



THE INDUS



LOST CIVILIZATIONS

The books in this series explore the rise and fall of the great civilizations and peoples of the ancient world. Each book considers not only their history but their art, culture and lasting legacy and asks why they remain important and relevant in our world today.



THE
INDUS
LOST CIVILIZATIONS

ANDREW ROBINSON

REAKTION BOOKS

*For Asko Parpola
Scholar, decipherer and friend*

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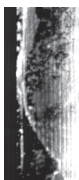
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CHRONOLOGY

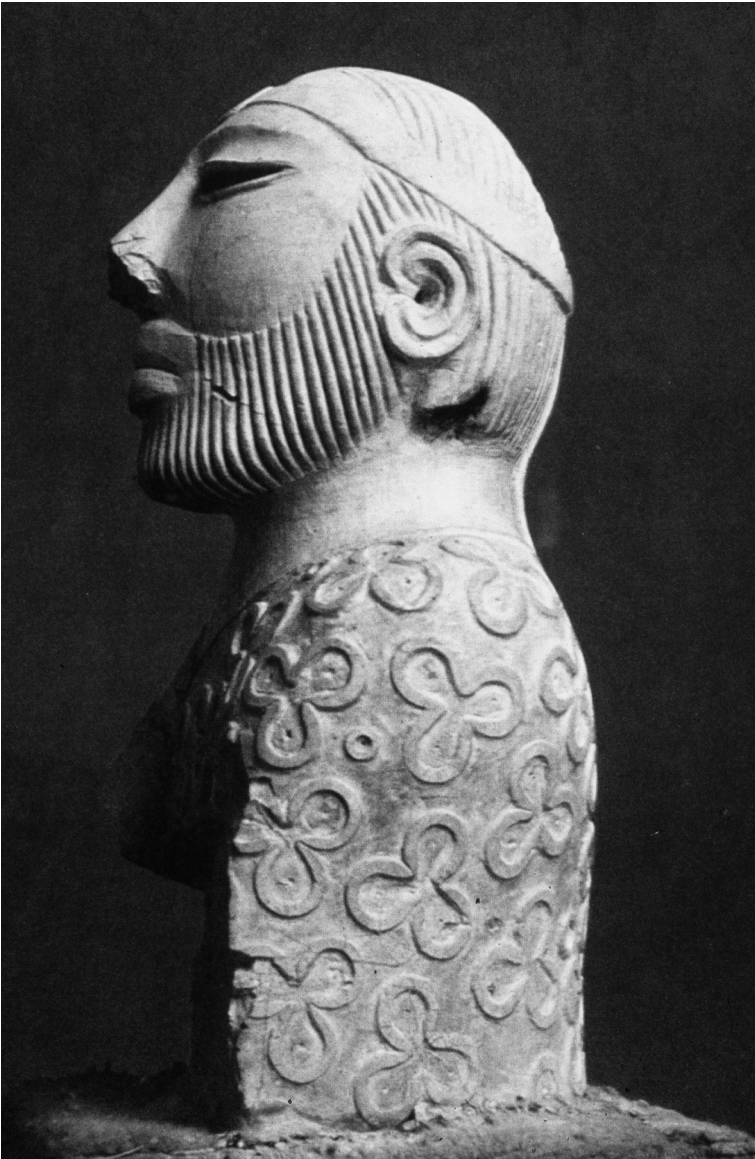
c. 7000–2600 BC	Village habitation at Mehrgarh (Baluchistan): wheat and barley cultivation, domestication of cattle
c. 5000 BC	Rice cultivation in China and India (Ganges valley)
Middle of 4th millennium BC	Urbanization at Uruk, Mesopotamia
c. 3500 BC	Settlement at Harappa (Punjab)
c. 3500–2600 BC	Early period of Indus civilization
c. 3100 BC	Cuneiform script begins in Mesopotamia; hieroglyphic script begins in Egypt
First half of 3rd millennium BC	Gilgamesh of Uruk reigns, Mesopotamia
c. 2600–2500 BC	Pyramids constructed at Giza, Egypt
c. 2600 BC	First Dynasty of Ur, Mesopotamia: trade between Mesopotamia and Indus valley begins

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c. 2600–1900 BC	Mature period of Indus civilization: cities at Harappa and Mohenjo-daro (Sindh); Indus script is used throughout the civilization
c. 2400–1500 BC	Bactria and Margiana Archaeological Complex (BMAC), Turkmenistan and Afghanistan
c. 2334–2279 BC	Sargon of Akkad reigns, Mesopotamia; trades with Meluhha (Indus valley)
2nd millennium BC	Indo-Aryan-speaking peoples migrate from west into northwest India
c. 1900–1700 BC	Late period of Indus civilization: cities and Indus script decline
c. 1900–1500 BC	Alphabet begins in Egypt, Palestine and Sinai
c. 1800 BC	Trade between Mesopotamia and Indus valley declines
1792–1750 BC	Hammurabi of Babylon reigns, Mesopotamia
c. 1600–1050[?] BC	Shang civilization, China: Chinese character script develops
c. 1500–500 BC	Composition of Rigveda, followed by other Vedic literature in Sanskrit
1361–1352 BC	Tutankhamen reigns, Egypt
c. 1300 BC	Harappa ceases to be inhabited

