

ALBERT RECKITT ARCHAEOLOGICAL LECTURE

The Origins of the Civilisation of Angkor

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Portuguese encounter Angkor

UNDERSTANDING THE ORIGINS of the civilisation of Angkor has challenged western scholars for over four centuries. The expansion of European states east and west in the fifteenth and sixteenth centuries led to many remarkable accounts of exotic civilisations. In Mexico, Bernal Diaz de Castillo could describe in detail, the Aztec capital of Tenochtitlan (Diaz de Castillo 1967). To the east, however, Portuguese missionaries reached Cambodia just over a century too late to witness Angkor as a living capital (Groslier 1958). In 1585, when Antonio da Magdalena, a Capuchin friar, encountered Angkor, the forest had already invaded the ruins. Nevertheless, the account of his visit reflects the awe inspired by its size and splendour. Diogo da Couto, archivist of the Portuguese East, wrote:

This city is square, with four principal gates, and a fifth which serves the royal palace. The city is surrounded by a moat, crossed by five bridges. These have on each side a cordon held by giants. Their ears are all pierced and are very long. The stone blocks of the bridges are of astonishing size. The stones of the walls are of an extraordinary size and so jointed together that they look as if they are made of just one stone. The gates of each entrance are magnificently sculpted, so perfect, so delicate that Antonio da Magdalena, who was in this city, said that they looked as if they were made from one stone the source of which is, amazingly, over 20 leagues away. So you can judge the labour and organisation dedicated to construction. There are written lines which record that this city, these temples, and other things were built by the order of 20 kings over a period

Read at the Academy 21 May 2002.

Proceedings of the British Academy, 121, 41–89. © The British Academy 2003.

of 700 years. On the sides of this city are monuments which must be royal palaces on account of their sumptuous decoration and grandeur. In the middle of the city is an extraordinary temple. From each of the gates, there is a causeway of the same width as the bridges, flanked by canals, fed by the great moat round the city. The water originates from the north and east, and leaves from the south and west. The system is fed by the river diverted there. Half a league from this city is a temple called Angar. It is of such extraordinary construction that it is not possible to describe it with a pen, particularly since it is like no other building in the world. It has towers and decoration and all the refinements which the human genius can conceive of. There are many smaller towers of similar style, in the same stone, which are gilded. The temple is surrounded by a moat, and access is by a single bridge, protected by two stone tigers so grand and fearsome as to strike terror into the visitor. (Groslier 1958, translated from French by the author).

The question of origins was posed by virtually all these early visitors. In the words of Marcello de Ribadeneyra in the first account of Angkor in a Western language, published in 1601:

We suppose that the founders of the kingdom of Siam came from the great city which is situated in the middle of a desert in the kingdom of Cambodia. There are the ruins of an ancient city there which some say was built by Alexander the Great or the Romans, it is amazing that no one lives there now, it is inhabited by ferocious animals, and the local people say it was built by foreigners (Ribadeneyra 1601, translated from the French version of Groslier 1958 by the author).

Three years later, Gabriel de San Antonio described inscriptions which no one could read, and stone houses, courts, rooms and elevations which appeared to be Roman. Neither he nor his contemporaries could conceive of the possibility that these monuments were built by Cambodians. Instead, they turned to the classical literature, citing Alexander the Great, or the Emperor Trajan, as being responsible (San Antonio 1604).

What is Angkor?

What is Angkor? The visitor today encounters numerous temples raised on tiers of laterite or sandstone, the remains of reservoirs one of which, eight kilometres long, still retains a large body of water. There is a city in the heart of the complex, with high walls and ceremonial gateways. Viewed from the air, Angkor virtually fills the gently sloping terrain that lies between the Kulen Uplands to the north, and the Great Lake of Cambodia to the south (Fig. 1). This location presents several unique

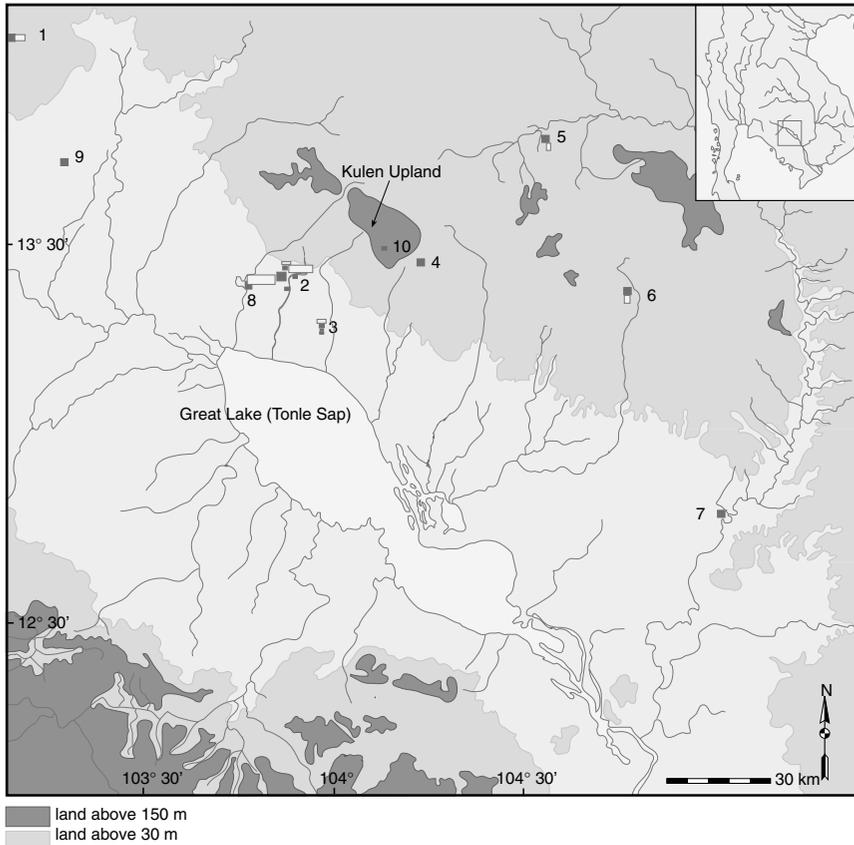


Figure 1. The distribution of the principal sites in Central Cambodia. 1. Banteay Chmar; 2. Angkor; 3. Hariharalaya (Roluos group); 4. Beng Mealea; 5. Koh Ker; 6. Preah Khan of Kompong Svay; 7. Ishanapura; 8. Banteay Choeu; 9. Phum Snay; 10. Rong Chen.

advantages. The Kulen uplands receive sufficient rainfall to feed perennial rivers, that flow south to the Great Lake. This has attracted permanent settlement from prehistoric times in an area subject to a monsoon climate, bringing a superabundance of rain for six months of the year, and hardly any for the remainder. The Great Lake itself acts as a safety valve for the Mekong River when in spate. Uniquely, the river that links the lake with the Mekong reverses its direction of flow seasonally, filling the lake to capacity during the wet season, only to lower it when floodwaters recede. The extensive potential land for growing rice, and the abundance of fish, attracted a king known as Jayavarman II. According to the Sdok Kak

Thom inscription of 1052, he came to this region with his followers and, in AD 802, had himself proclaimed *cakravartin*. This Indian term denotes a universal monarch, or ruler of the world (Cœdès and Dupont 1943–6).

Jayavarman founded a dynasty that lasted for two centuries, and there are some tantalising traces of his foundations (Higham 2001). At Banteay Choeu, there is a rectangular enceinte once thought to be either an early city but more recently, seen as an unfinished reservoir. On the Kulen upland, there is the raised temple of Rong Chen, and at Hariharalaya south-east of Angkor and near the wet season bank of the Great Lake, there are possible temple foundations (Fig. 2). Progressively, Angkor grew as successive rulers added their own temples and palaces. Indravarman I (AD 877–89) at Hariharalaya declared in AD 879 that five days hence, he would start digging. True to his promise, he diverted the Roluos River to fill Indratataka, a reservoir of unprecedented size. Almost four kilometres long and 800 metres wide, it was he declared, like the ocean to mirror his glory. The water from the *baray* was reticulated south to feed the moats round a series of temples that included his chapel royal, the Preah Ko, and the massive Bakong. Built of cyclopean blocks of

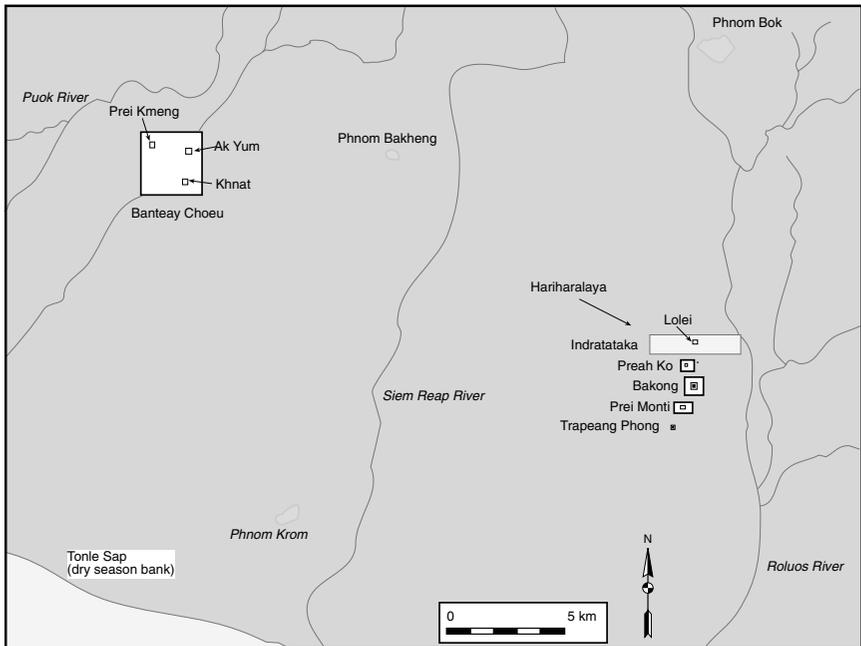


Figure 2. The location of Banteay Choeu, Ak Yum, and Hariharalaya at Angkor.

sandstone the latter stood on top of five terraces embellished with the statues of elephants.

Indravarman's inscriptions at his splendid new capital provide the underlying reason for these temples. The Preah Ko comprises six brick shrines, each formerly covered in painted stucco. The front three were dedicated to his male royal ancestors, those of the back row to their respective consorts. The names of his father, maternal grandfather and Jayavarman II were linked with that of Shiva, thus projecting the image of deified forebears. Worshipping the ancestors called upon numerous donations drawn from the villages that sustained the royal centre. We read of thousands of men and women being required to provide goods and services to the foundation, of cattle, elephants and horses, dancers, singers and musicians. The temple owned vessels of gold and silver, mirrors, perfumes, fly whisks, and clothing for the gods and functionaries. This relationship between the centre and the communities ascribed to its maintenance involved the absorption of surpluses to worship royal ancestors, a theme repeated and magnified during the ensuing centuries.

Hariharalaya today presents the clear reflection of an early Angkorian royal centre, for Indravarman's son and successor virtually abandoned it when he chose for his new foundation, a low hill known as the Bakheng, eighteen kilometres to the north-west. Yashovarman I, whose accession in AD 889 was typically accompanied by the need to defeat rival claimants to the throne, completed the Indratataka reservoir by building an island temple dedicated to his father. His crowning achievement, however, was the foundation of the new Angkor. In accordance with precedent, he gave his own name to his capital: Yashodharapura (Fig. 3).

His new temple on the summit of the Bakheng hill incorporates six tiers, surmounted by five shrines built to mirror Mount Meru, home of the Hindu gods. It absorbed about eight and a half million cubic metres of sandstone and four and a half million bricks. He had the massive Eastern Baray constructed, and on completion it covered twice the area of his father's Indratataka. Other hills round his capital were embellished with temples, and he ordered the construction of retreats for ascetics. The distribution of his inscriptions indicates control over the Mekong Valley from the delta to Wat Phu in Laos, and across the broad agriculturally rich lands from the Great Lake west into Battambang. His inscriptions not only describe the appropriation of surpluses for his building ambitions, but also the grades of officials who served his court. We read of *praman*, or provinces, military leaders, and priests, but the edifice Yashovarman created ultimately depended on the control of labour.

