3500 BCE

1.1 !Kung hut

INTRODUCTION

For a million years, humans lived off hunting, food gathering, and fishing. From the perspective of our advanced world today we tend to look back at this and wonder how we could even have survived given all the difficulties. We once labeled these people savages or barbarians, and then we called them primitives. More recently we call them hunter-gatherers, as if all they do is obsess about food acquisition. But the !Kung, who have lived in the Kalahari Desert in Botswana for hundreds of thousands of years, spend only about 40 percent of their time hunting and gathering. The rest of the time, they do what most of us might do: they socialize, dance, cook, and rest.

In the Kalahari, mongongo trees, which produce tasty and nutritious nuts by the thousands, proliferate in mile-long groves. Tubers can be dug from the ground, and animal herds migrate through the territory, easy prey for a canny hunter and his poison-tipped arrows. The !Kung live in camps that are rebuilt every year near seasonal water holes. Women make the huts around a common campfire, usually under the shade of a large tree. The huts are not really to live in, since people tend to live mainly outdoors, but serve as storage areas for tools and as shade on a hot day. The modern world has little respect for its venerable ancestors. Because of forced relocations, mining on their territory, and fences cutting across their land, the !Kung people's survival into the next decades is much in doubt. It is not the natural world that endangers them, but our civilized world.

As populations expanded, groups would bud off to form new communities in the next valley or further along the shores. In this way, the first groups of people left Africa some 1.5 million years ago with a second group, our human ancestors, following around 60,000 BCE to slowly yet persistently colonize the globe, reaching the southern tip of South America around 13,000 BCE. First Society people, however, were not nomads as is so mistakenly assumed. Instead they tended to live within prescribed and familiar territories, moving seasonally between winter camps near rivers and upland summer camps for hunting and fishing. The ancient people of Australia, for example, moved in predictable cycles: in some parts of the year they lived in relative isolation, and in other parts they would get together for large annual ceremonial and social events.

During the Ice Age (ca. 25,000 BCE–ca. 15,000 BCE), humans faced a global phenomenon the likes of which we have never seen since. The extreme cold, which sent massive, mile-deep ice sheets far to the south of the polar regions, impacted Europe in particular. But the people there did not leave. This was not because they were trapped. It was because those areas had become a hunter's paradise, with bears, lions, and, above all, huge herds of horses, reindeer, and mammoth moving across the grassy landscape. The Gravettian Culture was the first to master the cold. They developed leather-making and the needle to create fur-lined clothing, boots, and jackets. In great festivals, they congregated near caves where artists had painted brilliant images of animals on the walls and ceilings. What form of magic these places produced is still unknown, but the quality of the art staggers the imagination even today. The animals were painted not as carcasses but as living creatures moving and breathing, and were made by artists who had practiced their skills over a lifetime. As the weather warmed, the hunters moved to the east, crossed Siberia, and around 13,000 BCE crossed Alaska to enter the open plains of North America. Called the Clovis People, they hunted mammoth and then, when the mammoth were all hunted out, they switched to bison. Their sacred landscapes include Seminole Canyon in Texas, with its ancient rock art depicting shamans and sacred animal spirits.

1.2 Haida settlement, Canada

The warming of the weather raised the levels of the oceans, separating Japan from China, and England from mainland Europe. It created vast rivers, swamps, and forests teeming with animals and plants, drawing humans to the river shores. It was, one might say, an age of affluence. At Lepenski Vir along the Danube River, a settlement of triangular huts emerged. The people there caught sturgeon, a fish that averaged some 3 meters long. Why go hunting when catching one fish would feed an entire community? The nearby forests provided a wide assortment of berries, mushrooms, and nuts to complement the diet. Nor was this village a solitary community. Similar villages lined the shores, and their inhabitants traveled by boat to connect with each other for ceremonial events.

Half a world away, another affluent society emerged along the northwest coast of Canada. It was a favorable site for many reasons. It was in a pocket of relatively mild weather, the result of cross-Pacific winds; it was also sited along the migration path of whales, and salmon came in the thousands to swim upstream to spawn. Huge cedar trees, sacred to the Haida, provided material for houses and boats. The tree was not just "wood." Its red color and sweet smell were indicators of its connection to the world of the spirits. Linear settlements sprang up along the shore, composed of large, clan-based community houses facing the water. Each house was a sacred diagram designed in relation to the cosmos, which for the Haida was divided into three shamanistic zones: the sky world, the earth, and the oceanic underworld. The building's frame system consisted of massive roof beams, often more than half a meter in diameter and spanning the width of the house, which ranged from 7.5 to 15 meters. These beams were supported by posts carved to represent important family ancestors or supernatural beings associated with the family's history. Walls were clad with split-cedar planks tied horizontally between paired upright poles.

It was not just rivers and shores that attracted human habitation to make the first settled communities, but also the emerging great rain forests. The Bambuti in Congo still today pay homage to a forest spirit, Jengi, whose power is thought to emanate through the world. Jengi is seen as a parental figure and guardian. Society is organized around individual households consisting of a husband, a wife, and their children, forming settlements that can number up to about fifty residents. The women build the huts that, in the shape of upside-down baskets, are made out of a frame of saplings and clad with leaves. Other rain forest cultures developed in Brazil, Central America, and Southeast Asia.

Beginning around 10,000 BCE in some places, the great First Society traditions that had sustained human life for so long began to change. Instead of hunting animals, humans began to herd them, and instead of gathering and tending plants, they began to domesticate a few chosen plants and grow them in organized fields. These changes altered

1.3 **Village scene**

1.4 **Pottery making**

the imaginaries of the spirit world. Cattle in particular were seen as living gods, requiring daily attendance and a culture of respect. They were not killed for food but were sacrificed to mark special events in the life of the community. Among the Dinka in the Sudan, a man knows his cattle by special names, sings songs to them, and sleeps next to them for long periods of time. Cattle are sacrificed only on special occasions, such as at weddings or funerals. Although only a few cattle-centric societies remain today, the impact of this worldview can be felt even in modern religions.

Just as important was the shift from gathering plants to farming. Rice in southern China and eastern India, millet in Africa and northern China, wheat and barley in the Levant, and corn in Guatemala—all rose from being just one of thousands of plants that humans tended to the precious focus of effort and devotion. The combined transformation of our relationship to animals and plants produced a new way of life: agropastoralism. While today we call this period the birth of agriculture, we have to remember that crops like rice and barley were not raised as food. They were gods. We have so secularized food production today that we forget that the birth of what we call agriculture coincided with profound transformations that deified certain foods and thus, it might be said, guaranteed the proper and complex work ethic needed for their production. The impact on women was particularly profound; harvesting, grinding, storing, and cooking were all largely women's work, as was pottery making, basket weaving, and, of course, the raising of children.

The emergence of pastoral and agropastoral cultures produced village societies organized around chiefs with more or less power depending on circumstances. Villages were well calibrated to meet the needs of the animals, to deal with the calendar of planting and harvesting, and to produce the necessary equipment for life, such as the bowls and containers that stored grain and water and that allowed fermentation and cooking to take place. These activities were all governed by ritual practices and unwritten rules of behavior that shaped the destiny of all. But village society could not spread just anywhere. It needed the right combination of good soil for farms, grasslands for cattle, forests for firewood, and upland areas for hunting—and, of course, water and salt.

The Mesopotamian highlands were perfect for such agropastoral societies, and beginning around 9000 BCE compact villages began to spread along the slopes above the great rivers in the plains. A similar expansion took place along the Sahel in Africa, where sorghum was the main plant, as well as in the foothills of the Baluchistan Mountains (barley), in northern China (millet), and along the Yangtze River (rice). By 5000 BCE these places had also established themselves as profoundly different from the First Society worlds that neighbored them, even if they maintained some aspects of the older traditions. Whereas the agropastoral tradition in Mesopotamia, the Indus Valley, China, and Egypt remained confined by their ecological niches, a remarkable transformation took place in Europe, where between 9000 and 4000 BCE, agropastoral cultures moved slowly along rivers and shores to reach even northern Ireland. There the newcomers thrived and built one of the greatest structures of the time, Newgrange, a vast artificial mound with a sacred chamber in its interior that was designed to mark the first rays of the winter solstice.

1.5 **Herding**

3500 BCE


Monte Verde
Valdivia Culture
Clovis Culture
Haida Society
Newgrange
Carnac
Catal Hüyük
Abydos
Samarra
Nabta Playa
Eridu
Mehrgarh
Niuheliang
Banpo
China: Hemudu Culture
ca. 5000–3500 BCE
Nabta Playa
ca. 9600–6000 BCE
Göbekli Tepe
ca. 9000–7500 BCE
Jericho
ca. 9000 BCE
Vinca Culture
ca. 5700–4200 BCE
Tell Aswad
ca. 9000–7500 BCE
Eridu settled
ca. 5000 BCE

China: Yangshao Culture
5000–3000 BCE

Hongshan Culture
4700–2900 BCE

Longshan Culture
3000–2000 BCE

▲ **Banpo**
ca. 4500 BCE

▲ **Niuheliang Ritual Center**
ca. 3500–3000 BCE

▲ **Yaoshan Ritual Altar**
ca. 3300–2000 BCE

Indus Valley: Early Harappan Period
ca. 5000–2600 BCE

▲ **Mehrgarh**
ca. 6500–2800 BCE

▲ **Harappa**
ca. 3000–1900 BCE

▲ **Dholavira**
ca. 2650–2100 BCE

4500 BCE **3500 BCE** **2500 BCE**

Late Neolithic Period
ca. 5000–2000 BCE

Early Bronze Age
ca. 3000–2000 BCE

◉ Bronze casting begins in the Near East.
ca. 3600 BCE

◀ **Catal Hüyük**
flourishes ca. 7400–5500 BCE

Mesopotamia: Ubaid (Eridu) Culture
ca. 5300–4300 BCE

Uruk Period
ca. 4000–3100 BCE

◀ **Tell es-Sawwan**
6000–3500 BCE

▲ **White Temple**
Begun ca. 4000 BCE

▲ **Temple at Uruk**
ca. 3400 BCE

▲ **Temple at Eridu**
4500–3800 BCE

◉ Invention of the wheel
ca. 3600 BCE

◉ Earliest readable documents in Mesopotamia
ca. 3200 BCE

Egypt: Pre-Dynastic Period
ca. 4500–3100 BCE

Early Dynastic Period
ca. 3100–2649 BCE

▲ **Tombs of Hor Aba**
ca. 3100 BCE

▲ **Royal Tombs at Umm el-Qaab**
3100–2890 BCE

▲ **Tombs of Hor Aba**
ca. 3100 BCE

Earliest tumulus tombs in Portugal
ca. 5000 BCE

Europe: Passage Tombs and Dolmens of Megaliths
ca. 3500–2500 BCE

▲ **Newgrange**
ca. 4000 BCE

▲ **Stonehenge**
Begun ca. 3000 BCE

▲ **Passage grave: Île Longue**
ca. 4100 BCE

◉ Saracen Ring added at Stonehenge
2500 BCE

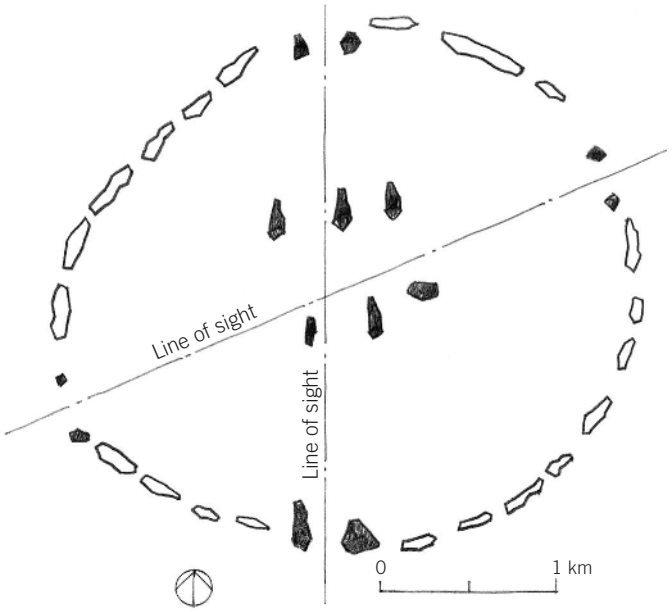
▲ **Carnac Stones**
ca. 3500 BCE

◉ Cursus tradition in England
ca. 3500 BCE

RITUAL CENTERS

In the agropastoral environment, humans began to think and act differently than their First Society ancestors had. Forests had to be chopped down, clay had to be gathered for pots that then had to be fired in kilns, granaries had to established, animals tended to, wool harvested and made into cloth; plants that were once considered food were now thought of as weeds that had to be culled from gardens and farm plots. Decisions had to be made about priorities; children had to learn their respective roles as adults; and priests had to secure the privilege of the divine. Customs had to be followed about social ranking, finding a mate, and building a house. Herds could die because of disease or predators, and crops could be lost to pests or carelessness. Grains could rot, and neighboring tribes could attack. The marshaling of energies that the village required, the stratification of gender activities along with the creation of a new set of powerful gods in privileged communication with the elites, produced a type of cognitive revolution. The cohesiveness that this required is impressive, and in many parts of the globe the village world is still the glue that holds society together.