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c. 1200 BC	Collapse of civilization in eastern Mediterranean (Knossos, Mycenae, Troy, New Kingdom Egypt and others)
c. 800 BC	Cities begin in Ganges valley
563–483[?] BC	Life of Siddhartha Gautama, founder of Buddhism
522–486 BC	Darius the Great reigns in Persia
326 BC	Alexander the Great invades Indus valley
c. 300 BC–AD 400	Composition of Hindu epics <i>Ramayana</i> and <i>Mahabharata</i>
c. 269–232 BC	Reign of Asoka; Brahmi and Kharosthi scripts begin
AD 1920s	Indus civilization discovered; excavation begins
1947	Partition of Indus sites between Pakistan and India
1980	Mohenjo-daro inscribed in list of World Heritage Sites by UNESCO



Bust of the 'priest-king', from Mohenjo-daro in the Indus valley.



ONE AN ENIGMATIC WORLD

In *Civilisation*, Kenneth Clark's study of Western civilization based on his pioneering 1960s television series, the eminent art historian pondered the non-Western origins of civilization two-and-a-half millennia before the classical Greeks. He observed:

three or four times in history man has made a leap forward that would have been unthinkable under ordinary evolutionary conditions. One such time was about the year 3000 BC, when quite suddenly civilisation appeared, not only in Egypt and Mesopotamia but also in the Indus valley; another was in the sixth century BC, when there was not only the miracle of Ionia and Greece – philosophy, science, art, poetry, all reaching a point that wasn't reached again for two thousand years – but also in India a spiritual enlightenment that has perhaps never been equalled.¹

Ancient Egypt and ancient Mesopotamia are familiar to the world, because of their art, architecture and royal burials; their extensive texts written in Egyptian hieroglyphs and Sumerian and Babylonian cuneiform; and numerous references to the Egyptian pharaohs and Babylonian and Persian rulers in the Hebrew Bible and Greek and Roman literature. So, too, are the glories of classical Greece and, maybe less so, the spirituality of Buddhist India (roughly contemporary with Greek philosophy) and early Hindu India as expressed in the Vedic literature (probably composed between 1500 and 500 BC). Not so familiar, however, is the

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civilization that appeared in the Indus valley – in what is now Pakistan and India – during the first half of the third millennium BC.

The Indus civilization was, in its own way, as extraordinary as the civilizations of Egypt and Mesopotamia. But it declined around the nineteenth century BC and left no direct legacy in the Indian subcontinent. Neither Alexander the Great, who invaded India from the northwest in the fourth century BC, nor Asoka Maurya, the great Buddhist-oriented emperor who ruled most of the subcontinent in the third century BC, was even dimly aware of the Indus civilization; nor were the Arab, Mughal and European colonial rulers of India during the next two millennia. Indeed, amazing as it may seem, the Indus civilization remained altogether invisible until the 1920s, when it was almost accidentally discovered at Harappa in the Punjab by British and Indian archaeologists (during Clark's youth). Ever since then, scholars have been trying to elucidate its mysteries, including the meanings encoded in the characters of its aesthetically exquisite but stubbornly undeciphered writing system, and thereby to elevate this most significant of 'lost' civilizations to the position it deserves – both in the history of South Asia and in world history.



Mohenjo-daro, one of two leading cities of the Indus civilization along with Harappa, seen from the air. It is located in southern Pakistan near the Indus river.



Map showing the most important of the approximately 1,000 sites of the Indus civilization and adjacent areas. Most sites belong to the Mature period, c. 2600–1900 BC, but some are older, in one case as early as 7000 BC.

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The Great Bath, Mohenjo-daro.

Archaeologists have identified well over a thousand settlements belonging to the Indus civilization in its various phases. They cover at least 800,000 square kilometres of what in 1947 became Pakistan and India – an area approximately a quarter the size of Western Europe – with an original population of perhaps one million people (the same as that of ancient Rome at its height). This was

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the most extensive urban culture of its time, about twice the size of its equivalent in Egypt or Mesopotamia. Though most Indus settlements were villages, some were towns, and at least five were substantial cities. The two largest cities, Mohenjo-daro and Harappa, located some 600 kilometres apart beside the Indus river and one of its many tributaries, were comparable with cities like Memphis in Egypt and Ur in Mesopotamia during the 'Mature' period of the Indus civilization, that is, between about 2600 and 1900 BC. Their maximum populations probably never exceeded 50,000, although life expectancy was good, judging from human bones in the cemetery at Harappa: nearly half of the individuals reached their mid-30s and almost one-sixth lived beyond the age of 55.