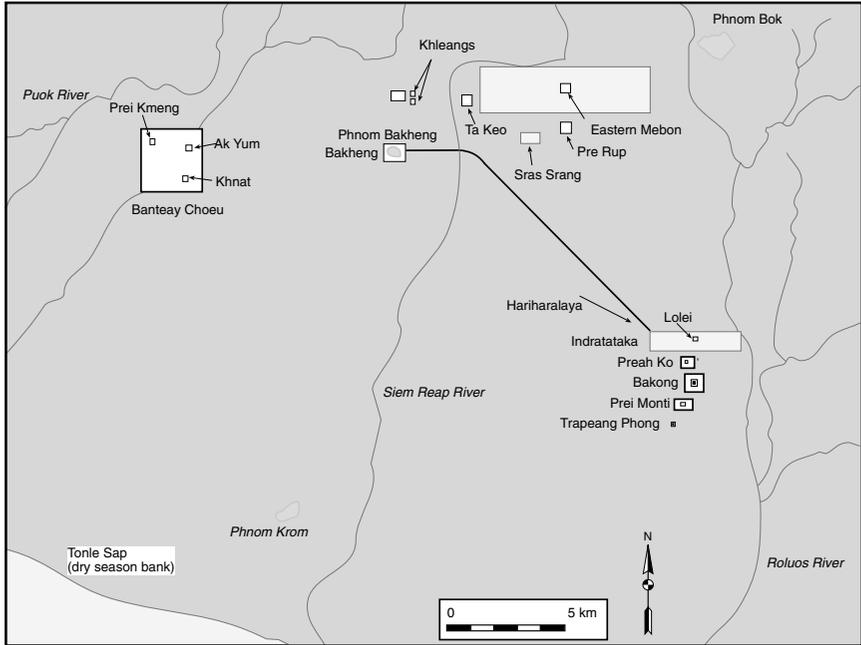


Figure 3. Angkor during the reigns of kings Yashovarman I and Rajendravarman.

In AD 921, King Jayavarman IV moved the court to his new foundation at Koh Ker, north-east of Angkor, and due to its brief life, we can again see encapsulated in stone the principal features of a royal centre. There was a massive temple housing a *linga*, a stone phallus bearing the name of the king linked to that of a god. There were many subsidiary temples, and a reservoir on this occasion partially hewn from the living rock. His brother Rajendravarman returned to Yashodharapura and chose as his capital, the area south of the Eastern Baray. Two of his temples survive, Pre Rup and the Eastern Mebon. The latter was constructed on an island in the centre of the *baray*. Both housed a central shrine for a state *linga* bearing the king's name, as well as subsidiary shrines to honour his ancestors. Beyond the capital and deep in the Cambodian countryside, the texts dating to this reign record how the regional lords had their own temples built, as well as reservoirs and canals in the service of the local people. Many of these are listed by name, along with their duties to the overlord. It was not unusual for such people to work in the lord's rice fields for half a month, and in their own for the balance.

Rajendravarman was succeeded by his 10-year-old son Jayavarman V in AD 968. Jayavarman was the last major king of the first Angkorian dynasty. He added his own temple mausoleum to the growing number of monuments at Yashodharapura, and named it Hemasrinagari, 'The mountain with the golden summits'. A representation of Mount Meru, this monument suffered a lightning strike so inauspicious that it was never completed. By the end of the tenth century, the court had grown to include many levels of officials, charged with administering the law, the system of taxation, and most importantly, the registration of land and its demarcation through the placement of boundary markers.

The palimpsest of buildings that was Angkor in the year 1000 was to become yet more complex with the new dynasty established by King Suryavarman I and his successor Udayadityavarman II (Fig. 4). The former laid down the massive Western Baray, which covers an area of 17.6 square kilometres. The latter was responsible for the island temple in the middle of the reservoir and the Baphuon, one of the largest temple mausolea at Angkor. A contemporary inscription informs us that it was

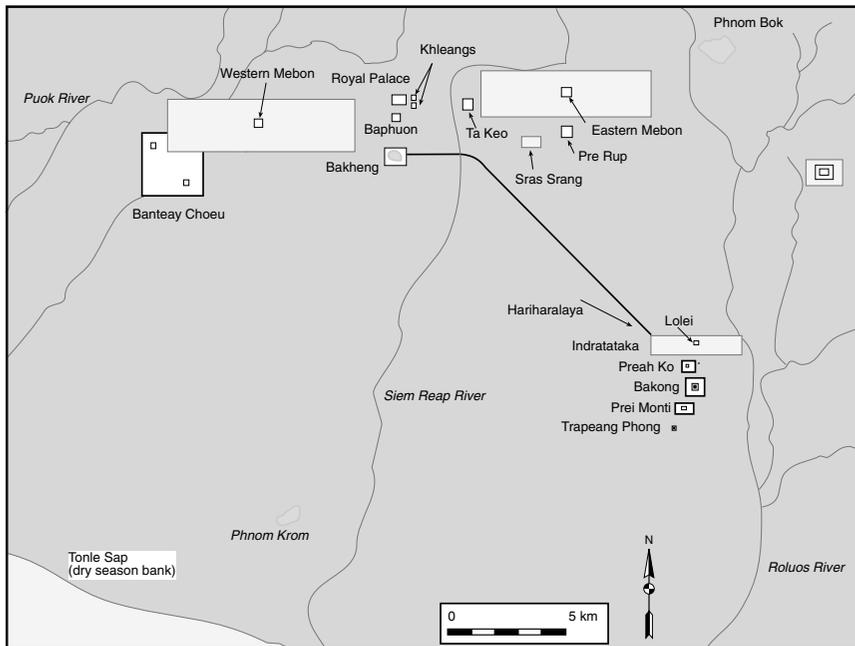


Figure 4. Angkor during the reigns of kings Suryavarman I and Udayadityavarman II.

built as a replica of Mount Meru, home of the gods, graced with a golden temple on its summit which has not survived.

In 1080, Jayavarman VI of the Mahidharapura lineage seized power. He hailed from the upper Mun River valley in north-east Thailand, an area that will figure prominently below, and two of his successors were responsible for the final additions to bring Angkor to its present form. Suryavarman II was anointed king in 1113, and was responsible for Angkor Wat, arguably the largest and certainly one of the most impressive religious monuments known (Fig. 5). The bas reliefs of this monument reveal the king in his throne room, our first image of an Angkorian king in state. We can also see him with his court in a progress, and scenes derived from Hindu epics, such as the Churning of the Ocean of Milk to obtain the elixir of immortality, and the Battles of Lanka and Kurukshetra. A four-metre-high statue of the god Vishnu, now located in an outer building, may once have dominated the central lotus tower,

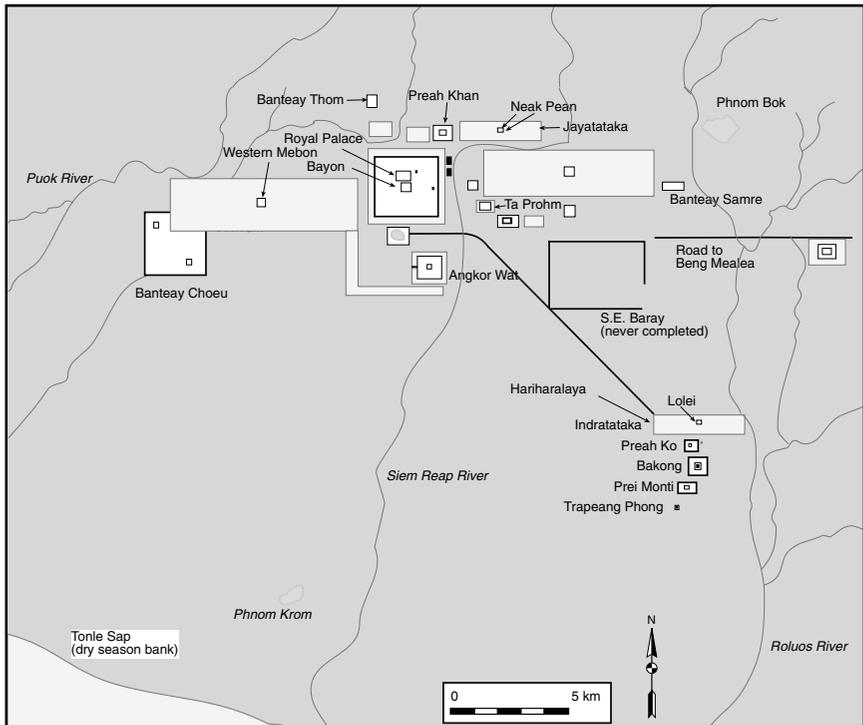


Figure 5. Angkor during the reign of the dynasty of Mahidharapura.

under which a vault 27 metres deep penetrates the earth below. Hundreds of heavenly maidens carved in stone are on hand to welcome the king to heaven, for this is his temple mausoleum, where the ashes of Paramavishnuloka, the posthumous name of the king, would have opened the eyes of the statue of Vishnu when placed within the central shrine. Indeed, the name means 'He who has entered the heavenly world of Vishnu'.

Jayavarman VII came to the throne in 1181, and it was during his reign that Angkor took on its final form. He probably moved and shaped more stone in his building programmes than all his predecessors combined. His enduring foundation was the walled and moated city of Angkor Thom, encountered four centuries later by the Portuguese (Fig. 5). Its walls enclose an area of nine square kilometres, and the king's temple mausoleum, known as the Bayon, lies in the centre. Jayavarman was a Mahayana Buddhist, and the gigantic heads that cap the entrance gateways and the Bayon temple probably represent him as a bodhisattva. He also had the Northern Baray constructed, with its island temple of Neak Pean built to represent the sacred Indian lake Anavatapta. Here, it was said, pilgrims could wash away the slime of their sins. The massive temples of Preah Khan and Ta Prohm were dedicated respectively to Jayavarman's father and mother and his sons' elegant Sanskrit foundation inscriptions record the enormous effort required to sustain them. A total of 79,365 men and women were ascribed to supply Ta Prohm with rice, honey, millet and milk, clothing and mosquito nets, and 165,744 wax torches.

Beyond the capital, the king had roads, rest houses, hospitals, and other temples built, among the most impressive being the complex of Banteay Chmar, honouring the crown prince. This temple, and the Bayon, incorporate bas reliefs that illustrate life at Angkor in minute detail. We can, for example, see the king in battle against the Chams, aristocratic feasting, the interior of a Chinese merchant's house, fishing expeditions on the Great Lake, the market place, even a woman in childbirth. The impression of a large and varied urban populace gained from these reliefs is confirmed by a remarkable eye-witness account. Zhou Daguan was a Chinese diplomat who, in August 1296, travelled up the Mekong River, crossed the Great Lake and entered the city through its southern gateway (Zhou Daguan 1993). He spent almost a year there, and on his return to China, wrote of his experiences. Where we now see rough sandstone, he saw golden finish. The wooden palaces with their tiled roofs, and the thatched houses of the populace, have long since disappeared. His most

compelling image is of a large and vibrant population within the city walls. He talks of two thousand women with duties within the royal palace, but whose homes were scattered across the city. There were officials whose rank was displayed by their insignia of office and the number of their attendants. He speaks of families who would own a hundred slaves, 'wild men from the hills'. Scribes wrote their records on deer skin, and disputes had recourse to a legal system, involving trial by ordeal. There was a daily market in which women played a prominent part. Zhou Dagan reserved a lengthy section of his report to describe a royal procession, involving hundreds of attendants and guards surrounding Indravarman III, who stood aloft on his elephant holding the sacred sword of state. All who saw the king were required to kneel and touch the ground with their foreheads.

Many landmarks described by Zhou Dagan can easily be recognised: the temple mausolea of ancestral kings, the huge reservoirs and their island temples, and the giants and gods who flanked the causeway over the city moats. But for all its vitality and importance, this account is a snapshot of a city and a state on the wane. Perhaps exhausted by Jayavarman's grandiose ambitions, few further buildings were constructed between his death and the abandonment of Angkor in the mid fifteenth century AD.