One of the first sites where we see the transformation is Nabta Playa in what is today southern Egypt, some 80 kilometers west of Abu Simbel. It is now an inhospitable desert, but in 9000 BCE it was next to a large lake with pastured shores. The site featured a circle of slender upright stones, the main stones being four pairs set close together. Compared to Stonehenge, built 6.000 years later, the circle is small, measuring roughly 4 meters in diameter, but its purpose was similar: to organize time according to the seasons. Two of the stone pairs are aligned north–south, the other two pairs northeast–southwest. They aided in the observation of the motion of the sun and probably of the constellation Orion. Priests and their associated clans probably came to live at Nabta Playa permanently, with the population swelling periodically with the seasonal arrival of herder tribes who would have come from far afield with their cattle for large celebratory



1.6 Plan: Nabta Playa, Egypt

events. By 3500 BCE, however, Nabta Playa had become increasingly arid: the lake dried up, and the site was abandoned. The exodus from the Nubian Desert to the Nile River played a large role in the development of social differentiation in the pre-dynastic cultures of the Nile Valley. One important link between Egypt and the ancient cattle cult of Nabta Playa was Hathor, the goddess of fertility.

Another ritual site was on top of a hill near the village of Urfa in southeastern Turkey. Here, too, the now arid site was once a lush forest. The oldest layer of the site appears to date back to around 9000 BCE. The structures, called Göbekli Tepe, consist of several circular dry-stone walls, each of which contains monolithic pillars of limestone up to 3 meters tall. Since there is no indication of any roof covering, it seems that the circles were open-air ritual chambers. They are now called temples, but it is unlikely that they were temples in the sense of being used by a priesthood with organized devotional practices. What went on in these spaces is not known, but they most certainly had links to ancestor cults and might have been used in conjunction with mortuary rituals. The floors consisted of a concrete-like substance made of burnished lime. A low bench runs around the inside of the circle walls. The pillars show detailed reliefs of foxes, lions, cattle, wild boars, herons, ducks, scorpions, ants, and snakes, all executed with great skill, demonstrating that precision work—even without metalworking tools—was possible even at this early time.

If we add to these two sites the Niuheliang Ritual Center (ca. 3500–3000 BCE) in northern China, with its numerous platforms and structures, and, of course, Stonehenge (ca. 3000 BCE), we have four ritual centers—and there are certainly countless more—that served as gathering places and eventually as religious centers for newly settled communities. Niuheliang will be discussed in this chapter; Stonehenge, perhaps the last of the great early ritual centers, will be discussed in the next.

Around 3500 BCE something quite remarkable happened in four places on the earth: groups of people developed something that we today call cities. This transformation was not as natural as one might assume, even though it was dependent on several thousand years of village life and the necessary cohesion that came with it. In Mesopotamia, the farmers in the hills at first stayed away from the vast, overgrown, flood-prone swamps of the Tigris and Euphrates Rivers. But an intrepid group must have set out one day to try their luck. Finding a knoll, they dug up the reeds, planted barley, and carved out canals, activities that were hugely

1.7 **Göbekli Tepe, near Urfa, Turkey**

1.8 **Elam, a typical Mesopotamian city with walls and towers, as depicted in this bas-relief commemorating Assyrian king Ashurbanipal's conquest and destruction of the city in 647 BCE.**

labor-intensive. It was a success, built on the simple premise that by doing one thing well—growing barley—the inhabitants of an isolated place could trade for everything that they did not have. They created the wheel to speed up travel; they created writing to document trade transactions; they created city-scaled gods to protect them; they laid the foundation for laws and regulations; and they created walls to defend their precious grain surpluses on which the entire operation depended. The first cities of Mesopotamia were thus experiments in an extreme landscape. They were governed by an elite, with most of the work done by slaves from nearby conquered regions. Some cities thrived, some did not, but over time, the power and wealth that they created for themselves pushed their destiny forward. In Egypt, the story is similar, but here the rise of cities—more like sprawling villages—was the consequence of the rapid influx of refugees from the expanding Sahara Desert. Prior to about 5000 BCE the Nile was an unruly, lightly populated, swampy river, but with the drier climate that created the desert, thousands of people came with their animals and agricultural skills. Over time they refashioned the Nile into a fertile paradise. The intensity of this foreshadowed the rise of a controlling elite who became first chiefs, then gods.

In India along the Indus River, cities also emerged, spectacular in nature, because unlike in Mesopotamia and Egypt where the building material was largely mud-dried brick, here the inhabitants made kiln-fired bricks that could not only withstand the test of time but also allowed them to build close to the river, and to build pools, drainage systems, and multistory houses. Ships from these cities traded with the Mesopotamians to the north.

In China, the development of cities had a slightly different cast. Village communities had formed in the south in the swampy regions around Hangzhou Bay and the Yangtze River estuary, where rice could be planted. Villages were also forming in the north where people had long since discovered the value of millet, a hardy plant that grows on hillsides. Here people used a form of architecture well-known in the north since 25,000 BCE, the pit house. Dug partially into the ground with a superstructure of thatch held in place by posts and beams, these communal buildings were dry and warm and the focus of a range of ritual activities. Unlike the Mesopotamian cities, which were import-export centers, these dense villages were more self-sustaining as they attained the scale of cities. There were areas for the manufacturing of pottery and bronze, just as there were areas reserved for the elites.

These first cities produced a concentration of wealth and power that was to have significant implications for the destiny of humans and indeed for their definition of themselves as "civilized." But as much magic as they worked on the human imagination, these cities' experimental nature should not be forgotten. Cities were made; they were also made to be destroyed. The Chinese, in fact, would continuously destroy their cities; with a new dynasty, the old capital was often burned or leveled and the inhabitants forced to relocate. The Mesopotamians and Egyptians glorified their destruction of enemy cities, and so it went on—until even today.

Although urban densities were able to pull a large amount of resources into their orbits, around 3500 BCE they constituted only a tiny percentage of the world population, maybe as small as .001 percent. Most people lived in spread-out village societies, and many more lived in a world with no agriculture at all, as humans had for hundreds of thousands of years.

BEGINNINGS OF CHINA'S CIVILIZATIONS

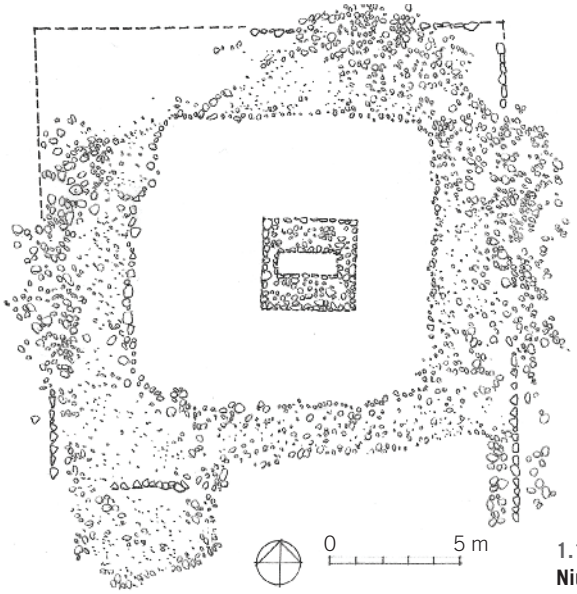
In China, the shift to an agricultural/village world took place around 9000 BCE. There was, however, no single "origin" of Chinese civilization. Instead, there was a gradual multinucleated development taking place somewhat independently at first, with the emphasis to the south on rice and to the north on millet and pigs. Rice grew wild and was then domesticated on the swampy shores and in the delta of the Yangtze River. Millet, which prefers a cooler climate, grows wild on hillsides, where it over time was also domesticated. Pigs played a role in village life from early times and, along with sheep, were introduced to northern cultures by 5000 BCE, if not earlier. By 4000 BCE, especially in the north, small but well-organized regional communities emerged. These included the Hongshan Culture (4700–2900 BCE) to the north of Bohai Bay in Inner Mongolia and Hebai Province, and the Yangshao Culture (5000–3000 BCE) in Henan Province. Geographically between the two, and developing later, was the Longshan Culture (3000–2000 BCE) in the central and lower areas of the Yellow River. The emergence of walls around communities is a clear indication that the political landscape was very much in flux. To the north, villages were generally composed of pit houses that, whether large or small, trace their ancestry back to 20,000 BCE and possibly earlier. Pit houses were used throughout Inner Asia by steppe hunters. People to the south developed houses on stilts, a natural response to the swampy soil of the rice paddies.

1.9 China's early agriculture

Niuheliang Ritual Center

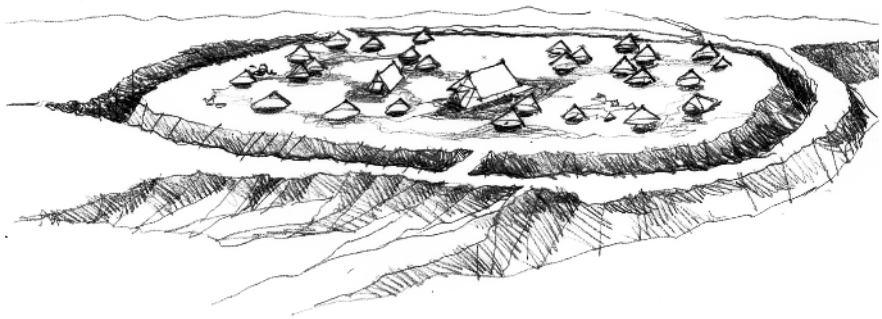
The Hongshan Culture, with its villages focusing on millet and sheep and pig grazing, was located along the Laoha, Yingjin, and Daling Rivers, which empty into Bohai Bay. Though scattered over a large area, the community's ritual life focused on a sacred landscape in which a mountain known locally as Pig Mountain must have played a part, as its silhouette is visible to the south. The ritual center consisted of at least fourteen burial mounds and altars over several hill ridges. It dates from around 3500 BCE, but its importance could well have been established earlier.

Though rituals would have been performed here for the elites, the large area of this sacred landscape implies that audiences for the ritual would have encompassed all the villages of the Hongshan Culture. The site might even have attracted supplicants from further afield. A key building was a structure that is called a goddess temple, though its purpose is not known. The walls, made of interwoven branches and covered with packed mud, leaned inward to form a tunnel-like space. Its main body was 25 meters from south to north, with secondary spaces projecting from that. On the outside, its surviving footings show that its surface was covered with geometric designs in high relief that were painted yellow, red, and white, all of which certainly suggests that it stood out in the landscape in a colorful way. To its north was a single detached room where excavations have uncovered clay body parts, including a head, a torso, and arms, belonging to an image of a protectress or goddess (from which the site got its name).



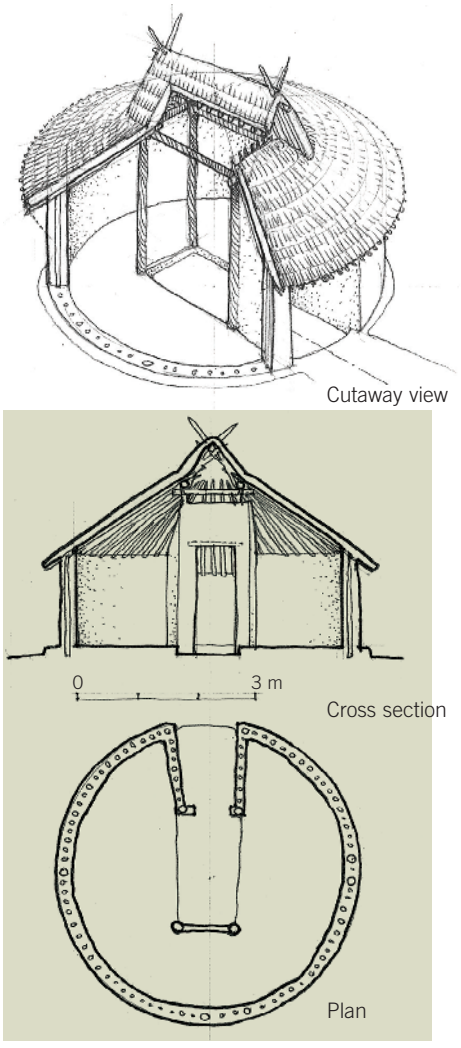
1.10 Plan: Cairn with stone tomb, Niuheliang Ritual Center, tomb site II

Another structure of interest to archaeologists is an artificial hill at the entrance to the valley. On the ground level, the mound is encircled by a ring of squared white stones. Another ring of white stones is embedded at the middle height of the mound; a third was placed near the top. Artifacts found near the top of the mound include crude clay crucibles used for smelting copper. Since the top of a hill is a surprising place to melt copper, the structure seems to have been meant for ritual events. Burial grounds on hills seem to mark the north and south extremes of the moonrise in the east. All in all, this center contains the essential elements of Chinese ancestor worship—burial cairns, platforms, and a ritual temple—as evidenced, for example, by the Ming tombs built five thousand years later.