However, the cities, despite their excellent brick-built construction, do not boast pyramids, palaces, temples, graves, statues, paintings or hoards of gold like those found in Egypt and Mesopotamia. Their grandest building is the so-called Great Bath at Mohenjo-daro, the earliest public water tank in the ancient world, a rectangle measuring 12 metres by 7 metres, with two wide staircases to the north and south leading down to a brick floor at a maximum depth of 2.4 metres, made watertight by a thick layer of bitumen. Though technically astonishing for its time, without doubt, the Great Bath was totally unadorned by carving or painting, so far as archaeologists can tell.

Yet Indus society, fed by crops watered by the great river and its many tributaries flowing from the Himalayas, was remarkably productive and sophisticated in other ways. For example, the Indus dwellers constructed ocean-going merchant ships that sailed as far as the Persian Gulf and the river-based cities of Mesopotamia, where Indus-made jewellery, weights, inscribed seals and other objects have been excavated, dating back to around 2500 BC. Mesopotamian cuneiform inscriptions refer to the Indus region by the name Meluhha, the precise meaning of which is unknown. The Indus cities' drainage and sanitation were two millennia ahead of those of the Roman empire; besides the Great Bath, they included magnificent circular wells, elaborate drains running beneath corbelled arches and the world's first toilets. The cities' well-planned streets, generally laid out in the cardinal directions, put to shame

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all but the town planning of the twentieth century AD. Some of their many personal ornaments, such as the necklaces of finely drilled, biconical carnelian beads up to 13 centimetres in length found in the royal cemetery of Ur in Mesopotamia, rival the treasures of the Egyptian pharaohs. Their binary/decimal system of standardized weights – consisting of stone cubes and truncated spheres – is unique in the ancient world, suggesting a highly developed economy. And the partially pictographic characters and vivid animal and human motifs of the tantalizing Indus script, inscribed on small seal stones and terracotta tablets, occasionally on metal, form ‘little masterpieces of controlled realism, with a monumental strength in one sense out of all proportion to their size and in another entirely related to it’, enthused the best-known excavator of the Indus civilization, Mortimer Wheeler.² Once seen, the seal stones are never forgotten – as witness the more than 100 differing decipherments of the Indus script proffered since the 1920s, some of them by distinguished academics such as the Egyptologist Flinders Petrie (not to mention many amateurs and cranks).

Indus archaeology has come a long way in almost a century. Nonetheless, it throws up many more unanswered fundamental



Indus seal stone showing a ‘unicorn’, a ritual offering stand and signs, made of steatite, from Mohenjodaro. The writing system is yet to be deciphered.

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questions than the archaeology of ancient Egypt and Mesopotamia (and China). A 'great cloud of unknowns . . . hangs over the civilisation', noted an Indus scholar, Jane McIntosh, in 2002.³ Moreover, although excavation continues in both Pakistan and India, less than 10 per cent of the just over 1,000 Mature-period settlements have been excavated. Important clues, including further inscriptions, unquestionably remain to be dug up, as has happened in the past two or three decades. But, given the already extensive excavation of the cities, it does not seem likely that new discoveries will solve all of the current questions about the Indus civilization. Therefore this book, like all books on the subject, must mix hard information from archaeology with informed speculation in trying to answer these questions.

In particular, was the civilization an indigenous development, apparently emerging from neighbouring Baluchistan, where there is ample evidence for village settlement at Mehrgarh as early as 7000 BC? Or was it stimulated by the growth of civilization in not-so-distant Mesopotamia during the fourth millennium BC? What type of authority held together such an evidently organized, uniform and widespread society, if it truly did manage to prosper without palaces, royal graves, temples, powerful rulers and even priests? Why does the Indus civilization offer no definitive evidence for warfare, in the form of defensive fortifications, metal weapons and warriors – a situation without parallel in war-addicted ancient Mesopotamia, Egypt and China, not to mention all subsequent civilizations? Was the Indus religion the origin of Hinduism? Or is the apparent resemblance of some Indus seal iconography and practices to much later Hindu iconography and practices, such as the worship of the god Shiva and the caste system, based on wishful thinking? Is the Indus language that is written in the undeciphered script (assuming only a single written Indus language) related to still-existing Indian languages, such as the Dravidian languages of south India or the Sanskritic languages of north India? Lastly, why did the Indus civilization decline after about 1900 BC, and why did it leave no trace in the historical record? The characters of the Indus script seem to have become indecipherable almost four thousand years ago with the civilization's decline.