Angkor has often been described as the capital of an empire, and an appreciation of the state of which it formed the centre can only be properly understood in the context of its political reach. The distribution of inscriptions that record particular kings is possibly the best approach to identifying the extent of their influence. Those of the first dynasty concentrate north of the Great Lake and in the Mekong Valley up to its strategic junction of the Mun River (Fig. 6). Those for the Dynasty of the Suryavarman I in the eleventh century reveal an expansion up the Mun River and into central Thailand, a pattern that seems to have gathered pace with the accession of the dynasty of Mahidharapura from its home base in the upper Mun Valley (Figs. 7–8). The weight of evidence makes it clear, that the areas more remote from the centre of Angkor had their own aristocratic families who had for generations exercised local authority, a situation that induced a degree of instability not unusual among pre-industrial states. The inscriptions also disclose that Angkor was never the capital of an extensive empire, but concentrated in the flat riverine and lacustrine lowlands of Cambodia and the Mun Valley. Here, adaptation to the monsoon regime entailed the control of water to produce a rice surplus. Wealth and influence were, to judge from the inscriptions,

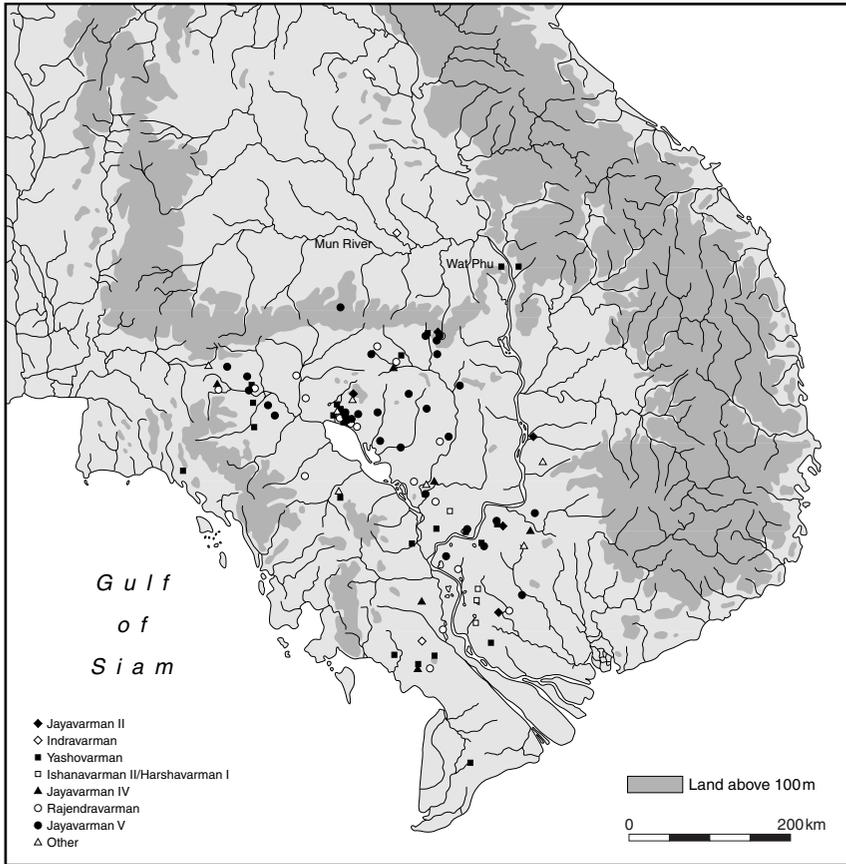


Figure 6. The distribution of the inscriptions dating to the dynasty of Jayavarman II.

related to the ownership of land. The worship of exalted ancestors within the context of Hinduism and Buddhism also placed demands on the production of surpluses, much of which were taken by the ruling elite through the medium of a network of state temple foundations and large corps of officials.

Deep tap roots

This kingdom of Angkor had deep tap roots. Jayavarman II's consecration as *cakravartin* in AD 802 was a response to endemic conflicts between

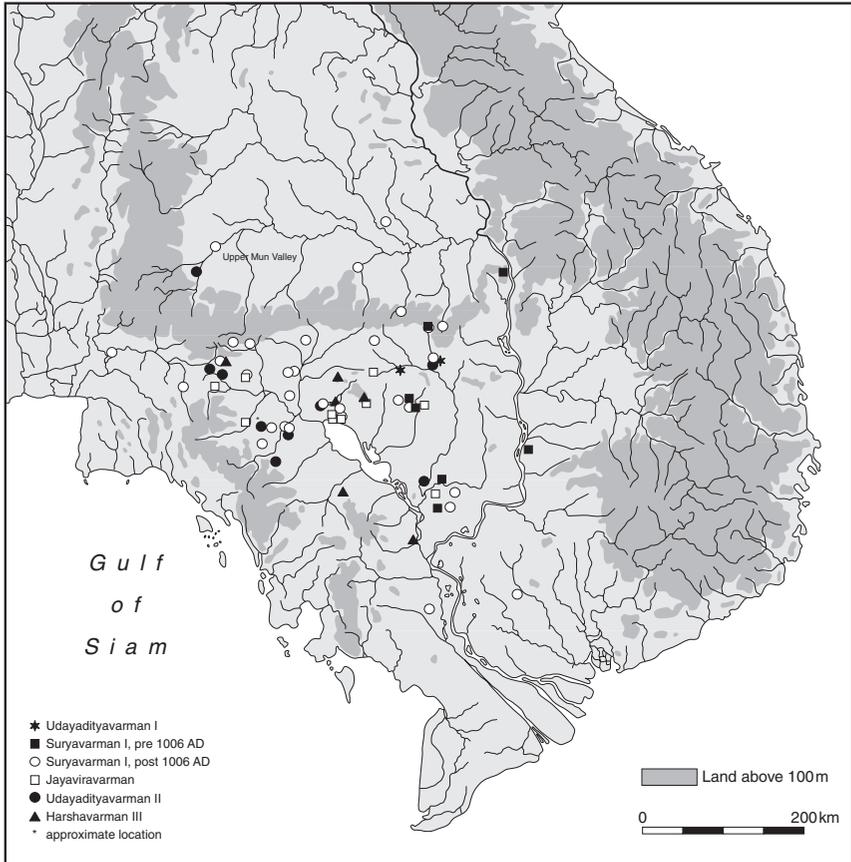


Figure 7. The distribution of the inscriptions dating to the dynasty of the Sun Kings.

the leaders of numerous petty kingdoms during the preceding centuries. Tracing the origins of Angkor will necessarily take us back through this early period, when historic records still reflect a dim light, and beyond to the silent world of prehistory.

Again, we are indebted to an eyewitness account, that was discovered in the Chinese dynastic archives (Pelliot 1903). In the mid third century AD, the Wu Emperor of southern China dispatched emissaries south, probably to seek out trading opportunities. Their leaders, Kang Tai and Zhu Ying, filed a report that probably refers to the inhabitants of the Mekong Delta. They encountered a king, and reports of preceding dynastic rule. There was a palace and a walled city. The king levied taxes on

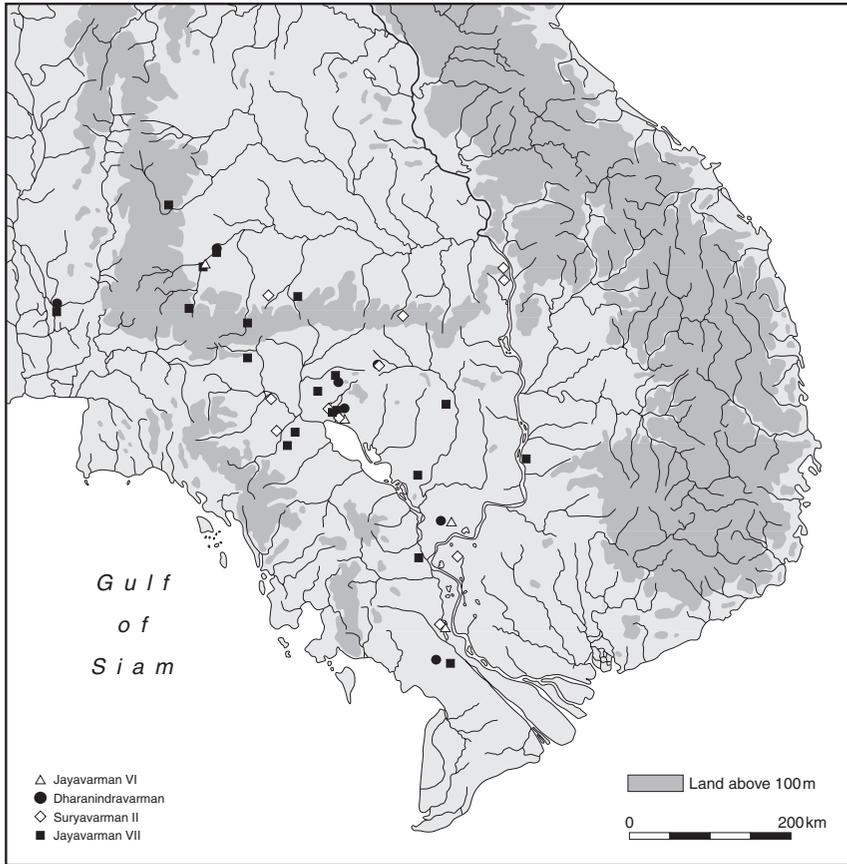


Figure 8. The distribution of the inscriptions dating to the dynasty of Mahidharapura.

luxury goods, and there was a system of writing that originated in India, and a legal system based on trial by ordeal. A capital city was located inland, a distance of 500 *li* from the shore. They called this polity Funan, and the name recurs in the Chinese records as one of the states that sent tribute missions with gifts of gold, silver, kingfisher feathers, exotic animals, ivory, and turtle shells. Kingfisher feather wall hangings seeded with pearls are described in the *Chuci*, the Songs of the South, as one of the luxuries of the Chinese state of Chu six centuries earlier (Cook and Major 1999).

Archaeological verification of this report began with aerial photographs of the Mekong Delta taken in the 1920s that revealed canals radiating out

from moated cities. It gathered pace in 1944, when Louis Malleret opened excavations at the port city of Oc Eo and continues today with further excavations at Oc Eo and at the inland city of Angkor Borei (Malleret 1959–63; Manguin and Vo Si Khai 2000). These excavations have demonstrated that the Mekong Delta was a strategic location in a growing maritime trade network that incorporated China and India. Roman and Persian coinage and Chinese mirrors reveal its extent, but seals inscribed in the Indian Brahmi script, brick temples, Buddhist sacred texts on gold foil, stone images of Hindu deities, even wooden statues of the Buddha dredged from the Delta mud, evidence a strong infusion of Indian ideas. Oc Eo was linked with Angkor Borei by a ninety-kilometre-long canal. The walls and moat of the latter city enclose 300 hectares, an area dotted with water tanks and brick temple foundations. Local historic records begin with a small corpus of Sanskrit inscriptions dating from the end of the fifth century AD. These reveal that the local rulers had adopted Sanskrit names, such as Jayavarman, and were founding temples dedicated to Vishnu. A Queen Kulaprabhavati described a victory won over his rivals by King Jayavarman.

Funan was heavily involved in maritime trade, but it also controlled access to the interior by the Mekong River. Further archaeological research 550 kilometres up stream has revealed that early state formation was not the prerogative of the Delta. At Wat Phu, near the confluence of the Mekong and Mun Rivers, an inscription dating to the second half of the fifth century describes how a king Devanika, meaning celestial protection, ruled there as king of kings. Again, archaeological research has identified the remains of an early city (Cucarzi and Zolse 1994).

Although the changing pattern of maritime trade routes from the mid sixth century impoverished Funan and the Delta communities, interior polities such as that founded by King Devanika continued to flourish on the basis of an agrarian economy. A third Chinese commentary, this time compiled in the thirteenth century by Ma Duanlin on the basis of available documents, incorporates a description dating to the early seventh century AD, of a Cambodian royal court. It was probably the seat of King Ishanavarman, who ruled from Ishanapura north-east of the Great Lake. The account describes a royal audience in a sumptuous throne room embellished with inlaid wood and finely woven fabric. The sovereign wore a golden crown, and his ministers and courtiers touched the ground three times with their heads in his presence. The king's court included five great ministers, and a host of lesser officials and guards. This site incorporates

impressive single-chambered brick temples dedicated to Hindu gods, and water basins contained within brick enclosing walls. Available inscriptions, now including both Sanskrit and old Khmer texts, describe Ishanavarman's royal line and the reach of his administration. His unified state of Chenla as described in the Chinese records was obviously a misreading of the actual situation. We know of other rulers, including a line of queens on the Mekong River in the region of Stung Treng, and a state of Canasapura in the upper Mun Valley ruled by a dynasty of at least five kings with Sanskrit names. Indeed, it was from such a fragmented social scene that Jayavarman II emerged to claim the title of king of kings, *cakravartin*.

The key issue

We now come to the key issue. From at least AD 250, it is possible to identify developing states ruled by kings who built temples to Hindu gods. In due course, their inscriptions were written in an Indian script and employed the Sanskrit language. Their temples were built in brick, a medium used for centuries in India. Early delta communities carved wooden statues of the Buddha, and some elite burials contained Buddhist texts. Was, then, the origin of Angkor to be found in these early kingdoms, which Georges Cœdès, named 'The Indianised States of Southeast Asia'? Again, were those allegedly Indianised states the result of Indian immigration and inspiration with little or no contribution from the indigenous inhabitants? Readers of Alfred Foucher were informed that 'Numerous (Indian) emigrants . . . encountered only savage populations of naked men. They implanted in these rich deltas or favoured islands nothing less than their civilization, or at least a copy: their customs and their laws, their alphabet and their scholarly language, and their entire social and religious establishment' (Foucher 1922). Sedov was only slightly more complimentary about the indigenous people of South-East Asia when he wrote 'Indian immigrants, colonists and traders brought with them their own ideas of government, customs and fashions, and religious symbolism. They acquainted the aborigines with various new techniques, including methods of land reclamation, with handicrafts and the art of war' (Sedov 1978). For Cœdès, the doyen of Angkorian studies until the 1960s, the process of Indianisation involved: 'a steady flow (of immigrants) that resulted in the founding of Indian kingdoms practising the arts, customs and religions of India and using Sanskrit as their sacred

language' (Cœdès 1968). As for the indigenous inhabitants, while not as caustic as Foucher or Sedov, Cœdès nevertheless noted that 'the people of Farther India were still in the midst of late Neolithic civilization when the Brahmano-Buddhist culture of India came into contact with them' (Cœdès 1968).