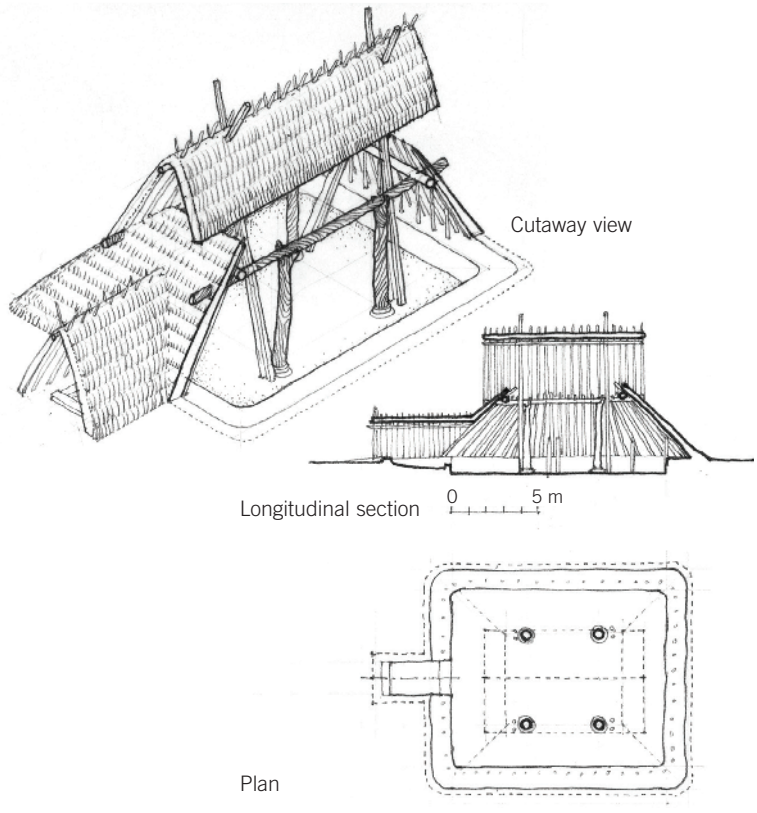


1.11 Reconstruction of Banpo village, China

In the valleys of the Yellow River we see the emergence of several compact villages, such as Banpo (near the modern-day city of Xi'an), which dates to about 4500 BCE and was part of the Yangshao Culture. It was surrounded by a ditch or moat 5 to 6 meters wide, probably for drainage and defense. The homes were circular structures of mud and wood with overhanging thatched roofs, all raised on shallow foundations with fire pits at the center. Entrance ramps sloped down into the dwelling. Such pit houses, with furs lying on the floors and hanging from the inner walls for insulation, were comfortable places to live. If the timber beams could be kept dry and the thatch was properly maintained, a pit house could last twenty years. The dead were buried in the back of nearby sacred caves or in simple pits outside the village in a communal burial area. The remains of children, it seems, were interred in urns just outside their homes. Within the town there were large open plazas and storage holes, and at the center of the village was a large house, presumed a clan or community center, which was built of a heavy timber construction. One area of the village was dedicated to the production of pottery, indicating the emergence of craft specialization. Pottery was used not only in daily life but also in mortuary rituals.



1.12 Reconstruction of circular dwelling at Banpo

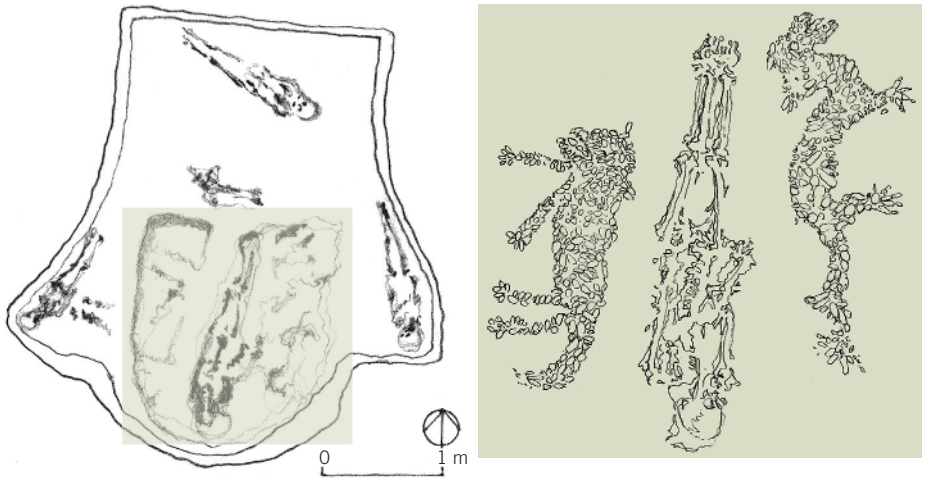


1.13 Reconstruction of meeting hall at Banpo

In terms of religion, the Hongshan and Yangshao cultures were shamanistic. A shaman is an intermediary between the natural and the spiritual worlds who travels between these worlds in a trance. A tomb at Puyang, dating from about 4000 BCE, is likely that of a shaman priest. It was made in the shape of a single, squarish room with a lobed space at the rear. A man was buried in the pounded earth floor, flanked by a dragon on one side and a tiger on the other, both painstakingly and beautifully made of hundreds of shells. Dragons and tigers, still central to Chinese Confucian symbolism, are considered to be prospectors in both life and death. Hill ranges, especially those with prominent peaks, are considered to be dragons.

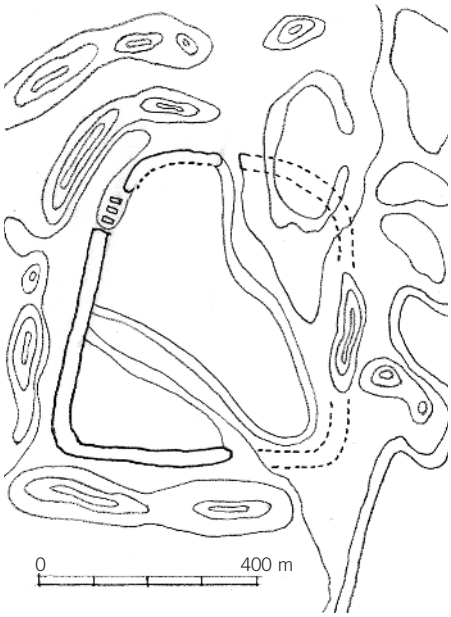
Along the Yangtze River, farmers had developed rice as their prime staple by around 5000 BCE, if not earlier. It was a labor-intensive crop that required level fields and the precise monitoring of water levels. The first culture to master rice farming was the Hemudu. Given the swampy nature of the land, the people at Hemudu built elevated houses that served for both living and storage. The houses were also ritual centers. This house type was introduced by rice growers to other parts of the world, most notably to Japan and the Philippines.

By the time of the Liangzhu Culture (3400–2250 BCE), located in the Yangtze River delta, we see the emergence of numerous small cities. Some, such as Shijiahe, had walls, others had none; some were regional centers with villages around them, others were more autonomous. A city near Yuhang, south of modern Shanghai, was quite large—3 million square meters. A roughly rectangular city, about 0.5 kilometers long, located a few kilometers east of the modern town of Pingyao, is believed to have been the capital of the kingdom. It had a fortification wall and a planned irrigation system.



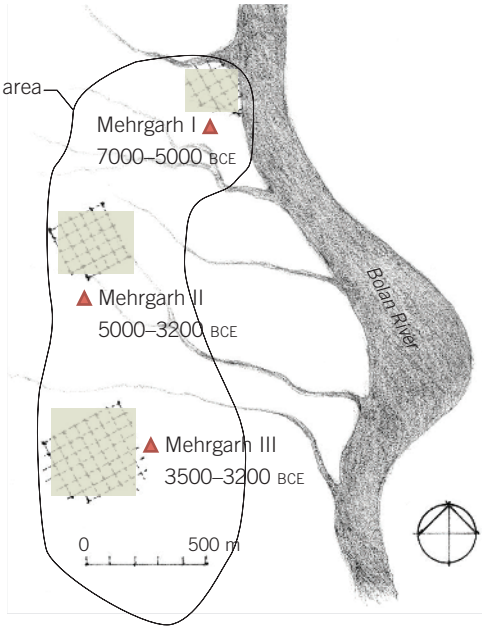
1.14 Dragon, human, and tiger figures found in tomb at Xisuipo, Henan Province, China

Rammed earth platforms on which palaces and temples were built were now a common feature of Chinese architecture. These platforms (known as *hang-t'u*) were created by pounding layers of 12 to 14 centimeters of earth onto each other with wooden or stone mallets, creating a very hard and long-lasting material. Since what was built on top was made of wood, nothing of this superstructure remains. A Liangzhu Culture ritual altar at Yaoshan, located to the west of Tai Lake, gives some indication of the religious edifices of the time. A ditch defines a sacred precinct extending over 25 meters square, at the center of which is a platform measuring 6 by 7 meters constructed of rammed red earth, red being a particularly sacred color. Archaeologists found twelve graves, presumed to have belonged to priests, arranged in two rows within the platform. It is still unknown how this platform was used, though it most probably involved ancestor worship and ritual feast offerings. The use of jade for religious and devotional objects was by this time common to all of the Chinese cultures; the quality of Liangzhu jade was, however, quite remarkable. Though there were several sources, one was in the mountain deserts of modern-day Xinjiang Province in the northwest of China.



1.15 Walled city of Shijiahe, China

1.16 Location of the Indus civilizations of Mehrgarh and Harappa
This period is characterized by the elaboration of ceramics and the beginning of copper metallurgy, stone-bead making, and seal-bone carving. The beginning of writing is seen in the form of graffiti on pottery from around 3500 BCE.



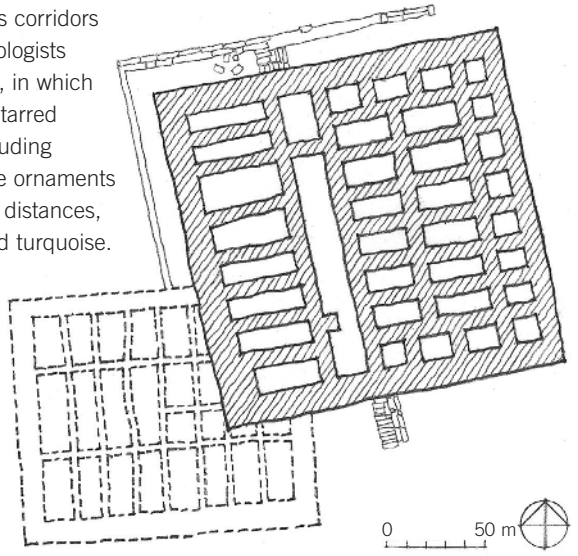
1.17 Site plan of Mehrgarh, Pakistan

MEHRGARH AND EARLY INDUS SETTLEMENTS

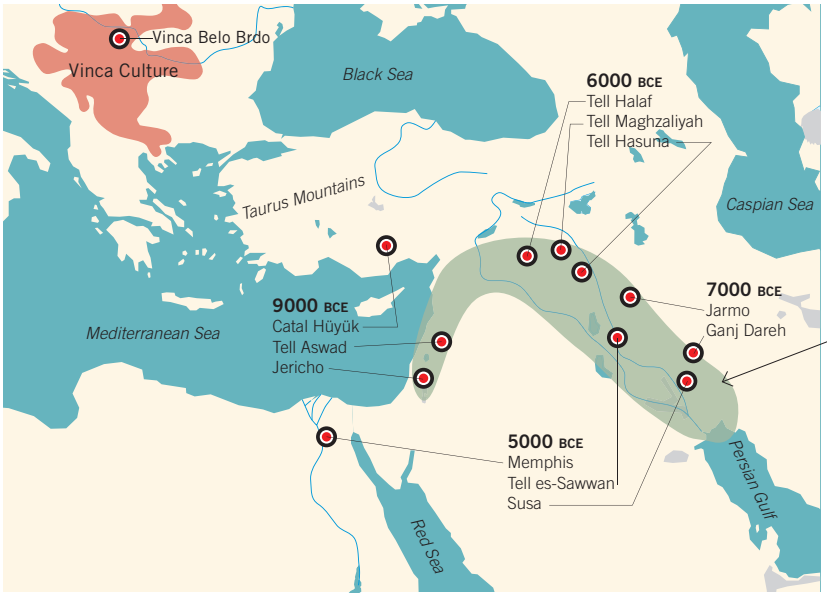
Though evidence of the Neolithic occupation of India dates back to 10,000 BCE, settled cultures began to emerge around 7000 BCE, in the eastern hills of the Baluchistan Mountains in today's Pakistan. It was an agropastoral environment typical for the age, allowing farming along the slopes above the river, herding in the flat lands of the valley, and hunting in the hills and mountains. Around 6500 BCE, one community seemed to rise in importance and became the first in a long line of proto-urban environments that were soon to grow here. Known as Mehrgarh, it was strategically located overlooking the Kachi Plain southeast of modern Quetta near the Bolan Pass, an important gateway connecting South Asia to the rest of the continent. Its five-thousand-year history can be traced from a village to a regional trading center that covered, at the peak of its development, an area of 200 hectares.

