft extension being expanded perhaps to depict some kind of stabilizer. Above the gunwale were thirty-four or thirty-five strokes, each representing a crew member. This is an assured drawing by someone who fully understood the essence of a ship. The Rørby ship, dating to 1600–1500 BC, represents a tradition of boat-building that was already well established. It incorporates the basic elements that are to be found time and time again on the Swedish and Norwegian rock carvings.

So extensive is the rock-carving iconography that it allows huge scope for discussion about both ship construction and changing styles of vessels over time. There are also indications of different regional styles in the carvings which might reflect local variations in construction. Opinions differ as to how the actual vessels were constructed. In most cases a keel is indicated and no example is known to depict a mast or sail. The lengths of the vessels vary but the great majority can be classed as long boats. This much is clear; what is debatable is the actual form of construction. Some commentators favour hides stretched over a light timber skeleton, others prefer a plank-built construction, basing their argument on the fact that some carvings appear to indicate distinct side strakes. Both options remain possible, but given the contemporary

English Channel/North Sea tradition of sewn-plank construction and also the assured plank-built tradition represented by actual vessels found in the Nordic area dating from the first millennium BC, it seems likely that the Bronze Age vessels were also plank-built; we can but await the discovery of an actual wreck.

The prevalence of ship images on rock carvings and bronzes underlines the importance assigned to maritime journeys in Nordic society and carries with it the implication that to command a ship and lead it on an expedition was a mark of high status. But how ambitious were these voyages? Most journeys would have been essentially local, between Jutland and the Danish islands and the coasts of southern Norway and Sweden, in pursuit of profitable exchanges. But it is perfectly possible to conceive of a situation in which competition to gain prestige encouraged voyages to be undertaken over greater distances, thrusting deep into the unknown. Returning successfully from such expeditions with cargoes of exotics and with knowledge of distant lands previously shrouded in mystery would have endowed the successful leader with an aura of the supernatural. Voyaging would have become a measure of status and legitimacy to rule – much as it was in the same Nordic region more than two thousand years later when the wayfarers were called Vikings.

The more ambitious might have directed their vessels northwards up the Baltic to the Gulf of Finland or past Åland to explore the Gulf of Bothnia, or they might have chosen the less arduous journey across the North Sea to Scotland. Another possibility is that they may have explored the great rivers of the North European Plain, the Vistula, Oder, Elbe and Weser, to seek out the sources of the metals and to establish diplomatic relationships with the distant chiefs who controlled the throughput of supplies. The Oder and Elbe were the routes by which many cultural influences reached Scandinavia from the south-east. The Carpathian Basin had a flourishing bronze industry that produced finely cast shaft-hole axes and elaborately decorated, solid-hilted swords named after the Hungarian type site of Hajdúsámson and the Romanian site of Apa. These elite weapons were being produced in the period 2100–1700 BC and the distribution map shows them extending northwards towards Denmark. It was probably along this route that knowledge of the spoked wheel and the two-wheeled chariot, together with well-trained pairs of horses, reached the north. With a flood of such desirable goods flowing from the south-east, it would not have been surprising if one or more of the Nordic voyagers had taken his ship up the Oder, reaching deep inland via the Odra to the northern foothills of the Carpathians. A determined band of voyagers, firmly led, could have made the overland portages to the headwaters of the Morava, from where it was downriver to the Danube and thence to the Carpathian Basin. Whether such a voyage was ever made we cannot know,



but compared to the great journeys made across Europe by the Swedish Vikings two millennia later it would not have been a particularly outstanding achievement.