Returning to these early pronouncements is historically interesting, but is in danger of flogging a dead horse, for they were written before a recent swing of the pendulum towards a greater emphasis on the role of the local inhabitants. This has taken several forms. For Solheim (1967), South-East Asian navigators were sailing to virtually every point of the compass even by the second millennium BC. Those who went west, returned with exotic ideas learned during their visits to India. This contrasts with Wheatley's conviction that the trade in goods and ideas into South-East Asia was essentially inspired and operated from India (Wheatley 1983). The possibility that there was a wholesale movement of Indian culture, whether it be actual Indians or influence from a particular part of India, however, has foundered for lack of evidence. Nowhere in the area of the future Angkorian kingdom, nor with one exception in other coastal states of South-East Asia, is there a convincing assemblage of material culture, including works of art or literature, that could reasonably represent the presence of an Indian community. The exception is a Tamil inscription from Takuapa in peninsular Thailand, which records the construction of a reservoir by an association of Indian merchants, and the presence of Indian guards (Bronson 1996). Yet its uniqueness only strengthens the conclusion that the local people were well able to select and adapt exotic traits to their own ends. Virtually all historians working in this area have offered their own ideas on the origins of states, but none has been able to give appropriate consideration to the vital prehistoric period, because there has been insufficient evidence to do so (Christie 1970, 1979; Mabbett 1977).

New light on Chenla

A recent study of the relevant documents, however, has achieved much in redressing the emphasis on Indianisation, and at the same time, has stressed the need to document late prehistoric societies (Vickery 1998). From AD 611, some Chenla inscriptions included passages in old Khmer under the Sanskrit text. Cœdès largely ignored these in his translations of the corpus as a whole (Cœdès 1966). Yet as Michael Vickery has shown,

the Khmer texts are a vital source of information on the pre-Angkorian society of Cambodia (Vickery 1998). He has, for example, stressed the importance of the indigenous title *pon* to signify a highly ranked male. The *pon* assumed political and ritual leadership in local affairs, and the title was inherited through the holder's sister to his nephew. One of the recurrent features of the *pon*'s duties, was the provision and control of ponds and swamps, highly important resources in a land beset by a long dry season. The *pon* also played a central role in the organisation and deployment of rice surpluses, and the control of labour through the aegis of his local ancestral temple.

The Khmer texts also inform us on the social role of women, and the various duties that the rural populace performed in the service of their temple. Women played central roles in rituals. Some bore the title *tan*, others were named in conjunction with a title indicating high status. At Sambhupura, we read of a hereditary line of queens. The last known ruler in the line of Ishanavarman was Queen Jayadevi. The range of specialised occupations listed in the inscriptions also illuminates the nature of rural society. There were iron workers, moulders of statues, leaf sewers, spinners, and weavers. Cloth was a major product of this pre-Angkorian period and continued to be so throughout the Angkorian kingdom. It was used as a measure of wealth and medium of exchange. The range of items in the ownership of the temples likewise gives an indication of specialisations: gold, bronze, and ceramics.

The temples which dominated the social and physical landscape were not exclusively devoted to exotic Hindu gods. The ancestral and local deities, often female, were called *kpon*. There are also references to indigenous gods under the Khmer title of *vrah kamraten an*. Highly ranked descent from the ancestors and close identity with the gods involved *pon* in ritual and cult duties to which all members of the community adhered. The textual records indicate that *pon* were in a position to donate communal land to the temple. They also assigned their juniors to provide surplus agricultural and craft products. But since it was they who founded and maintained the temple, this meant that they also deployed surplus production. For the elite, this system involved the accumulation of wealth in the form of rice, cloth, and land. For the majority of society, who lacked the status to acquire Sanskrit names, it involved producing a surplus for the benefit of the temple and ancestral gods, and an ideological dividend in making merit. This elevation of an elite segment of society into a permanent position of economic and ideological management is an essential building block in the foundation of states.

The prehistoric period

Appreciating the importance of indigenous language and culture in the Chenla period serves to emphasise the need to illuminate and better understand the prehistoric communities of the Mekong Valley. To what extent did they contribute to the genesis of Angkor? A decade ago, Dr Rachanie Thosarat and the author instituted a research programme to respond to this challenge. It began by concentrating fieldwork in the upper Mun Valley of north-east Thailand, home of Angkor's dynasty of Mahidharapura, and as political conditions have improved, it has also undertaken field research at Angkor and in north-west Cambodia.

The programme acknowledges that early states can form extremely rapidly, even in the space of a single lifetime, and that it is essential to document the societies as they developed prior to the transition that took place during the first half of the first millennium AD. This premise receives support from many historically recorded instances of state formation. In a recent survey, Flannery (1999) cited five cases in which an individual leader stimulated the development of a state through innovations, often in warfare. However, each of these, ranging from the Zulu leader Shaka to Kamehameha in Hawaii and Andrianimpoinimerina in Malagasy, is best understood in the context of the long term development of their particular culture. Let us review some of the key variables identified by Flannery in the formation of a state. First, the transition requires a certain level of prior cultural complexity, and this is usually described as a chiefdom. Chiefdoms exhibit a number of key features: their social structure is hierarchical, and the ownership and distribution of resources are restricted on the basis of heredity. Carneiro (1992) has isolated conflict as a key variable in their formation, with the most powerful and successful chief in war being able to secure labour from the defeated, expand his territory and place his preferred followers, often his kinsmen, in places of authority over subjugated rivals. Following this theme, Flannery has suggested that the formation of states involves the further expansion of territory, increase in population, and innovations in food production such as water control measures. It is facilitated when the emerging leader develops a new ideology to solidify his new status, such as having himself proclaimed *cakravartin* in the context of an esoteric ritual.

There would be no room for naked savages, nor simple Neolithic farmers, in any model purporting to explain the origins of Angkor in which the indigenous inhabitants of the Mekong Valley played a signifi-

cant part. The problem with the explanations of historians, is that they trace origins back to the start of the historic period, and then offer only the most cursory appreciation of its antecedents. To what extent, however, has recent archaeological research provided the information required for a new appraisal of this question? What evidence is there in the area of the Angkorian kingdom, for prehistoric social inequality, warfare, agricultural intensification, and control over the production and exchange in valued products or commodities? To what extent can the ancestors of the *pon*, the high-status women, the iron workers and moulders of statues, the specialised weavers and potters be identified in the prehistoric record?

In 1950, Peter Williams-Hunt published a paper which drew attention to what he called 'irregular earthworks in Eastern Siam'. Viewed from the air, these comprise a roughly oval or circular mound surrounded by what look like multiple banks and moats (Williams-Hunt 1950). While this was the first English publication of a major group of sites, the Thai authorities were already well aware of them. Prince Damrong reported on one early in the twentieth century with the name Non Muang Kao, 'Mound of the Ancient City' (Fig. 9). Since the publication of Williams-Hunt, these sites have been enigmatic. They are thick on the ground, particularly in the valley of the Mun River in north-east Thailand, and its many tributaries (Figs. 10, 11). This area is also renowned for early brick temples of the Chenla period and the city foundation of Devanika at Wat Phu. They also extend into Cambodia, one being found in the area of greater Angkor at Lovea (Malleret 1958–9). Some are very large, and the moat-like features are wide: at the site of Noen U-Loke, there are at least five such moats with a combined width of 200 metres. Surface inspection often reveals areas of iron slag and Iron Age pottery sherds. Many are associated with smaller mounds resulting from the processing of salt. Several have been excavated over the past thirty years, but usually only through small-scale test squares, some revealing deeply stratified and on occasion, long Bronze and Iron Age cultural sequences (Higham 1977; Indrawooth *et al.* 1990, 1991; Moore 1988, 1989; Nitta 1991; Phommanodch 1991; Welch and McNeill 1991). Before our research programme began, none of the moats and banks had been excavated to reveal their date and structure. We resolved that it would be necessary to open large areas by excavation, in order to assess spatial activities, and at the same time, to cut through the moats and banks to obtain further cultural and environmental information. Our study area is located west of Phimai, ancient Vimayapura, one of the largest Angkorian centres.



Figure 9. Non Muang Kao, a moated site of north-east Thailand, viewed from the air.

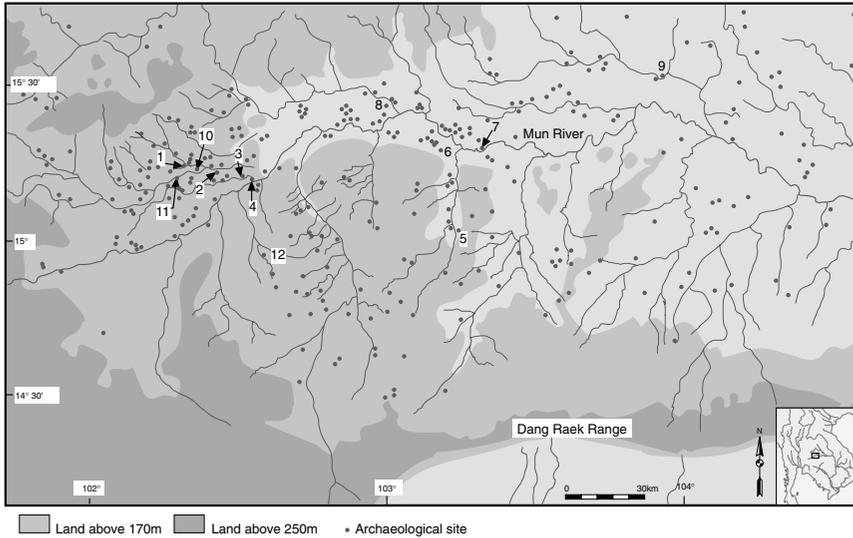


Figure 10. The distribution of moated sites in the Mun Valley, north-east Thailand. 1. Noen U-Loke; 2. Ban Prasat; 3. Ban Tamyae; 4. Phimai/Ban Suai; 5. Ban Takhong; 6. Ban Don Phlong; 7. Non Yang; 8. Non Krabuang; 9. Non Dua; 10. Ban Lum Khao; 11. Non Muang Kao; 12. Muang Phet.

Having undertaken intensive site surveys, we have excavated in the occupation areas of five sites, while in a further three, only the moats and banks have been opened (Fig. 11).

Ban Lum Khao is a Bronze Age settlement with no surrounding moats, and there we uncovered an area of 145 square metres. Non Muang Kao is a 50-hectare mound ringed by at least four moats, and a 5 metre by 5 metre square was excavated there, hampered by the extreme hardness of the cultural deposits. At Noen U-Loke, we have excavated 220 square metres of a mound covering about 12 hectares. Ban Non Wat is of about the same size, and in January to February 2002, we uncovered an area of 96 square metres, and plan two more seasons. Finally, an area of 28 square metres was opened immediately adjacent to the central Angkorian shrine of Phimai. In addition, the moats and banks at Ban Non Ngiu, Ban Nong Chua Khrut, and Ban Makham Thae have been sectioned.