By 3500 BCE, its occupants had mastered extensive grain cultivation. Dominating the urban landscape were mud-brick buildings presumed to be granaries, designed as multi-roomed rectangular structures with a long narrow corridor running more or less down the center. The absence of doors suggests that grain was fed from the top, as it would be into a silo.

Though the presence of these granaries connotes social organization, there is no evidence of dominant temples or ritual structures, nor are the granaries aligned with adjoining structures. And yet it is clear that the granaries were the center of social and ritual life. Outside one such granary, along its western wall, a large hearth has been found, complete with several hundred charred grains. Along the southern wall, archaeologists found the remains of the stone tools and drills of a steatite- or soapstone-cutter's workshop. On the eastern side, there were heaps of animal bones mixed with ashes, indicating the presence of intense butchering activity. Life, in other words, was organized around the sacred granaries. The granaries were also associated with mortuary practices: human bones, presumably those of priests, were found buried in its corridors and intermediary spaces. Archaeologists excavated about 360 such tombs, in which the dead, sometimes buried with tarred baskets, had funerary effects including skillfully crafted ornaments. These ornaments used materials brought from long distances, such as seashells, lapis lazuli, and turquoise.



1.18 Plan: Mud-brick granaries, Mehrgarh II



Mesopotamia comes from the Greek words *mesos* and *potamas*, meaning "middle river," and refers to the fertile plain between the Tigris and Euphrates Rivers.

The Fertile Crescent is an agricultural region that runs along the foot of the Taurus and Zagros Mountains in a broad arc from the eastern shores of the Mediterranean to present-day Iraq.

1.19 Fertile Crescent: An early, dense network of cities and villages

THE VILLAGE NETWORKS OF MESOPOTAMIA AND THE BALKANS

The shift to village-world farming took place in the Levant around 9000 BCE. During a few centuries of cold weather, two plants in particular seemed to thrive, wheat and barley. The locals figured out how to tend these grasses into larger and larger patches. This, combined with the domestication of sheep and goats and the herding of cattle, produced a culture far different from that of their ancestors. Ritual practices changed, as did gender roles. Clan lineages became important, and with clans there emerged chieftains, who along with ritual specialists managed the complex sequence of activities. By 8000 BCE, a network of agropastoral villages had formed in the highlands of the Levant and from there spread eastward into the upland reaches above the Euphrates River and even northward into the Balkans.

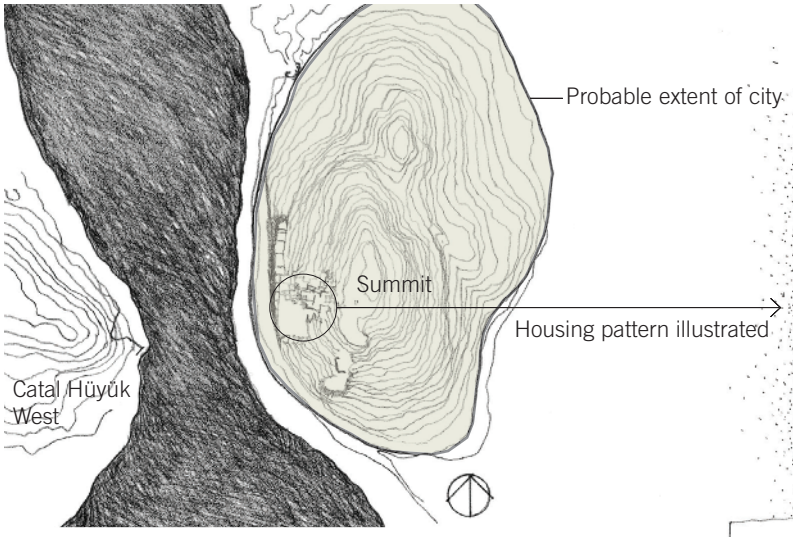
Catal Hüyük

As village communities developed in the hills of the Levant and overlooking the Tigris and Euphrates Rivers, one commodity was sought after in particular: obsidian. This black volcanic rock with its sharp edges could be fashioned into small blades that were attached to sickles. The result was a much faster harvesting time. The problem was that obsidian was a rare commodity that came from the mountains in Anatolia.

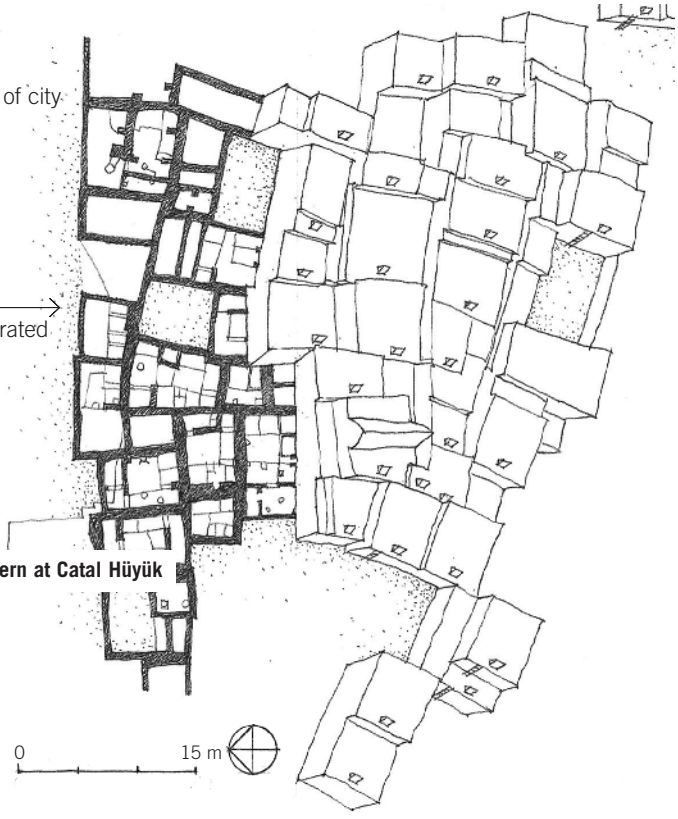
A remarkable settlement developed as one of the main suppliers of obsidian. Known as Catal Hüyük, the city (near the modern city of Konya, Turkey) dates back as far as 7400 BCE; by the third millennium BCE it had a population of about eight thousand. The city was located in the center of a large, well-watered valley and next to a river that fed into a nearby lake. The lake and river have long since dried up. What has been recovered archaeologically is but a small part of the city that followed the slopes of the hill.

The city consisted of rectangular flat-roofed houses packed together into a single architectural mass with no streets or passageways. Astonishingly, walls made of mud bricks reinforced by massive oak posts were not shared, meaning that where we see a wall, we are really seeing two walls, one for each house. Why this developed has not been clearly answered. Inhabitants moved across rooftops and descended into their homes through the roofs via ladders. Light came through small windows high in the walls. If a family died out, its house was abandoned for a period of time, leaving gaps in the urban fabric, until eventually the space was reclaimed. The typical residence contained one large room connected to smaller storage rooms. The main room was

1.20 Typical Iranian mountain village



1.21 Site plan: Catal Hüyük, near Konya, Turkey

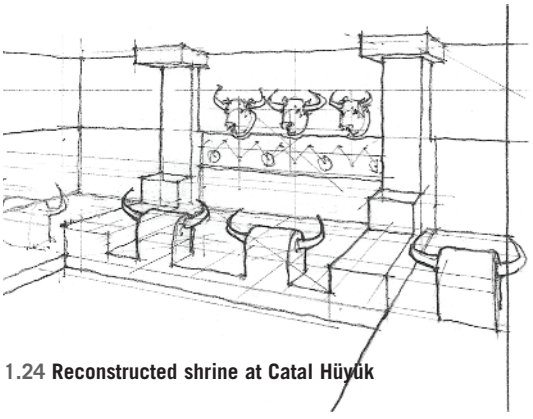


1.22 Housing pattern at Catal Hüyük

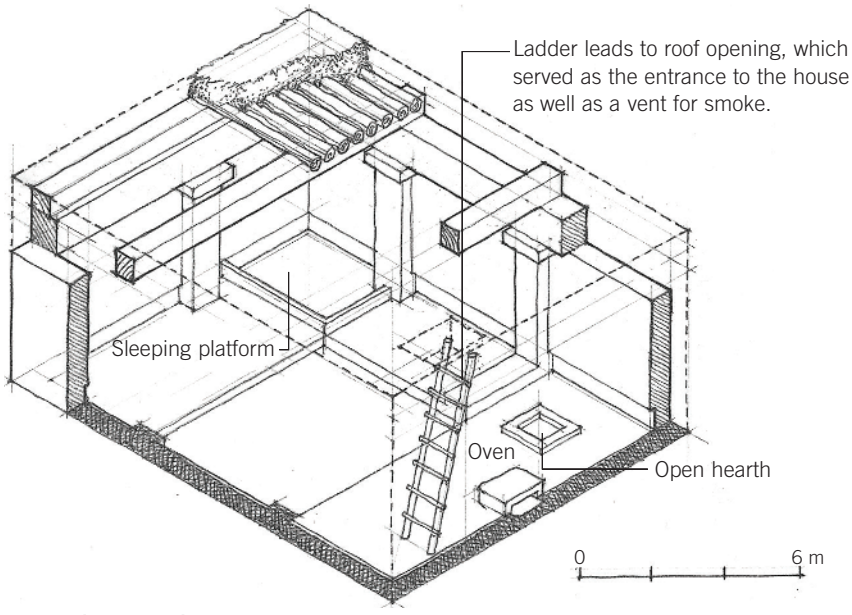
equipped with raised benches, ovens, and bins, and its average size was a generous 5 by 6 meters. Walls were plastered, and many were decorated with hunting scenes, textile patterns, or landscapes. The horns of animals, especially cattle, were mounted on walls.

There was no central, communal sacred space. Each house had its own shrine consisting of a wall decorated with bulls' horns. In some cases, pairs of horns were set in clay at the edge of platforms or embedded in benches. The dead of the family were buried in this room and their bones incorporated into the shrine. (Bodies were left outside until only the bones remained.) It seems that over time, some houses were used more as clan ancestor shrines and less as houses.

1.23 Bull design on a shrine wall at Catal Hüyük



1.24 Reconstructed shrine at Catal Hüyük



1.25 Typical house in Catal Hüyük

1.26 Terra-cotta figurine of seated goddess from Catal Hüyük

The principal deity was the mother goddess. Figurine representations of her, made of a variety of materials, have been found throughout the village. One statue, remarkable for its bold three-dimensional design, is of a voluminous seated woman giving birth. The chair on which she sits has armrests in the shape of lions. The figurine represented fecundity and regeneration, and was part of the widespread mother-goddess worship typical of European and Mediterranean late Stone Age and early Bronze Age societies.