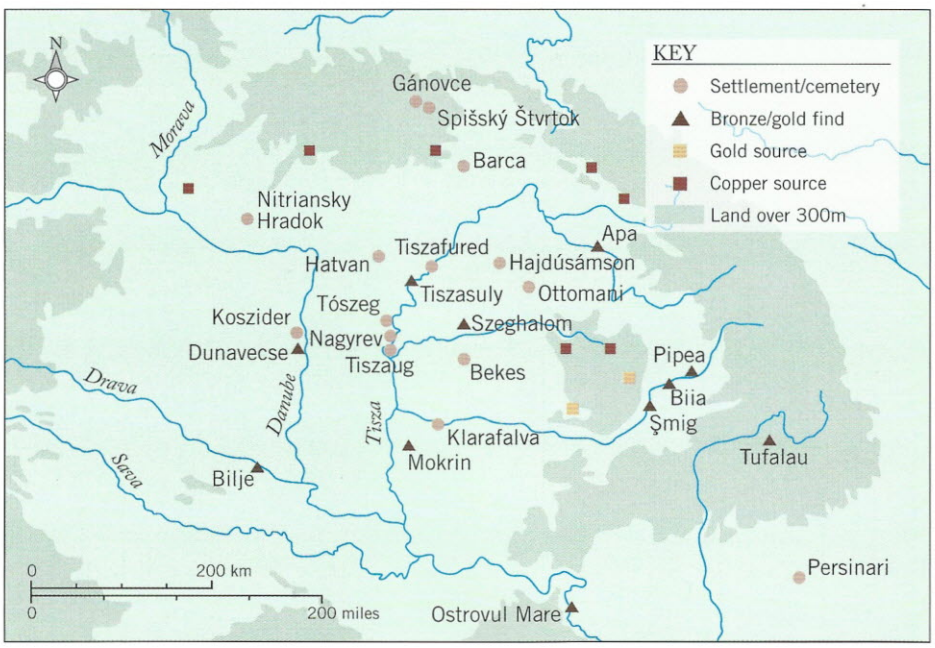
The idea of voyages of discovery penetrating deep into the heart of Europe is by no means as far-fetched as it may at first appear. One site in particular throws fascinating light on all this – a Bronze Age cist burial set in the great mound of Bredarör (broad cairn) near Kivik on the south coast of Sweden. The walls of the cist, discovered in 1748 and dating to the period 1700–1500 BC, were composed of eight decorated stone slabs. The scenes are virtually without parallel. They depict pairs of spoked wheels, pairs of horses, a figure riding a two-wheeled chariot pulled by a pair of horses, long boats, two axes facing each other on either side of a triangular monolith, and parades of human figures, two of whom blow horns, all evidently taking part in group ceremonials. The subject matter and the sophistication of the imagery leave little doubt that the scenes were inspired from beyond the Nordic realm. Some have argued for the Aegean but there is no need to go further south than the Carpathian Basin.

What was the immediate inspiration for the carvers, for whom was the tomb built, and are the scenes illustrative of an epic story? The questions must remain unanswered. But a possible scenario is that in the sixteenth century BC the lord of Kivik led his warriors on an epic journey, sailing south from home via the island of Bornholm to the mouth of the Oder, and thence by river and overland portage to the Carpathian Basin. On their return, scenes from the adventure and the mysteries they had witnessed were painted on cloth to adorn the lord's residence, thereby endowing him with great power in the eyes of all. On his death the scenes were carved on the stones of his burial chamber and a huge mound of boulders – the Bredarör – was piled up over it, dominating the view across the sea to the south and visible to all sailors approaching the coast: a fitting memorial to a great voyager. Fantasy perhaps, but that voyages of exploration were made at this time is not in doubt. The Kivik lord may have been one of many such explorers.

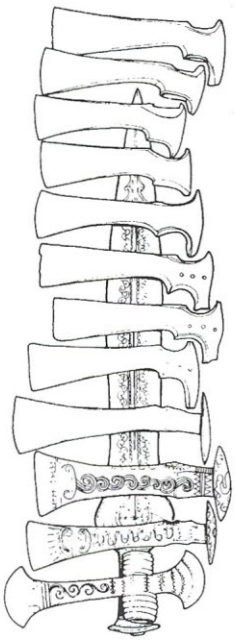
7.34 *Opposite:* One of the engraved slabs from the wall of the Kivik tomb dating to *c.*1300 BC, showing a vigorous scene including a fast-driven two-wheeled chariot. The meaning of the scene is unrecoverable but the lower line of figures looks like a procession in prayer.