The first objective necessarily involves understanding the structure and chronology of the prehistoric sequence (Fig. 12). We have isolated nine phases, as follows:

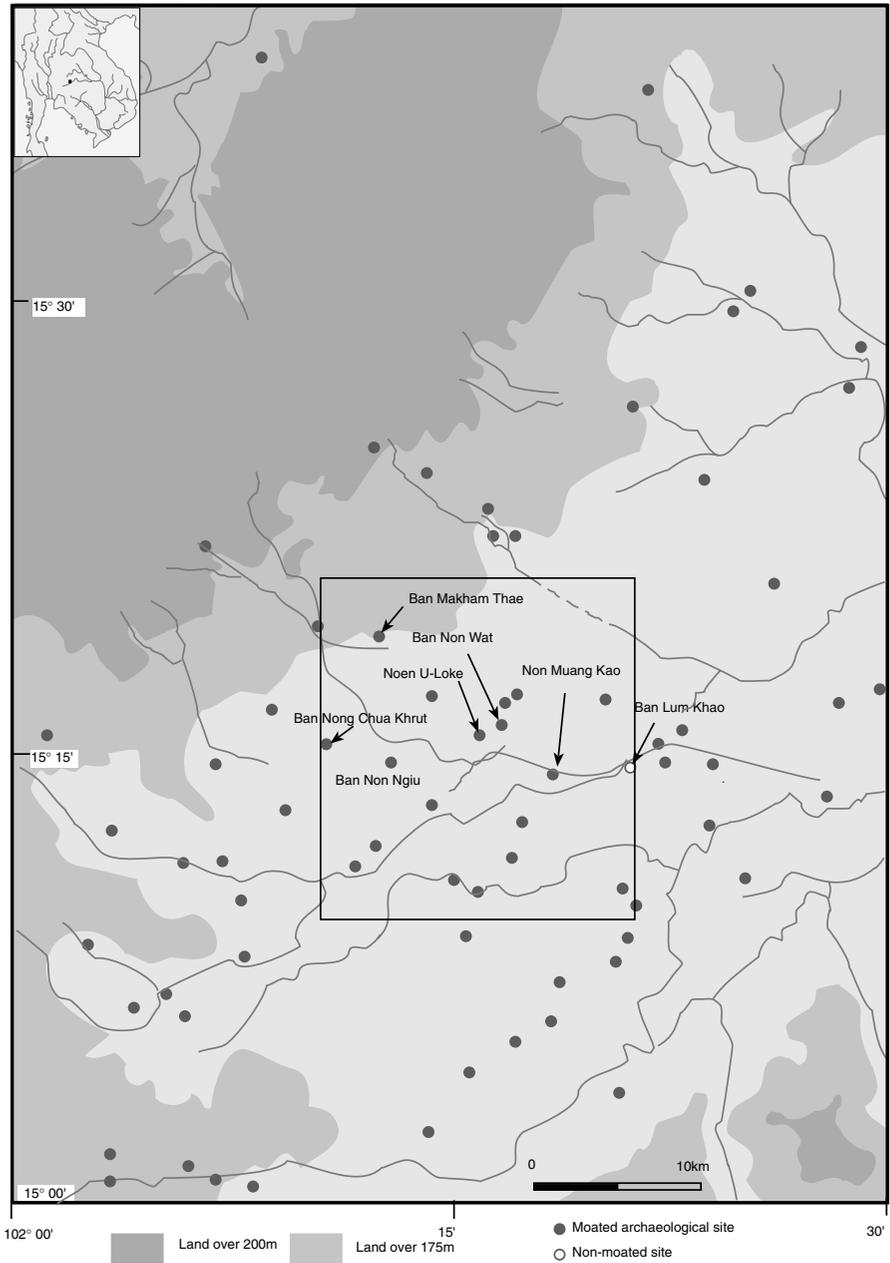


Figure 11. The study area in the upper Mun Valley, Thailand, showing the study area and location of excavated sites.

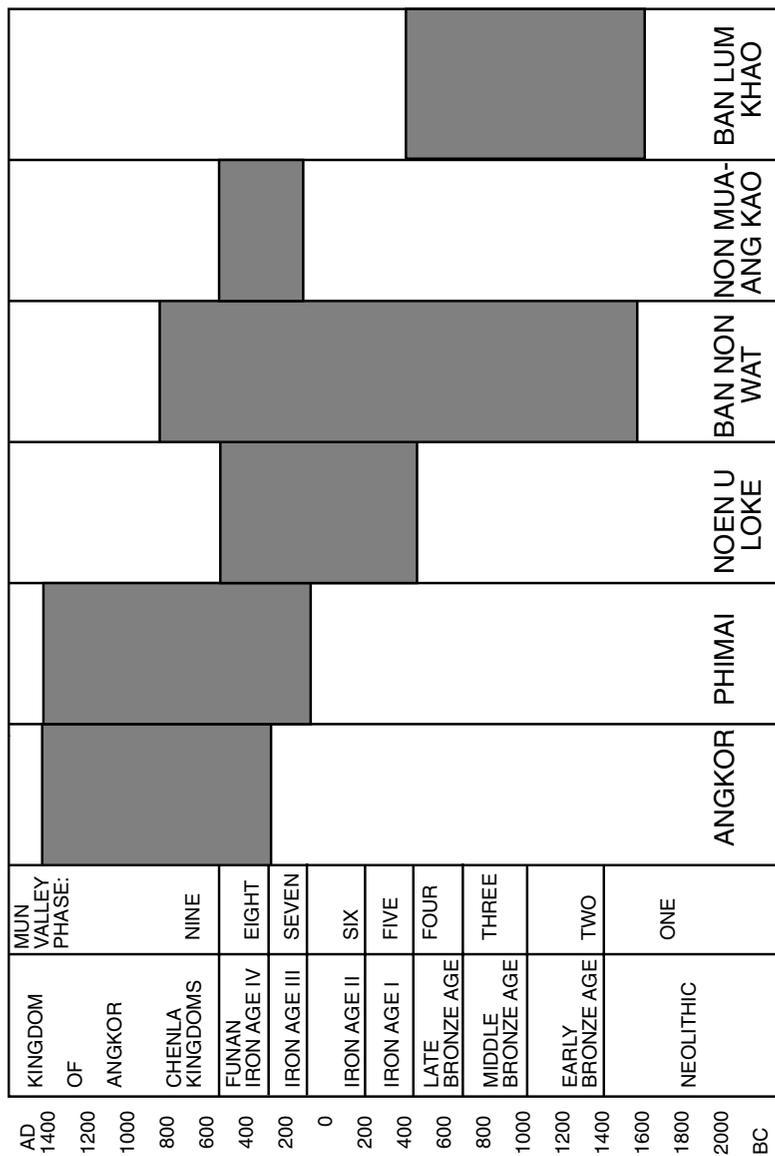


Figure 12. The chronological and cultural sequence in the study area. The prehistoric dates are approximate, and apply only to the upper Mun Valley study area.

Phase 1. Neolithic. At Ban Lum Khao, there is a series of pits below a Bronze Age cemetery, and a thin occupation layer, that has produced black incised pottery characteristic of the Neolithic in central Thailand and further north in the Sakon Nakhon Basin. Radiocarbon determinations suggest that this is a late Neolithic occupation, dated to the middle of the second millennium BC. At Ban Non Wat, there is also a basal occupation yielding Neolithic style ceramics and also a group of burials associated with black incised and painted vessels. These were uncovered in February 2002, and radiocarbon determinations fall between 2100–1400 BC.

Phase 2. Early Bronze Age. 1500–1000 BC. There are burials at Ban Lum Khao and Ban Non Wat in which the dead were interred on a east to west axis, associated with globular cord-marked vessels, or rare painted pots.

Phase 3. Middle Bronze Age. 1000–600 BC. The middle phase of the Bronze Age is present at Ban Lum Khao and Ban Non Wat. It is characterised by rows of burials associated with red slipped or painted vessels of great diversity in form and size, exotic marble and marine shell jewellery and animal limb bones. There are very few bronzes in graves, but much evidence for local casting.

Phase 4. Late Bronze Age. 600–400 BC. This phase is found at Ban Non Wat and in a handful of burials at Ban Lum Khao. The form of the pottery vessels changed, and there were many more grave goods, including animal limb bones and spindle whorls for preparing yarn.

Phase 5. Iron Age I. 400–100 BC. A small number of burials at Noen U-Loke contain ceramic vessels virtually identical with those of the late Bronze Age at Ban Lum Khao. They have also yielded iron artefacts.

Phase 6. Iron Age II. 200 BC–AD 200. This phase is present at Noen U-Loke in the form of two clusters of inhumation graves. There is also an occupation and mortuary episode at Ban Non Wat.

Phase 7. Iron Age III. AD 200–400. Four clusters of inhumation burials belonging to this phase have been found at Noen U-Loke, while further burials and house floors and foundations have been identified at Non Muang Kao. Domestic and industrial contexts were found at Ban Non Wat.

Phase 8. Iron Age IV. AD 300–500. This late Iron Age phase was documented in a series of burials at Noen U-Loke. Late Iron Age ceramics were also found in the lower layers at the Phimai temple excavation.

Phase 9. Early Historic, from AD 500. The remains of a brick temple were found at Phimai, underlying the Angkorian shrine, and occupation

belonging to this period was present in the uppermost layers at Ban Non Wat.

The discovery of Neolithic burials at the base of Ban Non Wat and Ban Lum Khao is the first evidence for settlement by early agriculturalists in the Mun Valley, and is matched in Cambodia by the presence of similarly decorated pottery at the famous site of Samrong Sen (Mansuy 1923). It extends the known duration of human occupation in this region by at least half a millennium. While the origin of rice cultivation in South-East Asia has not finally been resolved, a model that conforms with linguistic and archaeological evidence identifies the ultimate origin of rice farming in the Yangtze Valley. There, the transition from hunting and gathering to settled farming took place between about 8000–6000 BC (Zhao Zhijun 1998). A subsequent expansion of human settlement to the south via the main river valleys could then explain the widespread distribution of Austroasiatic languages from India to southern China, and the diaspora of cognate words for rice and aspects of its cultivation (Luce 1985). In South-East Asia, the earliest settlement by rice farmers involved inhumation burial, the introduction of the domestic dog, cow and pig, and ceramics decorated with distinctive incised patterns infilled with impressions. At Ban Non Wat, the pottery decoration also included incised designs enhanced by painted or burnished fields. One such vessel contained the remains of an adult interred in a seated, crouched position (Fig. 13). An analysis of the faunal remains from basal Ban Lum Khao has revealed the initial presence of very large bones from fish and wild animals, which could reflect settlement of an area hitherto unoccupied. The generally late appearance of state societies in South-East Asia can easily be understood when it is seen that this intrusive Neolithic phenomenon was contemporary with the late Longshan culture of the Yellow River Valley, and the Indus Civilisation in India.

The Bronze Age in South-East Asia was under way during the second half of the second millennium. Two major copper mining sites have been extensively excavated, and a third is now known within easy reach of the upper Mun Valley study area. Ingots were exported from these processing sites, and there is much evidence for casting at Ban Non Wat and Ban Lum Khao, in the form of furnaces, crucible fragments and ceramic and sandstone bivalve moulds. These were used to cast bangles, arrow or spearheads and axes. Far too few Bronze Age sites have been excavated on a large enough scale to permit a valid assessment of social organisation. The 1975 excavation of the widely advertised site of Ban Chiang, for



Figure 13. This jar burial from Ban Non Wat contained an adult interred in a seated, crouched position. The vessel was decorated in a style characteristic of the Neolithic, with painted and incised designs on the shoulder. Scale 20 cm.

example, was only 3.5 metres wide. There are, however, some sites where there are hints of differential mortuary wealth, but not sufficient to suggest the development of a hereditary hierarchy. One of these is Nong Nor in Central Thailand, while at Ban Na Di, one group of burials included most of the exotic imported grave goods (Higham and Kijngam 1984; Higham and Thosarat 1998). In our study area, there are two exposures of Bronze Age burials. At Ban Lum Khao, the excavation was located at the site's periphery, and no evidence of relatively wealthy burials was to be found in the rows of interments uncovered. Nor was there a distinction between the treatment of men or women. Our 2002 excavation at Ban Non Wat was near the centre of the settlement, and burials were markedly richer than at Ban Lum Khao during the same Middle Bronze

Age phase, although sexing individual burials has not yet been undertaken. One individual, for example, wore forty-six exotic marine trochus shell bangles. Another, a massive marble bangle eighteen centimetres in diameter. The most remarkable burial, however, contained the remains of a young teenager and an adult male. The grave was almost five metres long and three and a half wide. Grave goods included about seventy-five pottery vessels of outstanding quality and size, a socketed bronze axe, multiple shell bangles, and thousands of shell beads. A second remarkable burial of this period also contained very rich grave goods. Again, over seventy pottery vessels were found, along with shell and marble bangles, tens of thousands of shell beads disposed as necklaces, belts and anklets, shell earrings, and a large socketed bronze axe. Some individuals during the Bronze Age at this site attained considerable wealth or status, or perhaps both (Fig. 14).

The few Late Bronze Age burials at Ban Lum Khao contained markedly more grave goods than their predecessors, and a form of pottery vessel that is virtually identical with the earliest Iron Age wares at Noen U-Loke. Virtually all our knowledge of cultural change during the Iron Age comes from the latter site. Although occupied during the Bronze Age, our excavated area revealed nearly a millennium of Iron Age occupation in a sequence five metres thick.

The fifth of our phases, Iron Age I, is represented by a few scattered burials, but they nevertheless reveal a wealth of new information on the range of early iron artefacts being forged. One of the earliest interments, that of a woman, contained only iron ornaments: bangles and a torc or neckring. A man buried at a slightly later date wore bronze neckrings and bangles, but was accompanied by a large socketed spear or dagger, and a socketed hoe. He also wore a necklace of tigers' canine teeth, and was accompanied by many pottery vessels filled with fish skeletons and two socketed bronze projectile points. Iron Age phase II witnessed several major changes. Two tight clusters of burials were uncovered. In the earlier, the first agate and glass ornaments were found. In the latter, carnelian was added to the list of exotic jewellery, and the dead were interred in graves filled with intensely burnt and silicified rice. There was an increase in bronze ornaments with this later group, to include bells attached to anklets, toe rings and spiral ornaments. This cluster witnessed the quickening of exchange in exotic goods for, even if the carnelian and agate have a Central Thai rather than an Indian source, the glass must have been inspired in an exchange system that now included India (Theunissen *et al.* 2000).



Figure 14. The middle Bronze Age cemetery at Ban Non Wat included double graves of outstanding size and wealth. Burials 105 and 106 were interred with over seventy large pottery vessels, shell and marble jewellery and a socketed bronze axe.