Catal Hüyük was at the northern end of a zone of developing urbanization that reached from Jericho (in Israel) to Tell Aswad (in Syria) and Susa (in Iran). Jericho was a major city—probably the largest in the whole area. Like Catal Hüyük, it had the benefit of local mines. Susa had the benefit of a well-established network of nearby villages in the Zagros Mountains, which constituted a close supply of metals. The Karun River, a river no less important than the Tigris and Euphrates, connected the city to the world at large; grains, figs, and lemons were raised in the river's broad valley.

Tell es-Sawwan

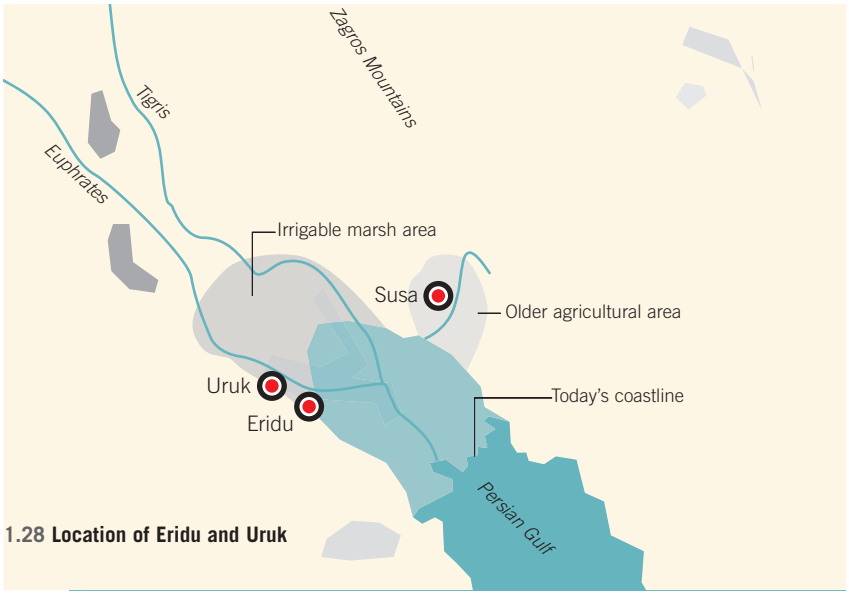
The climate in Mesopotamia back then was cooler than it is today, meaning that the verdant valleys of the Tigris and Euphrates Rivers were far different from the deserts found in the region today; in the highlands, forests were interspersed with steppes and savannas rich in flora and abounding with goats, boars, deer, and foxes. Farmers worked in the valley, but the community lived in the more easily fortifiable hills. Shepherds lived in the steppe regions between the farms and the deserts. In the areas around the Black Sea, one would have found a similar fabric of habitation, except there the locals discovered that their hills contained obsidian, copper, and salt, which became important commodities for trade. Around 5000 BCE the two worlds cohered into recognizable cultural formations: the Vinca in Romania and the Samarra in Iraq. A few places stood out, like Jericho (in Israel) and Tell Aswad (in Syria, 30 kilometers east-southeast of Damascus), which were larger than the rest. Also important was Catal Hüyük in Turkey, which was a key source of obsidian, a volcanic glass that was needed for sickle blades.

One of the most important groupings of villages dating from this period (6000–3500 BCE) was located just to the east of a rain-fed agricultural zone that arches northeastward from the northern tip of the Persian Gulf along the flanks of the Zagros Mountains. Among these settlements was Tell es-Sawwan, on the left bank of the Tigris near Samarra. It started as a small village that became fortified, growing over time into a substantial community. The plan shows a clear hierarchy, with the important buildings in the southern half. The central building is symmetrical and has a hall or corridor down the center; it was built at a later stage in the development of the village. Its purpose is unknown, but it was possibly a granary. There are about seven or eight houses that have nearby areas for sheep and goats. The basic building material was mud and timber; the mud was mixed with reeds and dried in a mold to create bricks, an innovation that remains a characteristic of the region even today. Rooms were rectilinear, measuring, on average, about 1.5 by 2 meters. The horizontal roofs were made of beams of oak on which were placed a layer of branches and reeds sealed with mud, bitumen, and gypsum. The interior wall surfaces were decorated with gypsum plaster, which had been developed as early as 7000 BCE and which was to remain a central part of building construction in the entire area. From the extensive outcrops of rock gypsum in northern Iraq and Syria, stone blocks were mined, stacked, and burnt to form an easily transportable white powder. This building material was not only used locally but also exported as a trade commodity. The development of trade in craft goods, pottery, building materials, and metal objects stimulated the economies of the region and played a central part in its drift toward craft specialization and urbanization. The Samarra Culture produced abundant grain, which was then exported to surrounding regions.

Though we often think of the Tigris and Euphrates region as the birthplace of urban civilization, the truth is that civilization—if that complex and awkward word can be used, at least in this area—was the product of a combined culture in which some people raised grain while others built mines. The oft repeated image of Mesopotamia as a "Fertile Crescent" is flawed if one does not add the Metal Crescent that embraced it. In Mesopotamia, grain and metal were mutually reinforcing commodities. The principal copper-producing areas stretched from the Caspian Sea through Anatolia and around the Black Sea.

An important early Copper Age society, known as the Vinca Culture, flourished from 5500 to 4000 BCE in an area that stretches from present-day Bosnia to Romania. Whereas the Mesopotamians developed mud-brick walls covered with plaster to protect the walls against moisture, the Vinca lived in freestanding rectangular houses with walls made of wattle and daub. The roofs were pitched and made of thatch. Their ritual world was intense. The Vinca had house shrines with an assortment of strangely carved deities that governed fertility and that spoke to the ancestors or gave omens.

1.27 **Vinca statuette**



1.28 **Location of Eridu and Uruk**

The Taurus Mountains in eastern Anatolia, known for their tin mines, played an equally important part in the West Asian economy, since tin was needed, along with copper, to make bronze. Though there were many copper-producing areas, tin was more rare. An ancient tin mine was discovered at a site named Göltepe, which was a large village from around 3290 to 1840 BCE. The miners, using narrow shafts, brought cassiterite ore to the surface, where it was crushed, washed, and smelted with charcoal in small crucibles rather than in the large furnaces characteristic of copper-smelting sites. By measuring the enormous deposits of slag (600,000 tons in one pile), researchers have ascertained that this was a major site during much of the early and middle Bronze Age.

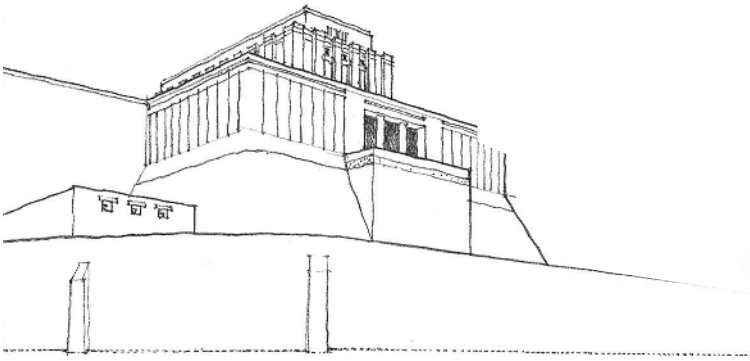
Metal began to play an important part in international relations in the third millennium BCE. Around 2350 BCE, Sargon of Akkad invaded Anatolia from his lowland base to secure trade routes. In records that have been found, he boasts that a single caravan carried about 12 tons of tin, which can make 125 tons of bronze—enough to equip a large army. Today it is widely accepted that mining was responsible for vast deforestation and played an important part in the desertification of western Asia.

Eridu and Uruk

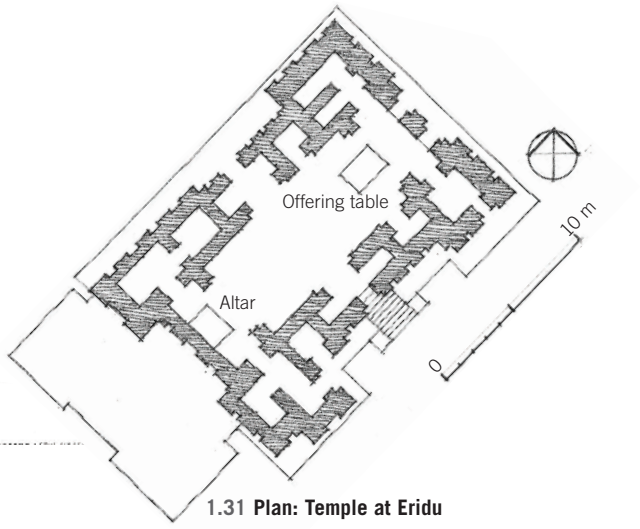
With this in mind we can now better understand the rise of the first cities in the marshes of the Tigris and Euphrates areas. Though villages spanned the area from the Levant into northern Syrian and Iraq, few people ventured into these marshes, overgrown with tall reeds, useful for boats and thatching but little more. It was an extreme landscape that had no lumber for roof beams, and no metal or even stone. But around 5000 BCE we see the first attempts to transform this landscape. Societies gave up their partial dependency on an integrated farming-hunting lifestyle and concentrated on farming alone, the aim being to produce huge grain surpluses that would be traded for other things. These cities were not secular adventures. They were built at the command of the deities who in a sense sponsored these surplus-making enterprises. In Mesopotamian mythology it was never the humans who created cities, but the gods themselves.

But back in the realm of the humans, the making of these places did go hand in hand with technical advances. The Tigris and Euphrates, unlike the Nile, flooded before the harvest, in April and May; this had made lower-lying reaches unusable for agriculture. But sedimentation brought by the rivers tended to build up natural levees that farmers could reinforce, allowing the canal bed to become somewhat higher than the surrounding countryside. Farmers could then make openings in the levees to feed water into the irrigation channels, as they still do today. Aerial photography has recently proven the extensive nature of these ancient canals and dikes, some of them more than 100 kilometers in length.

1.29 **Iraqi marsh**



1.30 **Temple atop the stone-faced platform at Eridu, near Abu Shahrain, Iran**



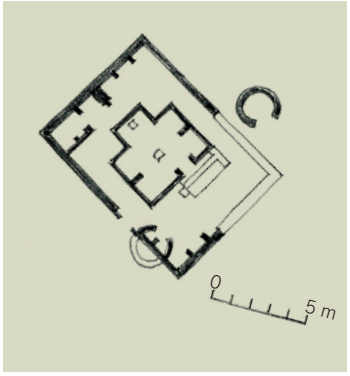
1.31 **Plan: Temple at Eridu**

The relationship with the rivers was a delicate and dangerous one. The system was vulnerable to flood, war, and neglect. Records from Ur deal repeatedly with repair work. But the investment was worth the effort. In a few centuries the area became an economic engine unparalleled anywhere in the world except in Egypt. Though these cities are discussed in relationship to advances in agriculture, what we really see are cities serving by necessity as export and import centers.

Eridu and Uruk were, in a sense, *modern* cities dependent on a single economy of grain, requiring the control and movement of goods. It thus stands to reason that it was here that the wheel came into its full use to haul loads over long distances, and that standardized weights were invented at this time. Another innovation was one of the great civilizational achievements: writing, which was put to practical use to record trade transactions and keep up with inventory. Concomitant with this was the development of a legal and archival system. Evidence of the impact this made can be found in vestigial remnants of words deeply embedded in our present-day language. In Ur, the ancient title designating "king" is *lugal*, which is probably the origin of the Latin word *lex* ("law") and the English word *legal*. And another ancient Mesopotamian word, *pala*, referring to the garment of kingship, constitutes the root of our word *palace*.