The Carpathian Basin and the Steppes

In the period from *c.*2300 to 1400 BC, the Carpathian Basin saw the development of a spectacular bronze industry producing an array of elaborate weapons and ornaments for the elite. Prominent among these were the solid-hilted swords and shaft-hole axes, many of them elaborately decorated, of the types represented in the hoards from Apa and Hajdúsámson – types that are found concentrated in the northern part of the Carpathian Basin (now Romania, Hungary and Slovakia). This distinctive Early Bronze Age culture is known by



7.35 By the middle of the second millennium BC the Carpathian Basin had developed as a vital route node in the Bronze Age trading networks of central Europe. Many fortified settlements had been built to guard the major routes.

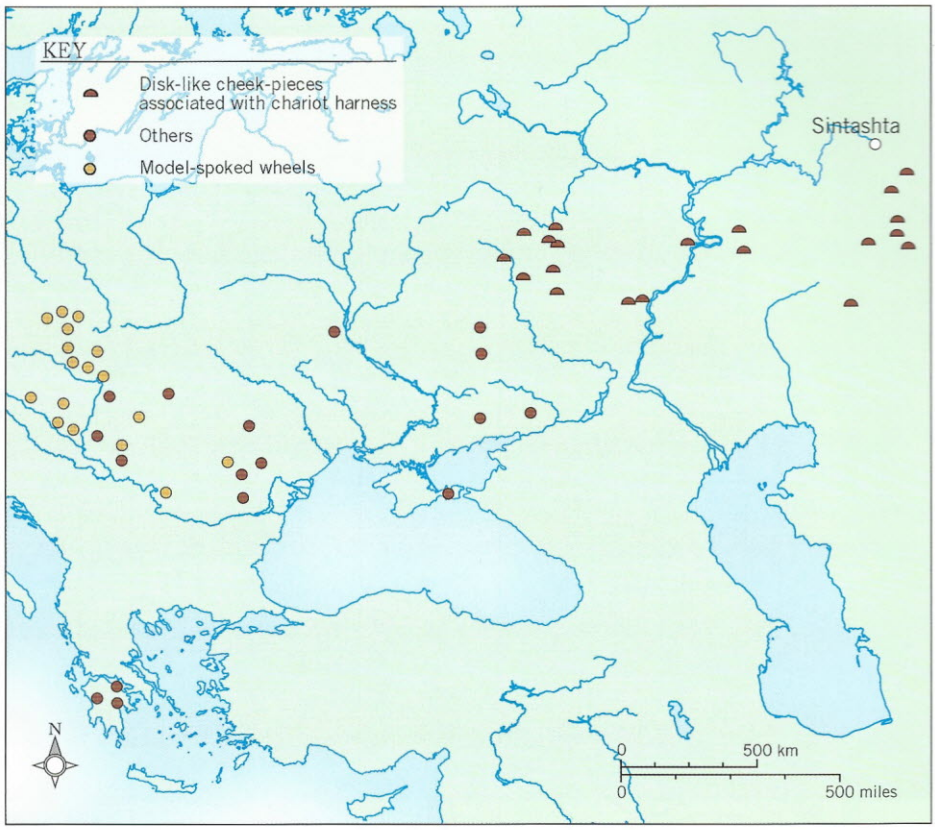


7.36 A hoard of bronze weapons (one sword and 12 battleaxes) found at Hajdúsámson near Debrecen in Hungary dating to the second half of the second millennium. The high quality of the work reflects the refined skills of bronzesmiths working in the Carpathian Basin.

various archaeological names – Füzesabony in Hungary, Otomani in Romania, Madarovce in Slovakia – but these are all local manifestations of one broadly similar cultural group. Something of the richness of the culture is indicated by objects in everyday use that were buried in debris when the fortified settlement of Barca in Slovakia was burnt down. In addition to tools and weapons, the finds included three necklaces of gold beads, one of amber and twenty sheet-gold hair-rings.