Iron Age III witnessed a dramatic increase in mortuary wealth. We uncovered four further clusters of burials. Again, white burnt rice filled the graves, some of which were also lined and capped with clay. Pottery vessels were made to an extreme thinness, as if in specialised workshops, and decorated with lustrously burnished designs. Agate and glass ornaments proliferated, and jewellery now included gold beads, silver and gold ear coils, and silver rings and bangles. Iron knives were regularly found with the dead, but the greatest increase in mortuary wealth involved bronzes. Two rich males were interred with multiple bronze belts held in place by ornate catches. One of these men also wore heavy bronze ear coils, probably for insertion in the lobes. The second wore seventy-five bronze bangles on each arm. There were also multiple finger rings and toe rings (Fig. 15). A rich woman was found wearing a necklace of gold and agate beads, multiple bronze bangles, bronze ear coils, bronze anklets, a silver bangle, silver and bronze toe rings, silver finger rings, thirty-two bronze bangles, agate pendants, many fine pottery vessels, and an iron knife.

With Iron Age IV, clustering ceased and rows of graves were again encountered. There were no more rice-filled or lined graves, and although still containing bronzes, gold, and agates, the quantity of offerings fell away. The range of iron goods now included sickles and spears, and one young man was found buried prone, with an iron arrowhead lodged in his spine.

This is a unique mortuary sequence for the Iron Age in South-East Asia, but its importance can only be properly assessed when considered in conjunction with the evidence for the technology, environment and the construction and purpose of the massive earthworks that surround these settlements. The excavation at Noen U-Loke encountered much evidence for local industrial activity. Two small mounds lying just west of the main site are covered in Iron Age ceramics and have all the characteristics of salt-making sites, wherein the salty soil is to this day accumulated so that water can be passed through it to form brine. The brine is then boiled to concentrate the salt. The inhabitants of Noen U-Loke also smelted the local laterite ore and forged a range of weapons, ornaments, and tools. The number of sharp projectile points increased markedly in the later layers, at the same time as a young man was found interred with an arrowhead in his spine. Large socketed spades, hoes, and sickles reveal how iron was used to increase agricultural efficiency. The recovery of moulds, and the cores used to form the socket in cast bronze axes, also indicate a local bronze casting industry, while it is also possible that glass beads were manufactured at the site. It also seems likely that a specialist ceramic



Figure 15. The burial of a rich male from Noen U-Loke. This man was interred wearing three bronze belts, 150 bronze bangles, many finger rings, silver and gold ear ornaments, glass beads, an iron knife, and whole pottery vessels. His body had been covered with burnt rice.

industry developed during the Iron Age. At Noen U-Loke outstandingly thin and fine vessels were placed with the dead, but only four anvils to shape pots were found, all from the lower layers, together with a handful of possible burnishing stones. In contrast, a recent excavation at the Iron Age site of Ban Suai at Phimai has yielded many anvils and burnishing stones, suggesting that it may have been a specialised ceramic manufacturing site. Many of the dead at Noen U-Loke were interred with spindle whorls, indicating the processing of yarn, and textiles in the form of pseudomorphs on mortuary bronzes demonstrate the weaving of cloth.

The excavation of the moats and banks (Fig. 9) was undertaken with a mechanical digger. This allowed, for example, a 200-metre trench up to 6 metres deep to be excavated at Noen U-Loke in an afternoon. Dr W. E. Boyd, the project geomorphologist, could then examine the exposed sections while still fresh, and before they filled with ground water. These investigations have provided vital information on the date and nature of these earthworks, as well as on the environment during the Iron Age. The banks were constructed by digging deeply into the floodplain deposits. The intervening channels were also dug out in prehistory, and subsequently filled through a low-energy water regime. Excavations at the periphery of these sites has also revealed the presence of moats under cultural deposits, indicating that the expanding settlement covered at least one earlier moat. Thus, by building up banks round the site with fill removed from their vicinity, the prehistoric occupants were able to contain and control the flow of water.

Dating these banks, and the sediments that were laid down in the moats, is essential for an appreciation of the cultural sequence. Boyd and his colleagues have taken samples of charcoal and carbonised rice from the bank fill and the water-lain sediments within the moats (McGrath and Boyd 2001). At Noen U-Loke, two AMS dates from a channel that was later covered by the expanding Iron Age settlement have provided determinations of 87 BC–AD 114, and AD 81–339 at 2 sigma. The innermost moat sediment was subsequently accumulating, according to two further determinations, between AD 400 and 800. There are no AMS dates for the banks at Noen U-Loke, but there is a series for those at Ban Non Wat, where they enclose three moats. Five determinations from the inner bank have provided a consistent set of results, as follows at 2 sigma: 173 BC–AD 45, 49 BC–AD 209, AD 28–234, AD 23–214 and 357–3 BC. A date for the channel infill in the second moat (169 BC–AD 75) falls into the same general span, while there are three dates for the fill in the outermost bank

(336 BC–AD 1, AD 144–380 and AD 144–425). One further date from this bank only thirty centimetres from the surface is modern.

Thus the construction of the banks took place during the later Iron Age. At Ban Non Wat, the number of dates for the inner bank more specifically suggest construction within the period 100 BC–AD 200. This conforms with the two dates obtained from the channel at Noen U-Loke buried under later prehistoric occupation. In general, the outer banks and moats seem later than the inner ones, although still contained within the Iron Age. However, the presence of moats sealed by later cultural layers on the margins of these sites demands excavations from the periphery into the centre, to see how many there are. It may well be that channel construction preceded the earliest dates so far obtained, but for the present, we know that construction was being undertaken by at least our cultural phase 6, or Iron Age II, and continued into cultural phase 7.

Pollen from the moat infill sediments shows that this period saw an expansion of ricefields through forest clearance (Boyd and McGrath 2002). They have also noted evidence for a wetter climatic phase, during which the flood plain on which the sites are located, was crossed by bands of anastomosing river channels. The sites appear to have been located near such natural water courses, and Boyd and McGrath have suggested that water in these systems was diverted and managed within the artificial channels or moats that ringed the Iron Age settlements. The outermost, later moats were infilled with a different composition of clay, silt, and sand compatible with a slower water flow and presumably, a drier rainfall regime. The climate towards the end of the Iron Age thus seems to have entered a drier phase.

Keying the earthworks into the cultural sequence is a preliminary to investigating their purpose. Much effort was expended in the construction of the restraining banks, and they contained water that flowed with low energy. These moats were probably meshed in with natural stream channels that flowed past the sites. Bank construction may well have been progressive over several centuries, with new moats being opened as older ones silted up or were covered by an expanding settlement. During the extended dry season today, water is a priority for the survival of village communities, and many steps are taken to ensure a sufficient supply through digging wells and reservoirs, the latter often located near the village temple. Water is then transported to houses by human labour. Such ponds also supply a source of fish and other aquatic food, and it is not unreasonable to see the prehistoric moats in a similar light. However, there is also compelling evidence for competition and strife during the

later Iron Age, seen in the proliferation of iron projectile points one of which had severed a young man's spine, and a defensive role for the moats certainly cannot be ruled out.

The research programme in the Upper Mun Valley represents only the tiniest scratch on the surface of understanding the origins of the civilisation of Angkor. However, it has clarified some issues and posed new ones. Some of the moated sites represent a far longer time span than was at first envisaged. The recovery of deep Neolithic burials at Ban Non Wat means that at least some sites were occupied for in excess of 1500 years, providing the basis for early adaptation to the flood plain environment. At the same site, Middle Bronze Age burials were found set out in rows, and with a consistent mortuary ritual involving the placement of pottery vessels beyond the head and feet. Exotic shell and marble jewellery was also present, and the occupation layers of the period indicate local casting of bronze tools, weapons, and ornaments. However, the presence of an extremely rich burial 4.5 metres long brings with it the possibility of a higher degree of social differentiation than has been envisaged for the Bronze Age.

During the succeeding Iron Age, seen best at Noen U-Loke over a period of nearly a millennium, society became very much more complex, with significant changes being seen in the treatment of the dead, technological expertise, access to exotic goods, increased conflict and the organisation of labour.

The elaboration of mortuary ritual during phases 6–7 is seen in the provision of clay-lined coffins filled with rice, and a quantum change in the variety and quantity of grave goods. In addition to exotic items such as silver, gold, carnelian, agate, and glass, items that could have been locally cast or forged of bronze and iron reveal a high level of expertise that is compatible with, and could even require the skill of craft specialists. This is seen in the heavy bronze belts, bells, and decorated bangles. One man was interred with a large winged and socketed spade within a pot filled with rice. Iron knives were regularly associated with the dead, and both spindle whorls and the impressions of fabric indicate a weaving industry. During these phases the dead were buried in tight clusters comprising the remains of men, women, infants, and children. Beyond the immediate confines of the settlements, some of which now covered fifty hectares, extensive earthworks were constructed to retain and control water. This, it is argued, might have entailed the organisation of labour by a controlling elite. Slightly further away, salt was being processed, a commodity vital for preserving foodstuffs for dry season consumption, and to

this day widely traded. The pollen rain into the moats came from newly created rice fields, cut from the local forest and cultivated with the aid of the new range of iron implements. Large moated sites were densely packed, and under the conditions of population growth and increasing exchange in valued goods, inter-communal friction might be expected to manifest itself. Iron spears and arrowheads were now found in numbers, one of the latter embedded in a young man's spine. Strife and danger are strong stimuli to the vesting of authority in the hands of an elite. Nor do we need to look far at Noen U-Loke for candidates for such leadership roles, we find them in the richly endowed men interred with belts, knives, and silver, gold, or bronze ear discs. The burials of phase 8 at Noen U-Loke show a reversion to interment in rows, and a lessening in both mortuary wealth and intensity of ritual. There are no more rice-filled burials or clay lined coffins. Could it be that by this juncture, the elite leaders of the community were interred in a dedicated area, elsewhere on the mound? We have excavated only 0.11 per cent of Noen U-Loke, and this intriguing possibility must be left for others to investigate.

The Fulcrum

We have now pursued Angkor backwards in time to the beginning of the historic period in the fifth century AD, and traced the prehistoric period forwards from the first farmers to the end of the Iron Age, also in the fifth century AD. Now it is time to consider how they integrate.

In approaching this transition, it is assumed that the sequence of increasing social complexity identified in the upper Mun study area was matched not only in the Mun Valley as a whole, but also in the lowlands of Cambodia where the Chenla kings reigned. There is some supporting evidence for this assumption. Our excavations at Angkor have revealed Iron Age occupation only one hundred metres from the southern gate into Angkor Thom. At Phum Snay, about eighty-five kilometres north-west of Angkor, O'Reilly has excavated as part of our research programme, an Iron Age cemetery containing rich burials (O'Reilly and Sytha 2001). This site has been virtually destroyed by looting during the past two years, but villagers have reported finding skulls wearing horned bronze helmets inlaid with gold. This seemed apocryphal until we encountered one of many skulls near the looters' pits, the upper part of which was stained green by bronze. Current research at Angkor Borei at the head of the Mekong Delta has revealed an Iron Age cemetery (Stark

et al. 1999), while further south, Vietnamese colleagues have encountered late prehistoric occupation in the flat deltaic landscape that was to become Funan (Le Xuan Diem *et al.* 1995).

The premise that increasing social complexity during the Iron Age was more widespread than the confines of our study area makes the search for the origins of Angkor more broadly based. We can identify in the late prehistoric record, factors which would have encouraged ambitious leaders to seek exalted status in emerging states, while also finding strong elements of continuity between Iron Age communities and those documented by the early historic sources. The size of some Iron Age settlements, combined with evidence for craft specialists, trade in exotic goods and warfare, not to mention the major public works to control water, strongly suggest the development of chiefdoms. In this context, hereditary leadership and strong social ranking within a kin-based society would have been present. We can now incorporate a new ingredient: the quickening of maritime trade. This does not imply the supine acceptance of Indian or Chinese trade goods. The ancestors of the coastal communities of South-East Asia had been adept deep-sea sailors for millennia. Some were to colonise distant Malagasy. Rather, we have a classical contact situation, in which the indigenous leaders could choose to adopt exotic names, languages, architectural forms, and deities to augment further their status as emerging rulers of small, competing states. Devanika, it has been noted, set up a Sanskrit inscription in the second half of the fifth century, recording the gifts he made to a religious foundation. We do not know where he came from, but his immediate metaphorical ancestor would have lain in a richly endowed Iron Age grave. By the same token, the *pon*, aristocratic leaders of Chenla who controlled the water resources, have their prehistoric forebears in the moated Iron Age communities. The high-status women, through whom the status of *pon* was transmitted, relate to the individual interred at Noen U-Loke wearing agate, gold and silver jewellery, just as those who wove the fine cloth used as currency during the period of Chenla inherited their skills from the prehistoric women buried with their spindle whorls. At Phimai, we have found Iron Age occupation below the remains of an early brick temple. Brick temples of the Chenla period have also been found in the upper Mun Angkorian sites of Phanom Wan and Phanom Rung. At the former, the Angkorian sanctuary was built over an Iron Age cemetery in which the dead were interred on the same orientation as the central temple.