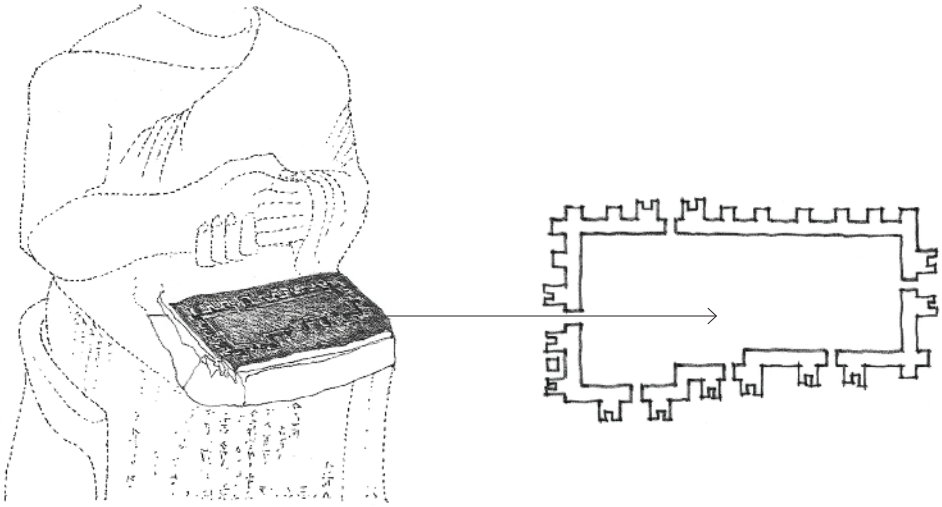
We see the emergence of a complex religious world in tune with the equally complex life of urban civilization. The mother goddess, who had ruled in many places throughout Eurasia, now had to compete with an expanding list of divine presences—including powerful male gods who tied society firmly into a network of obligations. Significantly, the mother goddess Apsu, who controlled the oceans, was "killed" by her son Ea, earth, who divided her unruly waters into chambers. Concurrent with the shift was the emergence of a priestly class responsible for all aspects of society, from religion to administration to technology. The priestly class was responsible not only for the proper communication with the deities through food sacrifices and ritual events, but were also the architects of increasingly larger buildings to stage their power.

The culture that first began to master the Tigris and Euphrates Rivers as early as 5000 BCE was known as the Ubaid. Around 3000 BCE, they were superseded by the Sumerians, who were to no small degree the first modernizers, replacing old and well-established traditions with new and better-organized ones. Eridu was located on the banks of the Euphrates in the delta, which has since silted up so that the ancient site is now located 90 kilometers inland. Originally, however, Eridu had easy access to boats coming up from the south.



1.32 **Temple XVI–XVIII at Eridu**

The temple at Eridu was rebuilt seventeen times (4500–3800 BCE), with each effort built directly over the earlier one, and with each one being bigger and taller, resulting in a massive building, a veritable mountain of bricks. The earliest temple was a simple box with an altar at the back and an oven outside in the front, where sacred bread offerings were prepared. The last temple, positioned on an enormous plinth of clay bricks, was painted in vibrant colors and was visible for miles. It had a form defined by rhythmically spaced buttresses, and though roughly rectangular in shape, it had an irregular perimeter. A flight of steps at the center of the broader side led up to the entrance, where a shallow vestibule gave access to a large central room oriented lengthwise. Ancillary spaces, probably used as reliquaries, were located at the corners.



1.33 Statue of King Gudea at Eridu, with a temple plan carved on a lap tablet

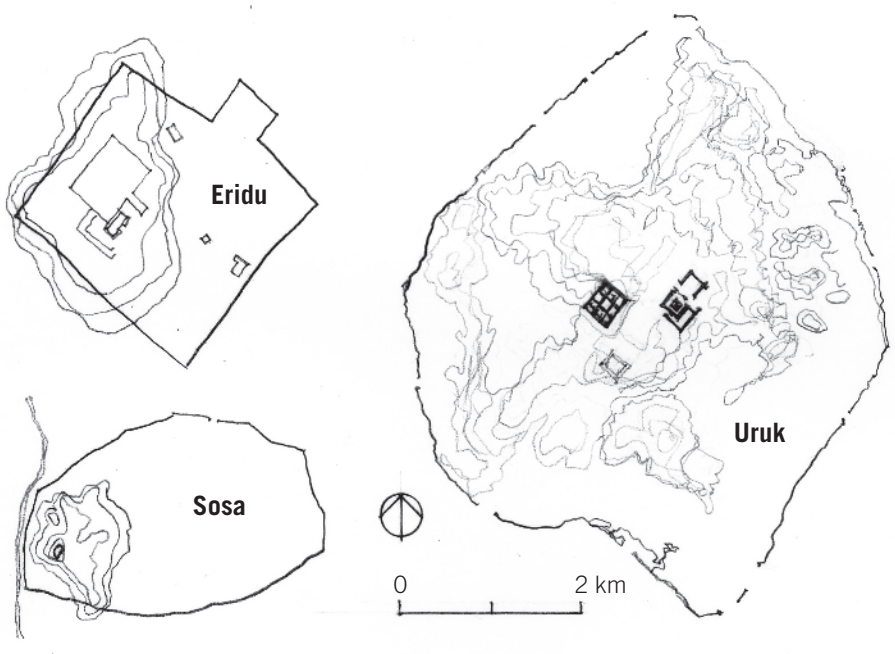
The chief deity was Ea, son of the mother goddess Apsu; he was not only an earth god but also manifest in "sweet waters." He was seen as crafty, for he "avoids rather than surmounts obstacles, goes round and yet gets to his goal." Ea, who in some accounts made human beings by mixing his own essence with that of his brother, Enlil (the earth and storm god), was also worshipped as the god of wisdom and as a friend to humankind. Images of Ea show him wearing a cloak of fish scales, and fish bones have been discovered near the offering table at Eridu. A text written somewhat later states that

> When Ea rose, the fishes rose and adored him,
>
> He stood, a marvel unto the deep…
> To the sea it seemed that awe was upon him;
> To the Great River terror seemed to hover around him
> While the south wind stirred the depth of the Euphrates.*

*Thorkild Jacobsen, "Sumerian Mythology, a Review Article," *Journal of Near Eastern Studies 5* (1946): 140.

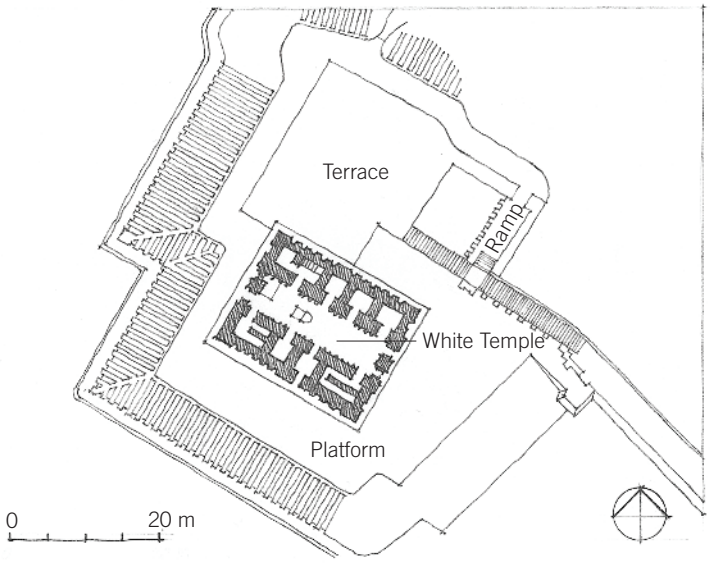
The Temple at Eridu served as a prototype for later efforts: a statue made about a thousand years later, in 2150 BCE, shows the plan of a temple with similar attributes. It is no sketch, but a precise plan with door and pilasters drawn in, all to scale. It is placed on the lap of King Gudea of Lagash and, in its accuracy and precision, leaves no doubt as to the planning that went into these early temple designs. Its position on the king's lap also proves that the plan was more than just a convenience of the builders: it was an expression of the claim to legitimacy of the monarch and his sacrosanct function.

Uruk developed into a significant, large city with a possible population of fifty thousand. It was dedicated to the god Anu, a sky god, an important and newly emerging deity linked to the number one, and thus to mathematics and trade. His temple, the so-called White Temple, begun around 4000 BCE and expanded over the next centuries, rested on a broad terrace on top of a tall artificial hill, irregular in outline and rising 13 meters above the plain, with its vast expanse of fields and marshes. Access was by a stairway on the northeastern face.



1.34 A size comparison of Eridu, Susa, and Uruk

1.35 Mosaics from the Stone-Cone Temple in the Eanna District of Uruk, near Samawa, Iraq



1.36 Plan: White Temple at Uruk

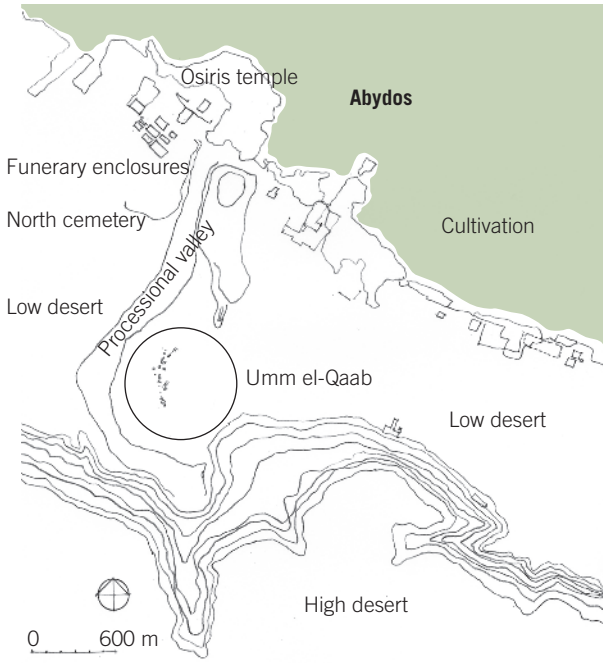
The White Temple's overall shape was simpler than that of the Temple at Eridu, but as at Eridu, one passed through a shallow vestibule into a great hall. In the White Temple, however, there was in one corner a platform or altar with a flight of narrow steps leading up to it. Toward the middle of the space was an offering table with a low semicircular hearth built up against it. To the west of the building there was another temple built out of stone that had been imported from the mountains to the west. Its purpose and the reason for its peculiar plan are not known.

During this time, Mesopotamian builders discovered how to use the kiln to harden bricks, roof tiles, and drainage tubes. The Mesopotamians may have acquired this skill on their own but more likely learned it from the Indus Valley civilization, with which they most certainly were in contact and which had developed brick very early on. As wood for kilns was scarce in the Mesopotamian marshes, bricks were a luxury item and were mainly used for palaces, temples, and gates; the Gate of Ishtar at Babylon is the most famous. The kilns devoured enormous amounts of wood, depleting wood resources and contributing, it is now thought, to the growth of the desert that is today pervasive in these parts. The use of brick in building foundations in Uruk indicated a building's status. The brick city wall was seen even by Mesopotamians as one of Uruk's wondrous aspects. Near the beginning of the epic of Gilgamesh, composed in the later third millennium BCE, we read:

Look at its wall which gleams like copper,
inspect its inner wall, the likes of which no one can equal!
Take hold of the threshold stone—it dates from ancient times!
Go close to the Eanna Temple, the residence of Ishtar,
such as no later king or man ever equaled!
Go up on the wall of Uruk and walk around,
examine its foundation, inspect its brickwork thoroughly.
Is not (even the core of) the brick structure made of kiln-fired brick,
and did not the Seven Sages themselves lay out its plans?*

*Maureen Gallery Kovacs, trans., *The Epic of Gilgamesh* (Stanford, CA: Stanford University Press, 1985), 3.

1.37 **Early dynastic Egypt**



1.38 **Site of royal tombs at Umm el-Qaab, Abydos, Egypt**

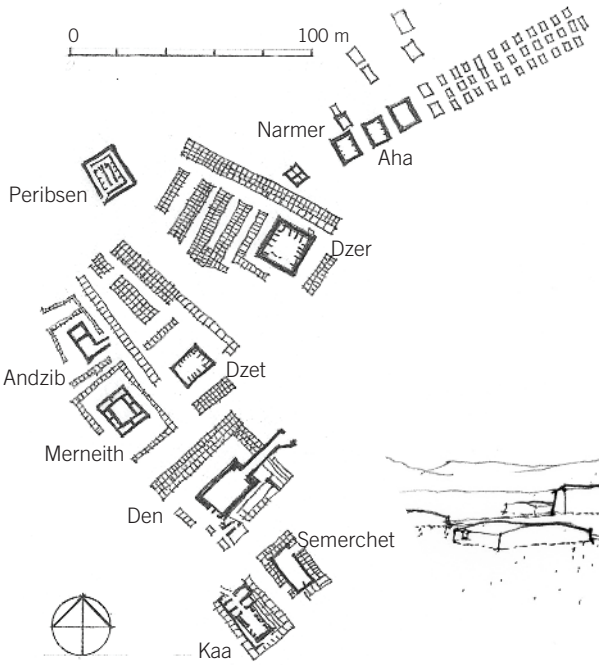
PRE- AND EARLY DYNASTIC EGYPT

North Africa was once a vast, fertile savanna of scrub forests and pasturelands that was populated by humans early on. It was here, as we have seen at Nabta Playa, that cattle were first domesticated. But in the sixth millennium BCE, a dramatic warming affecting the whole globe changed North Africa bit by bit into the endless stretches of sand that we now call the Sahara Desert. The populations moved either westward to Morocco, Spain, and beyond, or eastward to the banks of the Nile. The density of the Nile River population was unlike anything one would have seen anywhere else in the world at that time; that it did not overwhelm the social system was predicated on several conditions, one being that the local elites quickly learned to define themselves as divine, assuring the mechanism by which to protect and isolate their power. This meant that Egyptian religion never went through a chthonic phase based on the mother goddesses and caves that were common in many places in Eurasia and the Mediterranean and that would thrive in places like Crete and Malta for a long time. Egyptian religion was from the start a religion for the elite alone. There were no epic tales of communal destiny, but rather myths of heroic actions of kings who passed the torch of succession to the next generation. This explains why a complex pantheon of gods, stretching from the bovine Hathor to the more abstract Ptah and Amun, could develop so quickly. It was only during the New Kingdom (1540–1069 BCE) that the features of this religion began to have a broader role in society.