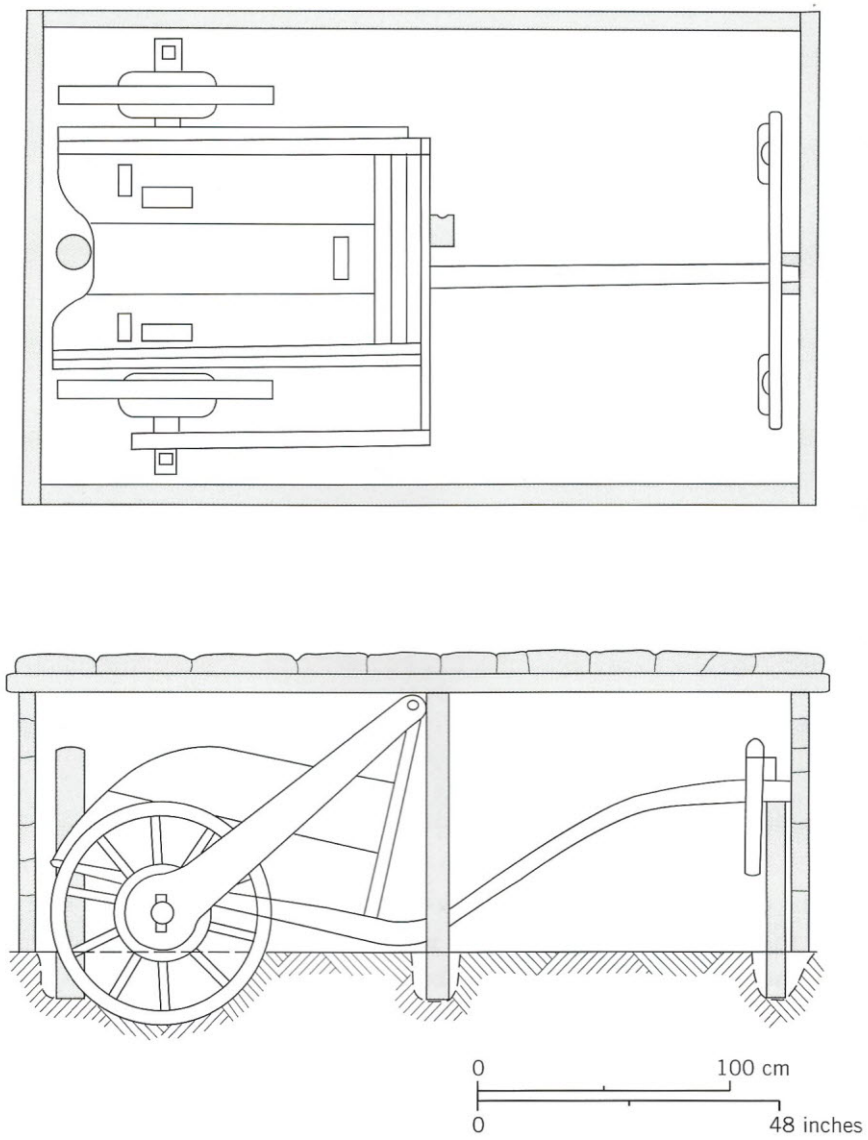
Many factors will have contributed to the wealth of the Carpathian communities, not least the fertility of the land and the ample deposits of copper and gold in the Carpathians and in Transylvania. But of vital importance was command of the routes leading from east to west and north to south – the Carpathian Basin was one of the great route nodes of the European peninsula. With an escalation in the flow of commodities in the second millennium, those living astride network interchanges of this kind were able to flourish. It is a reflection of this that the valleys and passes reaching northwards through the Carpathians were guarded by strongly fortified settlements surrounded by timber-laced earthen ramparts fronted by wide ditches – these were Europe's first true hillforts. Even on the lowlands to the south the long-established villages were now fortified, enabling local leaders to maintain a firm hold on the land.

The Carpathian Basin from a very early date shared many aspects of its culture with the steppe region to the east, and it was from here that horse-riding



7.37 The distribution of cheek-pieces from horse harnesses and of model-spoked wheels, in the latter part of the second millennium, shows the zone in which horse-drawn chariots were in use. The Mycenaean world is an outlier of the main distribution.