Under this model of the transition to the state, there were two major stimuli. On the one hand, there were the Iron Age chiefdoms, developing rapidly under conditions of competition, warfare, and trade. On the other, there was the emergence of the maritime Silk Route, which brought new goods and ideas to South-East Asia. The result was a rapid transition to competitive indigenous states, one of which ultimately dominated under Jayavarman II at Angkor.

The broader perspective

The imperative to document the late prehistoric antecedents to state formation is not confined to the Mekong and Mun valleys. It is necessary to recall that in India, the rise of the Mauryan Empire, particularly under the reign of Ashoka from about 268 BC, saw a sharp rise in international trade. Hellenistic influence from the west brought India into a shared orbit with Greece and later, Rome. Ashoka's conversion to Buddhism led to a new missionary zeal that saw him dispatch emissaries to the east, for the text known as the *Sasanvamsappadika* records his decision to send three missionaries, Gavampti, Sona, and Uttara to South-East Asia (Glover 1998). The spread of Buddhism north and west from India was also facilitated by the developing trade along the Silk Road. Under the relatively stable conditions of the Han Dynasty, China likewise became increasingly involved in their 'Western Regions', bringing their armies and settlers into the Tarim Basin. To the south, Han imperial expansion absorbed Lingnan and northern Vietnam, and exerted considerable influence through tribute missions and trade with both mainland and island South-East Asia.

This opening of contacts between east and west allows the development of the state of Angkor to be set within its broader international context (Fig. 16). The Arakan coast of western Burma, for example, occupies a key geographic position in the maritime exchange route (Gutman 2001). It faces India across the Bay of Bengal, and was thus a natural stepping stone when Emperor Ashoka sent Buddhist missions to South-East Asia. Tradition has it that the Buddha manifested himself in Arakan, when an image of him was cast. This is known as the Mahamuni (Great Sage). Although the history of Arakan has hardly been tested archaeologically, it is known that two major cities span the fifth to the eighth centuries AD. The first, Dhanyawadi, incorporated a walled royal precinct and the hill on which the Mahamuni was housed and revered until the early eigh-

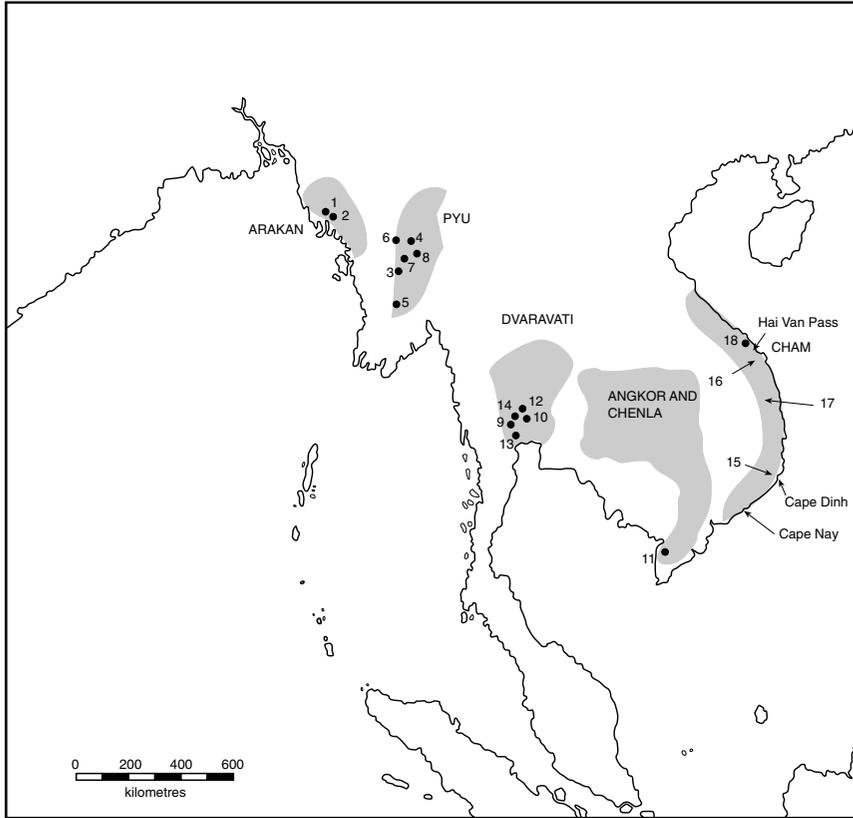


Figure 16. The location of the South-East Asian states and sites mentioned in the text. 1. Dhanyawadi; 2. Vesali; 3. Beikthano; 4. Halin; 5. Sri Ksetra; 6. Nyaunggan; 7. Nyaungyan; 8. Thaunthaman; 9. Ban Don Tha Pet; 10. Ban Tha Kae, Lopburi; 11. Oc Eo; 12. Chansen; 13. Nakhon Pathom; 14. U-Thong; 15. Panduranga; 16. Amaravati; 17. Vijaya; 18. Quy Nhon.

teenth century, when it was removed to Mandalay. The second city of Vesali, located like Dhanyawadi in a rich agricultural valley suited to rice cultivation, but with access to the sea, was also ringed with a substantial brick wall and moat. The Shit-thaung inscription text listed twenty-two kings of the Ananda Dynasty who ruled this area. Buddhism was the dominant religion, but not to the exclusion of Hinduism. Coins were minted, and there is evidence for extensive maritime trade and wealthy urban communities.

Further east, The Pyu or Tircul people of central Burma were first mentioned in a mid fourth-century AD Chinese text in a list of the tribes

on the frontier of south-western China. The author, Chang Chu, described them as the Piao. Other early Chinese records that survived in later editions describe the Piao as civilised, 'where prince and minister, father and son, elder and younger, have each their order of precedence'. The Chinese called them the Pyu, but the Mon people knew of them as the Tircul (Luce 1985). The Pyu civilisation developed in the dry zone of central Burma between about 200 BC and AD 900. It is best known on the basis of three large walled cities, Beikthano, Sri Ksetra, and Halin. All were located in tributary valleys of the Ayeyarwady (Irrawaddy) River, where it was possible to harness the local rivers or streams for irrigation purposes. There is compelling evidence at Beikthano for a pre-Buddhist mortuary tradition involving large brick and timber halls containing the cremated remains of high-status individuals (Aung Thaw 1968). By the fourth or fifth centuries AD, however, Buddhism had taken root and many large public buildings, including *stupas* and monasteries, were constructed. Meanwhile, the cremated dead were interred in large ceramic mortuary jars set in brick structures outside the city walls. The Pyu spoke a Sino-Tibetan language, and employed Indian scripts in their inscriptions. They were proficient bronze casters, one set of figurines from Sri Ksetra showing dancers and musicians richly appressed and ornamented. Skilled artisans also made silver Buddha images of great beauty.

Now that prehistoric enquiries are expanding in this region of Burma, it is possible to gain a first impression of the duration and complexity of Bronze and Iron Age societies there. Nyaunggan contains richly endowed late Bronze Age burials, while Hudson (2001) has reported on a series of sites in the Samon River valley to the south-east. The most important is definitely Nyaungyan, although the details of the finds are fugitive due to excavation by unqualified enthusiasts. Bronzes, however, are spectacular, and are said to have been found in association with inhumation burials. They comprise a series of so-called pregnant bronze goddesses, large apparently female forms up to fifty-five centimetres high even without taking into consideration the damaged legs. These extraordinary castings incorporate breasts but lack heads and arms. In one case, there are two breasts and one pregnant stomach, but others have four or even six breasts and correspondingly, two or three accentuated bellies. Whether these were symbolic renditions of females, or a large form of body ornament is not known, but they surely herald, when proper scientific excavations are conducted, a very exciting range of bronze castings that are already known to include arrowheads and spearheads up to thirty centimetres long.

The Iron Age is virtually unknown in Burma, with the exception of Taungthaman, located just above Ayeyarwady flood plain south of Mandalay (Luce 1985). Excavations there have uncovered inhumation burials dating to about 500–100 BC. The dead were laid out on their backs, and accompanied by a range of offerings that include pots, beads, iron knives, short swords, and fish hooks. There is evidence for a workshop for making stone tools, and houses raised on wooden posts. Some rich graves include round, etched onyx beads as offerings, and these may well originate in Indian workshops. Clay-lined hearths have also produced rice remains. The site is important for illuminating the late prehistoric Iron Age culture from which the Pyu state developed during the first millennium AD.

The civilisation of Dvaravati flourished in the valley of the Chao Phraya River from about AD 400 to 900. The people spoke the Mon language, which is closely related to Khmer. There are many Iron Age settlements in this area that reveal increasing cultural complexity between 400 BC and AD 300. These include Ban Don Tha Phet, where rich burials contain a number of Indian imports (Glover 1989). At Ban Tha Kae, the late prehistoric phase incorporates ceramics, gold beads, querns and stamp seals similar to those from Oc Eo on the Mekong Delta (Ciarla 1992). There is a continuous record for the transition from prehistory to the historic period of Dvaravati at the site of Chansen, where the second period of occupation included a notable ivory comb decorated with a goose, two horses, and Buddhist symbols dating probably to the first or second centuries AD (Bronson 1979). Although documentary sources for Dvaravati are few, it is known that the scribes employed Sanskrit in their inscriptions, and that Buddhism was particularly favoured but not to the exclusion of the major Hindu deities.

The archaeology of Dvaravati, which was a contemporary of Chenla and early Angkor, is dominated by a series of large, moated city sites of irregular oval or sub-rectangular plan. The favoured location involved a stream that fed the moats. Excavations have often revealed the foundations of religious buildings in laterite and brick. These were coated in decorated stucco with Buddhist figures or symbols. The buildings include *stupas* and *caityas*. These were constructed to house relics or images of the Buddha. There are three geographic groups of centres, known as the Eastern, Central, and Western. It is not known whether there was overall integration into a single kingdom, or a series of small, regional polities. At that juncture, the sea level would have been slightly higher than at present, and there would have been less sedimentation. Large centres

would then have been closer to the shore and able to participate in maritime trade

The few inscriptions of the Dvaravati civilisation are important sources of information. Unlike the situation in Cambodia, where the original names of the Funan and Chenla kingdoms are unknown, we know that the name of the Chao Phraya polity centred at Nakhon Pathom was Dvaravati, because two coins inscribed with the Sanskrit text *Sridvaravatisvarapunya*, or 'meritorious deeds of the King of Dvaravati' were found there. Six surface finds of coins from Muang Dongkorn also refer to the King of Dvaravati. Dvaravati means 'which has gates', perhaps referring to the gates giving access through the city walls. A mid seventh-century inscription from the site of U-Thong reads 'Sri Harshavarman, grandson of Ishanavarman, having expanded his sphere of glory, obtained the lion throne through regular succession'. The king had given meritorious gifts to a *linga*, and described his exalted ancestry and military achievements. Two brief inscriptions from Lopburi were written in the Mon language. This is closely related to Khmer, and indicates that Mon was the native language of the Dvaravati civilisation. A further text from Lopburi names Arshva, son of the King of Sambuka. Finally, a seventh-century inscription from Sri Thep records 'In the year . . . a king who is nephew of the great King, who is the son of Pruthiveenadravarman, and who is as great as Bhavavarman, who has renowned moral principles, who is powerful and the terror of his enemies, erects this inscription on ascending the throne.'

The Cham civilisation occupied the coastal plains of Vietnam from Saigon to the Hai Van Pass from at least the third century AD until its demise at the hands of the Vietnamese in the seventeenth century. The territory of the Chams is divided into a series of restricted coastal enclaves, backed to the west by the Truong Son Cordillera. Their centres are located at the estuaries of the rivers that cross these coastal plains. The most southerly region of Champa lies from the eastern margins of the Mekong Delta to Cape Dinh, an inhospitable stretch of coastline with thin, sandy soils. Between Cape Dinh and Cape Nay, there are three well-watered valleys separated by low passes, an area known to the Chams as Panduranga. North of Cape Dinh, the coastal strip broadens into a plain of approximately seventy square kilometres. There are many sites here in a region known to the Chams as Vijaya. The region of Amaravati lies between the Hai Van pass and Quy Nhon, and was the dominant area of Cham political centrality. It has a reasonable area of land available for agriculture, and several well-sheltered harbours. The last area lies north

of the Hai Van pass, with most archaeological sites being concentrated in Quang Tri province. The relative importance and political reach of these polities named in the inscriptions almost certainly fluctuated. The adoption of Hindu gods, the Brahmi script and the Sanskrit language in Champa points to a similar situation as that documented for Angkor.