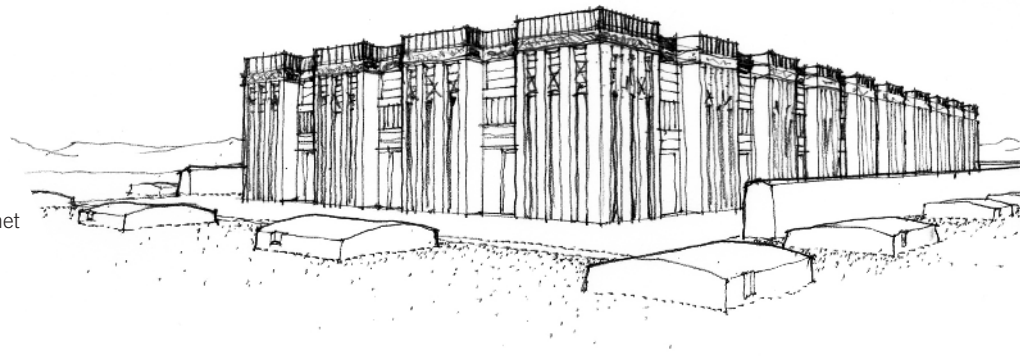
Another factor that stabilized Egypt's existing social order was that the Nile flooded after the harvest in the middle of October; more people working the fields therefore resulted in the production of more food. But in contrast to the celebration of water and food, there was, for the Egyptians, the fearsome entombing power of the earth. Life and death, the river, and the mountains of sand became intimately and naturally connected to each other around the all-encompassing mythology of divine rulership.

The tombs of the First Dynasty (3100–2890 BCE) are located at Abydos, an important early city about 100 kilometers downstream from Thebes. The tombs are outside of town under the face of an imposing cliff. A gorge opens out dramatically through the cliff at that spot and, according to some scholars, this opening was regarded as the entrance to the netherworld. The site was accessed by a processional route from a valley temple. The oldest tombs, of Narmer and Aha, are rather simple brick-lined rooms placed in the ground and covered with a wooden roof at ground level. Aha's tomb consisted of three chambers stockpiled with provisions for a lavish life in eternity. There were most likely large cuts of ox meat, as well as freshly killed waterbirds, loaves of bread, dried figs, and jars of beer or wine, each bearing Aha's official seal. Beside his tomb more than thirty ancillary graves for servants and animals were laid out in three neat rows. The tomb of Queen Merneith (ca. 2900 BCE), is, like its predecessors, largely sunken underground, except that now the storage rooms are part of the main structure, in the form of long, thin rooms.

The ancillary tombs are also integrated into the design as a type of frame set at a respectful distance from the tomb chambers. This framing is open on its southwestern side, presumably so that the spirit of the dead can exit through the gap toward the gorge. The tomb of the next ruler, Den, makes this connection to the cliff even more explicit. Though the main entrance is from the east, there is a special chamber next to the tomb with a separate staircase leading back up to the surface and to the west.



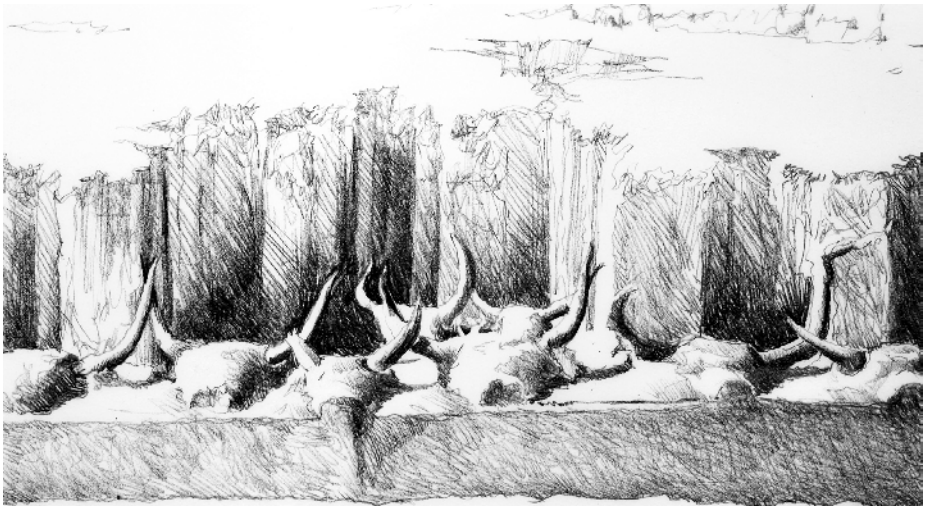
1.39 **Royal tombs at Umm el-Qaab**



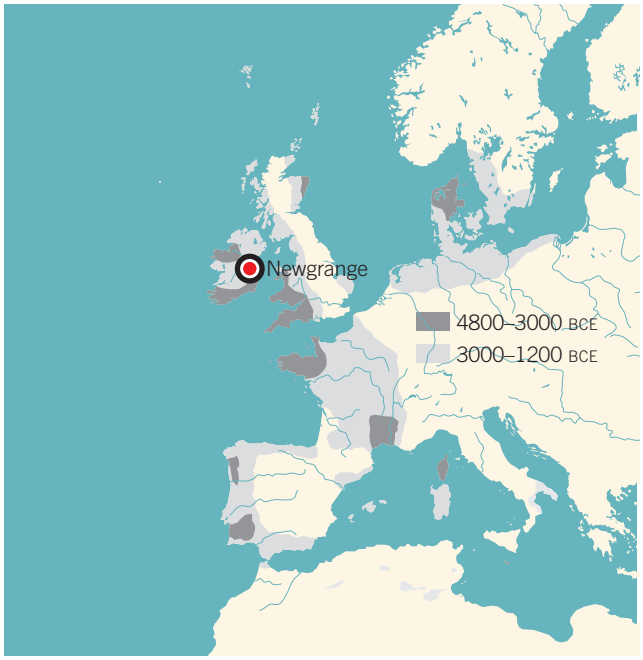
1.40 **Tomb of King Djed at Saqqâra**

The design and the decoration of these tombs clearly anticipates the development of the mastaba (from the Arabic word for "bank"). The grandest was the tomb of King Djed at Saqqâra (ca. 3100 BCE), just outside of Memphis. Some argue that the complex niche pattern in the walls represented wooden or reed construction; others have suggested an influence from Mesopotamia or the Near East. Only the five central chambers, dug into the earth, constitute the tomb. The whole was roofed over and plastered to appear as a solid but colorful plateau set against the sand. There was a low bench surrounding the superstructure at the base of the main exterior wall; on this platform were laid about three hundred clay-modeled bull's heads provided with real horns. The facade was was painted white, whereas the innermost panels of the large niches were painted red.

In this early stage of Egyptian culture, there was no temple architecture such as one might find in the Mesopotamian cities, where religious practices, highly visible around the ziggurat temples, unified broad swaths of society. Instead, architecture, defining the interface between life and death, was reserved for the elite. Its place in society was thus more limited, but its purpose could not have been more dramatic. Death for the Chinese involved the handing down of family memories and could be articulated spatially with house shrines and fragile wooden temples on earthen mounds. In Egypt, death—in religious terms—was a dramatic event only for the ruler, with his (or sometimes her) spirit rising majestically over the trivialities of domesticity and family in a specially constructed, simulated house with all the accoutrements of a comfortable life. What went on in that "house," and how the spirit moved about, ate, and drank, was a matter of great concern, since it was thought to determine the flow of history in the present time and beyond. But the "house" was only half of the equation. Death in Egypt had an inside and an outside shape. Entombing the "house" at the scale of the landscape was the structure's outside shape. Eighty percent of King Djed's mastaba was nothing more than a mass of walls and spaces linking these two scales. The architect's job, in essence, was to bring the inner and outer manifestations of the ruler's death into unity.