and the use of four-wheeled bullock-carts were learnt. In the second millennium these Pontic links continued with the introduction of the chariot – a vehicle with two spoked wheels pulled by a pair of horses. No actual examples of chariots are known in the Carpathian Basin region, but many models of spoked wheels have been found and there is a very clear illustration of two chariots pulled by horses on a pot of this period from Vel'ke Raskovce in Slovakia. The origin of the two-wheeled chariot has been much discussed, many writers favouring the Near East, but recent work has shown that the earliest chariots so far known are to be found in burials in the forest steppe region of Russia between the Urals and the river Volga, in contexts dating to as early as 2800 BC. The steppe region, with its long tradition of horse breeding and training and an even longer tradition of using wheeled vehicles, is a likely location for the emergence of light vehicles with spoked wheels that could travel at speed across the open terrain. From here the advanced technology spread south to the Near East in the period around 2000 BC and westwards into the Carpathian Basin, a region that had maintained close cultural relations with the steppe since the fourth millennium. By the sixteenth

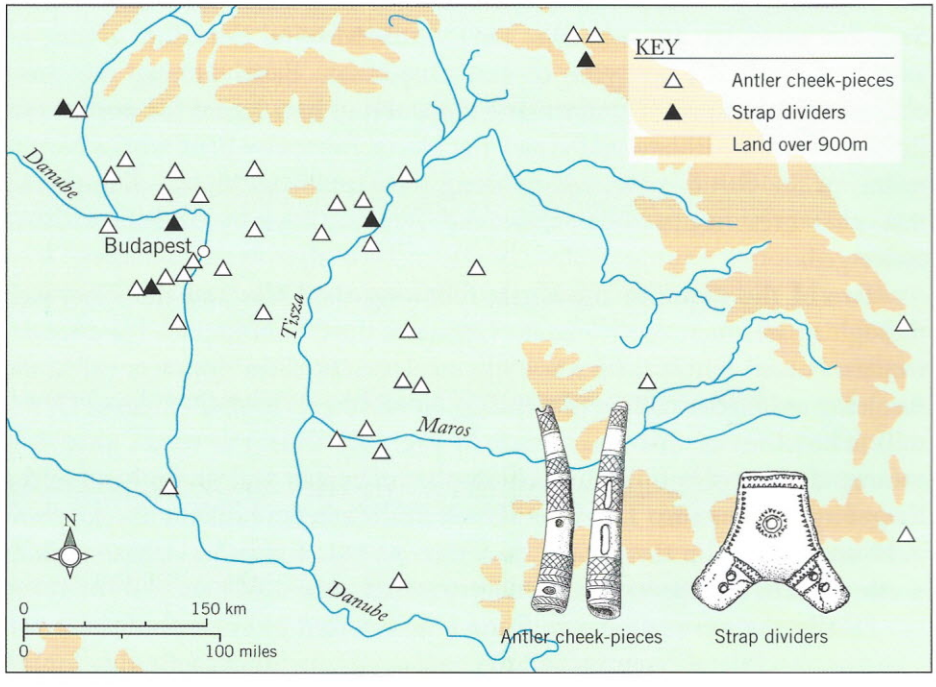


7.38 Reconstruction of the chariot burial found at Sintashta, in northern Kazakhstan just east of the Urals, dating to the period 2000–1800 BC.

century BC horse-driven chariots, clearly vehicles of prestige, are depicted on reliefs in Mycenaean shaft graves.

It has long been recognized that there were a number of marked cultural similarities between Mycenaean culture and that of the inhabitants of the Carpathian Basin – not only the use of the spoked wheel but also in curvilinear styles of decoration applied to bonework and other kinds of horse gear. This used to be interpreted as a result of Mycenaean influence spreading north, but with the advent of radiocarbon dating it has become clear that these cultural elements had emerged in the Carpathian Basin centuries before they

7.39 One of the decorated stone slabs from Shaft Grave V in Grave Circle A at Mycenae, depicting a two-wheeled chariot in action. The carving dates to *c.*1600 BC.



7.40 The Carpathian Basin in the mid-second millennium BC showing the distribution of antler cheek-pieces and bone strap dividers of the types illustrated.

are found in Greece. The inescapable conclusion is that the Mycenaean elites were drawing some of their inspiration, including perhaps knowledge of the chariot, from the north: it remains a possibility that there may even have been some limited movement of northerners into Greece at this time. The idea is unproven but merits consideration.