The Chams speak an Austronesian language most akin to the languages of Borneo, and their ancestors probably settled this coastal strip during the first millennium BC. The Sa Huynh culture is seen by most as the ancestral Iron Age group that developed into the civilisation of Champa. Sa Huynh cemeteries comprise urnfields in which lidded ceramic vessels contain the cremated remains of the dead with a range of often opulent grave goods. These include iron weapons, and a form of jade or glass ear ornament the distribution of which concentrates in Vietnam. The presence of identical examples from central Thailand to the Philippines and on to Taiwan demonstrates their involvement in maritime trade and deep sea voyaging.

The states that developed in the dry zone of Burma, Central Thailand and coastal Vietnam did so in the context of rich and complex Iron Age societies. Despite marked local differences in language and culture between the Pyu, Khmer, Mon, and Cham speakers, they uniformly adopted exotic languages, writing systems, architecture and religions. In all these respects, they match the sequence in the states of Chenla and Angkor.

A myriad of small states also developed under similar circumstances, and at the same time, along the course of the Silk Road itself. The major oases of the Tarim Basin, for example, sustained the kingdoms of Shan-shan and Khotan (Fig. 17). The latter was located in the south-western corner of the Tarim Basin, south of the Taklamakan Desert. Here, the rivers that flow north from the Kunlun Range form delta oases before their water dissipates in the desert sand. Khotan was known to the Chinese as Yutian, and was renowned as a source of jade. In terms of archaeological remains, several elaborate inhumation graves have been found at Shampula dating to the first and second centuries AD, and these have yielded a remarkable assemblage of woollen, cotton and silk fabrics. This period is illuminated by the corpus of local bronze coin issues. These have Kharoshthi and Chinese texts, the former naming a series of kings with the family name of Gurga and the titles *Maharaja* (great king), and *Yidaraja* (King of Khotan). Further evidence for the adoption of exotic names is seen in the Tibetan *Li Yul* annals. It describes fifty-six kings, with Buddhism being introduced 404 years after the Nirvana, during the

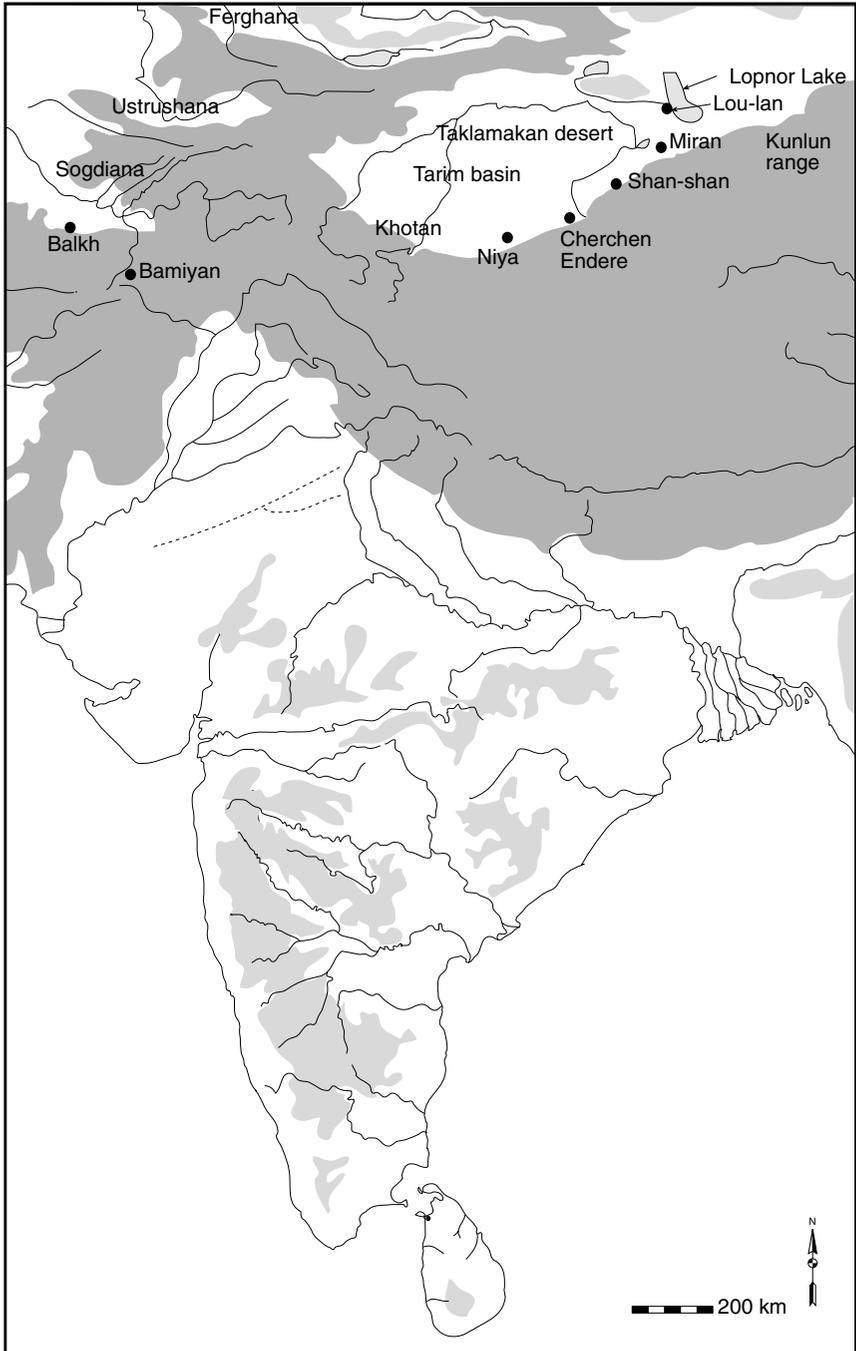


Figure 17. Map of India and Central Asia, showing sites mentioned in the text.

reign of King Vijaya Sambhava. The fourteenth king called Vijaya Jaya, married the Chinese princess who brought silk worms to Khotan to found the local silk industry. It was she who founded a Buddhist monastery known as Lu-she, south of the capital.

The state of Shan-shan was founded in the first century BC in the southern and eastern margins of the Tarim Basin. At its greatest extent, it encompassed the cities of Niya far to the west, and progressing eastward, the areas and cities of Endere, Cherchen, Charklik, Miran, and Lou-lan. The last site lies at the junction of the Kuruk Darya and Lop-nor lake, a highly strategic location on the Silk Road where the traveller could either take the northern or southern routes round the Taklamakan Desert (Rhie 1999).

The documents recovered from the Shan-shan sites, particularly those from Niya, provide much information on this state between about 230 and 335 AD. They were written in Niya or Krorän Prakrit, using the exotic Kharoshthi script. We learn that Shan-shan was divided into districts known as *rajas*, each under the control of a royally appointed governor or *rajadaraja*. One surviving text describes how the *rajadaraja* was required to detain the family of the leader of an embassy to Khotan until his return to Shan-shan. These provinces were further divided into a region known as a *nagara* or *avana*. Then there was a further division into *satas*, supposedly comprising about a hundred households. The king was assisted by a number of court officials. There was an *ogu*, who seems to have been a highly ranked administrator. The legal system was under the control of the *kitsaita* and the *gusura*. Local affairs were run by a lesser official known as a *cojbho*. Taxation was paid at least in part in kind, and was overseen by the *sothamga*. The assessment was based on the production of each *sata*, and was assessed by *sothamgas*. The texts mention taxation levied on the production of butter, wine, sheep, carpets, cereal crops, and camels, a list that well describes the agricultural wealth of the oases, and the industries that flourished. To maintain the records, there were scribes (*divira*), and messengers (*lekhaharaga* and *dutiyae*). The title of *cojbho*, and their duties, are often found in the surviving documents. They helped to administer land ownership disputes, for example, and fulfil royal decrees.

Much land was owned by the king, and high members of the nobility owned estates. It was possible for people to buy and sell land. The many Buddhist monasteries had their own land holdings. Some documents also set out contracts for the purchase of slaves, people who might well have been taken in war. Other texts record marriage and divorce. Although

many of these documents have been described as administrative ephemera, they provide a virtually unparalleled glimpse of the inner workings of a state. By substituting some of the above terms, one could well be describing the administration of Angkor.

Cherchen was one of the major sites of the Shan-shan kingdom. The cemetery of Zaghunluq lies in the area of Cherchen, and excavations there have uncovered burials that reveal the wealth of the prehistoric communities, and the ethnic group that contributed to the development of the Tarim Basin states a millennium later. One man, for example, was interred in a pit almost three and a half metres deep, accompanied by a woollen blanket, his saddle, as well as a felt blanket, layers of reeds and tree branches and tanned horse hides. The man himself had been laid out on top of mats woven from willow branches. He wore a short beard and his hair was plaited. His clothing was woven from sheep's wool, and was dyed into a wide variety of colours. He wore woven trousers and a shirt made of component lengths of cloth stitched together, while his leggings comprised brightly coloured strips of wool wrapped round his lower legs.

One could expand this review of Silk Road states west to include Sogdiana, Ustrushana, Bamiyan, Balkh, Ferghana, and many others, but the essential pattern remains the same: complex late prehistoric communities preceded a sudden transition to regional states during the period when international trade burgeoned.

Summary and conclusions

Portuguese missionaries visited Angkor just over a century after it was abandoned. They reported a huge stone city being invaded by the jungle, and suggested that it had been founded by Alexander the Great, or the Roman emperor Trajan. The serious study of this civilisation received a major stimulus with the foundation of the *École Française d'Extrême Orient* a century ago. The dynastic sequence was disentangled and the major structures placed in their chronological order. Documentary and epigraphic sources identified small and competitive states that preceded the foundation of the kingdom of Angkor in 802 AD. These have been traced back to the third to eighth centuries AD, and excavations have uncovered early brick temple foundations, and evidence not only for trade with India and China, but also the adoption of the Indian Brahmi script and Sanskrit language, linked with the worship of Indian deities. On the

one hand, this has stressed Indianisation to account for the genesis of early states, in which the native inhabitants were accorded a menial role as recipients of Indian civilisation. This has been seriously questioned in some quarters, and the role of the indigenous societies as active sponsors of international maritime trade has been promoted. Under the latter model, it was South-East Asian sailors who visited India and returned with new goods and ideas.

No explanation for the rise of states in the Mekong Valley has hitherto been in a position fully to incorporate the contribution of the indigenous inhabitants for lack of intensive archaeological research. This situation has been partially redressed by recent fieldwork. We know that the capital of the early state of Funan at Angkor Borei accumulated over a prehistoric Iron Age settlement. At Angkor, there was prehistoric occupation, and large and opulent Iron Age sites are now coming to light in Banteay Meanchay Province west of Angkor. In the upper Mun Valley, an important region that provided the third or Mahidharapura dynasty of Angkor, extensive excavations have documented a long prehistoric cultural sequence marked by increasing social complexity. With the discovery of Neolithic interments at Ban Non Wat in 2002, the sequence now extends over a period of two millennia from the initial settlement by rice farming communities. During the Bronze Age, we encounter burials indicating widespread exchange in marine shell and marble, and proficient local casting of imported copper and tin ingots. Four Bronze Age burials were of outstanding size and wealth. However, it was during the Iron Age, that we witness a major transformation, and this can be dated to the period from 200 BC to AD 400. There were many more sites, and they grew significantly in size. A wide range of iron tools, ornaments, and weapons was forged from the local iron ore. Bronze production saw a quantum leap from the preceding Bronze Age. Exchange brought in a much wider range of exotic items including gold, silver, carnelian, and glass. There was a major investment of labour in the construction of banks and moats round the settlements to control water. Iron arrowheads, spears, and daggers were now manufactured. Flood plain forests were cleared to produce rice fields, and salt was produced on a major scale. Specialists made outstanding ceramic vessels, and there was a vigorous weaving industry. The mortuary ritual was intensified with the provision of clay-lined coffins in which the dead were laid out and covered with burnt rice. Offerings for men and women interred in specified clusters reached a new pitch of wealth.

In the late fifth century, a ruler called Devanika set up a Sanskrit

inscription below the junction of the Mun and Mekong confluence describing his munificent gifts to a new foundation. Not long after, small brick temples were being constructed at future Angkorian centres in the Upper Mun Valley, and we read of a state there known as Canasapura, with a line of kings with resounding Sanskrit names. It is suggested that this transformation, seminal in the later establishment of the Kingdom of Angkor, was generated within the late prehistoric communities now being documented archaeologically for the first time. With increasing confidence, we can identify links between the Iron Age chiefdoms and early states: the organisation of labour to put in place water control facilities, the important social role of women, increasing incidence of conflict, and specialised production to answer new social demands to exhibit status. The growth in riverine and maritime trade provided new stimuli, and the opportunity further to augment the status of leaders and separate them from their lesser ranked kin through the adoption of esoteric religions, language, and writing. Yet, behind this façade, they remained essentially South-East Asian, just as their descendants do to this day.

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