1.41 **Bull horns at the base of Tomb 3504, Saqqara, Egypt**

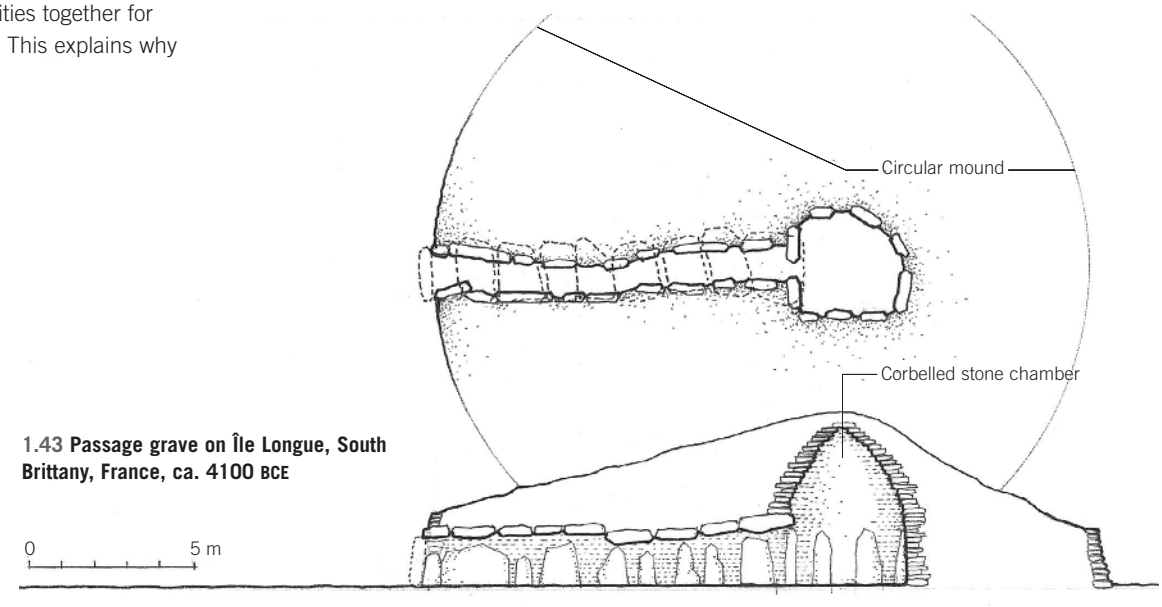


1.42 **Megalithic cultures, 4800–1200 BCE**

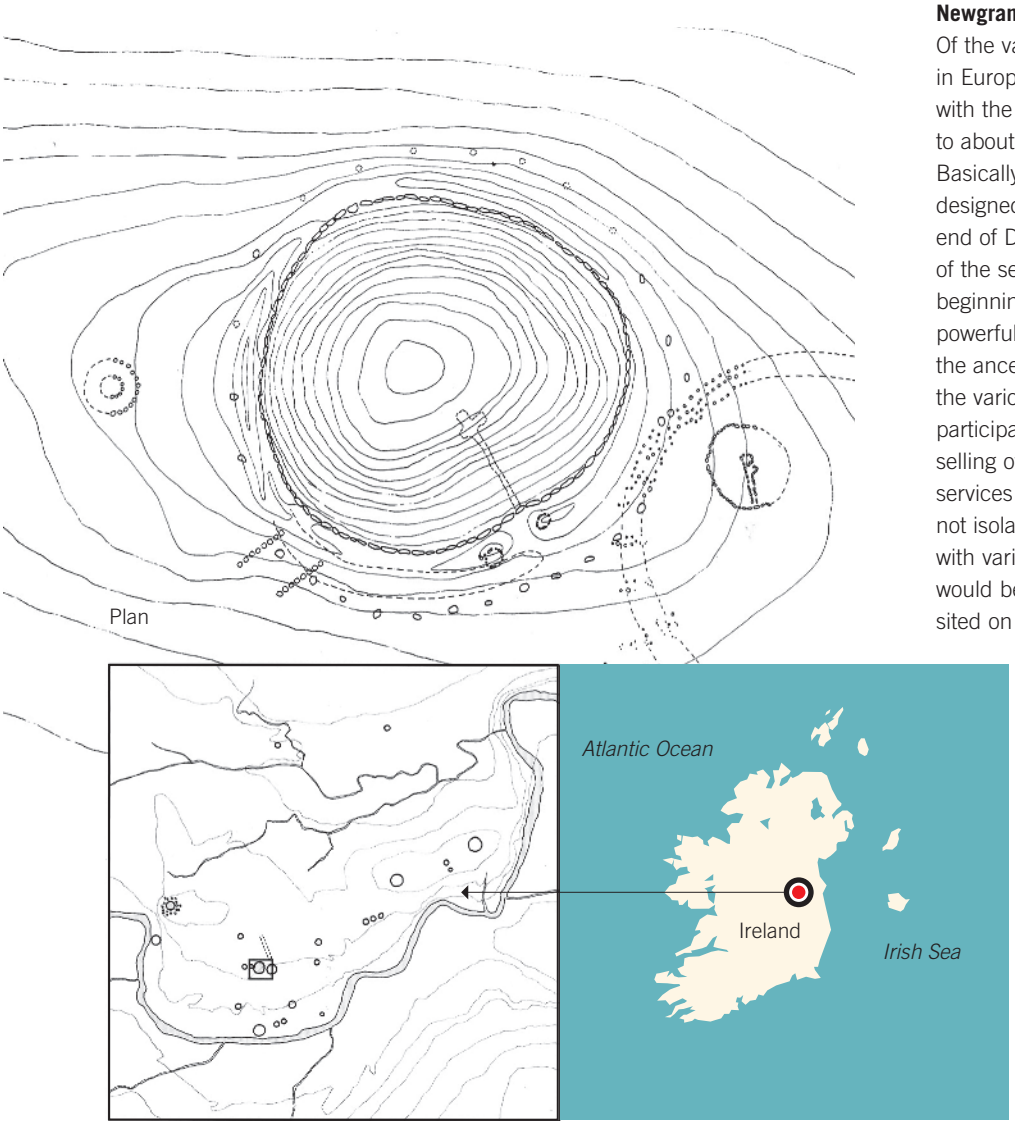
EUROPEAN DEVELOPMENTS

Europe's complex geography of shorelines, rivers, and mountain ranges made it unlikely that it would arrange itself into a single civilizational unit like those in Egypt, China, and India. Furthermore, because of the difficulties of transplanting grain northward into different climatic regions, Europe was only fully settled around 3500 BCE. Because European cultures developed without the history of agricultural domestication, their focus was not on family matriarchal histories through which such knowledge was, by necessity, handed down, but on the clans that could pull communities together for defense, war, and trade. This explains why the Europeans did not develop a temple culture or, for that matter, a more complex priestly culture until much later.

But unlike in Mesopotamia, where death was still a relatively informal affair, or in Egypt, where death-as-eternal-life was in essence reserved for the elites, the Europeans magnified death around clan lineages, building a variety of stone and mound structures in places that preserved clan memories and that served as places for ceremony, gathering, and trade. Barrow tombs or passage graves, for example, consisted of a passageway made of large stones, sometimes ornamented with carvings and paint and mounded over by tons of dirt and clay. Examples can be found throughout Europe—in Portugal, Sardinia, France, and England, and as far north as Norway—as well as in Morocco, and span the period from 5000 BCE to 2500 BCE. The Portuguese tombs are among the oldest. The ceilings of some of the central chambers were corbelled with stones placed closer and closer toward the center of the space till they meet at the top. An example of this can be found in the passage grave on Île Longue, South Brittany, France.



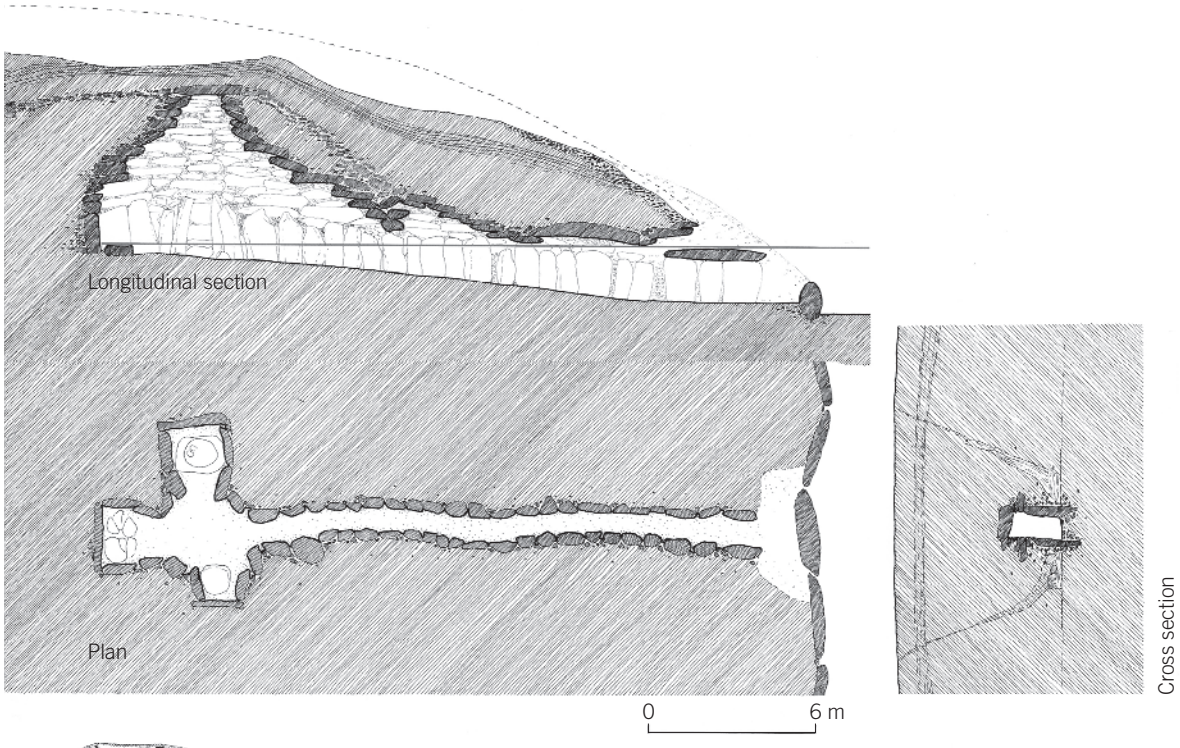
1.43 **Passage grave on Île Longue, South Brittany, France, ca. 4100 BCE**



1.44 Newgrange, Ireland
Source: Timothy Cooke, Geraldine Stout, and Matthew Stout, *Newgrange* (Cork: Cork University Press, 2008), 46.

Newgrange

Of the various constructions that were made in Europe at the time, few could compete with the great mound of Newgrange, dating to about 4000 BCE. But this was no tomb. Basically it was a clock with one tick, designed to mark the winter solstice at the end of December, indicating the passage of the season and the promise of a new beginning, while also serving as a particularly powerful moment to access the spirit of the ancestors. Thousands of people from the various clans congregated at the site to participate in dances, revelry, the buying and selling of cattle, and, above all, memorial services for the deceased. The structure was not isolated but set in a sacred landscape with various mounds in the vicinity, and would be used for centuries to come. It was sited on the western slope of the river Boyne.



Detail of Entrance Stone

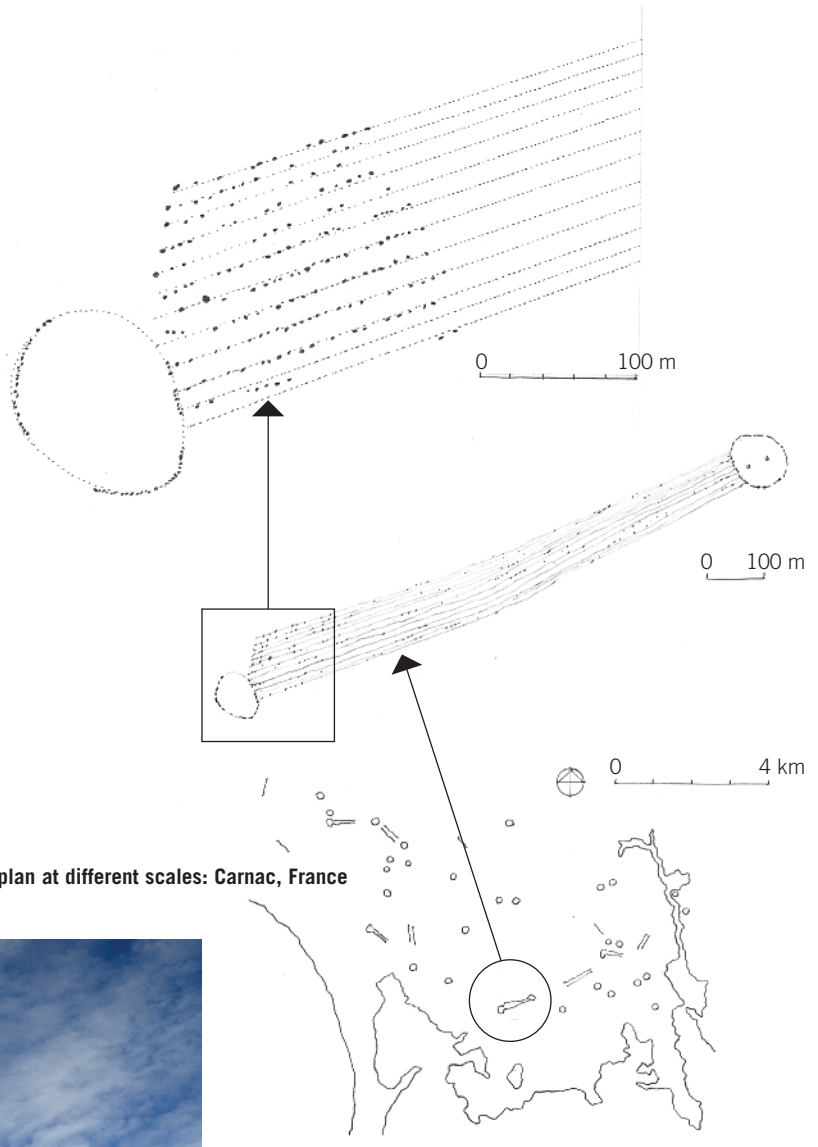
1.45 Newgrange, Ireland

Source: Timothy Cooke, Geraldine Stout, and Matthew Stout, *Newgrange* (Cork: Cork University Press, 2008), 46.

The large mound is approximately 80 meters in diameter and is surrounded at its base by a kerb of 97 stones. The most impressive of these stones is the highly decorated Entrance Stone. The mound's entrance leads to a 19-meter-long passage constructed of large stones leading to a small, cross-shaped chamber. A corbelled roof covers the chamber. The massive stone structure was mounded over with tons of clay. The side of the mound near the entrance was covered with white quartz stones. It seems that people brought the stones from quartz veins in the hills some 160 kilometers to the south and threw the stones onto the mound as a ritual act. Sadly, the modern reconstruction placed the stones along a concrete wall, thus giving a false impression of a wall. At dawn on the winter solstice, a shaft of sunlight enters the inner chamber through a concealed opening in the roof of the entrance corridor. It is a remarkable piece of engineering that served as a powerful symbol of the inevitable victory of life over death, perhaps promising new life to the spirits of the dead.

Carnac

Carnac, named after a nearby French village, consists of a set of various alignments of more than 3,000 standing stones. What prompted people to drag multi-ton stones from miles away to this site? Did it have celestial purposes? Quite likely, but no one knows for sure. It could also be that clans brought their stones as a type of spiritual labor in memory of ancestors. At any rate, the site consists of different alignments, including the Ménec alignments (eleven converging rows of stones stretching for 1,165 by 100 meters), the Kerlescan alignments (a smaller group of 555 stones, further to the east), and the Petit-Ménec alignments (a much smaller group, further east again of Kerlescan). There are also several dolmens scattered around the area. A dolmen is a tomb monument composed of a set of vertical stones surmounted with a horizontally placed stone. Dolmens are generally considered to have been tombs; however, the acidic soil of Brittany has eroded away the bones. Some dolmens were buried under a mound of earth, but others were left without a mound. The Crucuno Dolmen is crowned by a massive, multi-ton capstone.



1.46 Site plan at different scales: Carnac, France

1.47 Stone alignment, Carnac, France

1.48 Crucuno Dolmen, Carnac, France