Adventurers and Heroes

It is abundantly clear that the period 2800–1300 BC was one of innovative energy and mobility in Europe. It was a time when the peninsula was opening up, allowing commodities, ideas, beliefs and values to be shared over wide areas, leading not to a sameness but to a vivid variety as the individual communities reinterpreted what was new to meet their own particular needs.

The emergence of hierarchical societies throughout Europe created demand for commodities. Copper, tin, gold, silver, amber, marble, lapis lazuli, ivory, ostrich eggs, textiles, furs, oils, perfumes, wine, trained horses and wives were among the enormous range of goods moved from one place to another along the networks of interaction that enmeshed all parts of the peninsular.

In the east Mediterranean ships linked the states of Egypt, the Levant and Anatolia with the emerging polities of the Minoan–Mycenaean world. Overland routes through Anatolia led deep into the east, while a short sea journey westwards linked to the maritime systems of the Tyrrhenian Sea. From the Aegean ships could easily access the south and west shores of the Black Sea, or overland routes, like the Varda–Morava corridor, could be taken to reach the *carrefour* of the Carpathian Basin linking the great expanse of the steppe to peninsular Europe. From here routes led northwards through the Carpathians and across the North European Plain to the Nordic realms of the Baltic, or westwards along the Danube to Middle Europe and the other great route node where the Danube, Rhine and Saône/Rhône converged.

Two of the routes to the north, following the Oder and the Elbe, pass through an area, now south-eastern Germany, the Czech Republic and south-western Poland, where there was a spectacular cultural development called the Aunjetitz or Únětice culture (depending on whether it is on German or Czech soil). The elites of this area benefited not only from the routes that they commanded but also from the rich supplies of copper and tin on hand in the Erzgebirge Mountains. The Únětice culture reflected a brilliant development in bronzeworking in the period 2300–1800 BC that was to influence much of north-western Europe.

Finally, the western parts of Europe were linked by systems of their own based on the Atlantic seaways and the transpeninsular routes following for the

most part the major rivers. The network was all-embracing: all parts of Europe were interconnected.

What all this means in terms of mobility is difficult to quantify. The movement of commodities by land is likely to have been short-haul, with consignments changing hands many times as they were transported along the traditional routes. But the sea was altogether different. True, short-haul cabotage would have been practised but the sea encouraged longer journeys and there is ample evidence of this in the east Mediterranean and along the Atlantic façade. Journeys between the Tagus and Armorica (Brittany) and from Armorica to southern Ireland are quite likely to have been made, though with what frequency we can only guess.

Comparative ease of travel by sea would have encouraged the more adventurous to explore. The ethos of heroic travel that pervades the works of Homer is captured well by King Menelaus's boast:

> But when it comes to men, I feel that few or none can rival me in wealth, considering all the hardships I endured and journeys I made in the seven years it took me to amass this fortune and to get it home in my ships. My travels took me to Cyprus, to Phoenicia and to Egypt. Ethiopians, Sidonians, Erembi, I visited them all: and I saw Libya too. (The *Odyssey* IV, 75–85)

Here, admittedly, his exertions seem to have been motivated more by personal gain than by a quest for knowledge; but fame, fortune and self-fulfilment are frequently intricately linked and travellers' tales of far-flung places will have enhanced the wanderer's reputation. In such a context the Kivik lord may have set out on his journey to the south. How many others made comparable journeys, driven by a curiosity to know what lay beyond? The archaeological record holds many tantalizing clues; just one example will suffice. In Wessex craftsmen developed a particular technique to perforate amber spacer plates used to separate the threads in multi-strand necklaces. Since perforated amber spacers of this kind are known only in southern Britain and in Mycenaean Greece, and are totally absent from the rest of Europe even though amber objects are comparatively plentiful, the simplest explanation is that a consignment of amber containing perforated spacers was somehow transported from Wessex to Mycenae. Was it the result of a single journey – carried perhaps on a Mycenaean boat that had ventured into the Atlantic, or by an enterprising Wessex warrior exploring the wider world? Or could the carrier have been a Wessex woman wearing her finery as she left home as a gift to a Mycenaean prince? While possibilities are many, certainties are few. But what is certain is that the corridors of Europe were now resounding with whispers from far and wide. For those able to hear them, the excitement must have been palpable.