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They certainly bear no resemblance to the next writing that appeared in India, after an enormous gap of a millennium and a half: the Brahmi and Kharosthi alphabetic scripts used to write the rock and pillar inscriptions of the emperor Asoka in the third century BC, which were modelled on an alphabetic script from West Asia.

Scores of archaeologists and linguists – from Europe, India and Pakistan, Japan, Russia and the United States – have suggested answers to these fascinating questions. But inevitably they have been obliged to speculate; there can be no overall consensus, for lack of sufficient archaeological evidence and because the Indus script is mute.

To complicate matters, some of the debates have acquired a partisan political edge. The discovery of the Indus civilization understandably promoted national pride during India's movement towards independence from British rule in the 1930s and '40s. Its first excavator, John Marshall, started the trend in 1931 by claiming that 'the religion of the Indus peoples . . . is so characteristically Indian as hardly to be distinguishable from living Hinduism.'⁴ The Indian nationalist leader Jawaharlal Nehru, before he became prime minister of independent India, noted, reasonably enough: 'It is surprising how much there is in Mohenjo-daro and Harappa which reminds one of persisting traditions and habits – popular ritual, craftsmanship, even some fashions in dress.'⁵ Since then, however, and especially since the 1980s, Hindu nationalists in India have gone much further, disregarding archaeological and linguistic evidence in support of an openly political agenda. They are keen to recruit the Indus civilization as the *fons et origo* of Indian civilization, untainted by outside influence. According to them, it was the originator of the language of the Vedic literature, Sanskrit. This they view as an indigenous language, rather than as one descendant among many languages of a proto-Indo-European language that originated in the Pontic-Caspian steppes of southern Russia during the fourth millennium BC and reached India in the second millennium BC via Indo-Aryan-speaking migrants from Central Asia – the dominant view among non-Indian scholars regarding the origin of Sanskrit. They also view the Indus civilization as the originator of an early form of Hinduism. Thus, the Hindu nationalists promote

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the Indus civilization as the source of a continuous Indian identity dating back more than five millennia.

In the late 1990s certain Indian historians wishing to rewrite school textbooks at the behest of India's new Hindu nationalist government, appealed to a new book, *The Deciphered Indus Script*, written by two Indians with some linguistic and scientific credentials. Its authors, N. Jha and N. S. Rajaram, made astounding claims, announced to the Indian press in 1999 and published in 2000. The Indus script was said to be even older than had been thought (the mid-third millennium BC), dating back to the mid-fourth millennium BC, making it the world's oldest readable writing, pre-dating Mesopotamian cuneiform and Egyptian hieroglyphs. It apparently employed some kind of alphabet, two millennia older than the world's earliest-known alphabets from the Near East. Perhaps most sensational of all, at least for Indians, the Indus inscriptions were supposedly written in Vedic Sanskrit; one of them was found to mention a crucial Vedic river, the Saraswati, albeit obliquely ('Ila surrounds the blessed land').⁶ This river, highly revered in the Rigveda, is today not visible above ground as a single stream, but is nevertheless known from ground surveys to have been a major river during the Indus civilization. Surveys on the Pakistani side of the India/Pakistan desert border region conducted in the 1970s and after have traced much, though not all, of the Saraswati's former course, part of which flowed in parallel with the Indus rather than as its tributary. In the course of their surveying, archaeologists (led by Mohammed Rafique Mughal) stumbled upon close to two hundred settlements from the Mature period of the Indus civilization clustering along the ancient course of the Saraswati (almost all of which, including a city, Ganweriwala, await excavation).

Providential further support for the Hindu nationalist view seemed to come in the form of an excavation photograph from the 1920s showing a broken Indus seal inscription depicting the hindquarters of an animal, accompanied by four characters. Jha and Rajaram claimed that the animal was a horse, as shown in a 'computer-enhanced' drawing published by them; and that the four characters could be read, in Vedic Sanskrit, as '*ar ko ha as va*', which they translated as 'Sun indeed like the horse'.⁷ The authors

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translated another Indus inscription, which was discovered in 1990 in Gujarat and is generally regarded as some kind of monumental signboard, as: 'I was a thousand times victorious over avaricious raiders desirous of my wealth of horses!'⁸

But horses were unknown to the Indus civilization, almost all scholars had long maintained, since they were not depicted among the many motifs of animals (including buffaloes) on its seals and in its art, and no horse bones had been discovered by excavators – or at least no bones that convinced zooarchaeologists specializing in horse identification. The bones of the wild ass (onager) are known in the Indus valley, but not horse bones. The horse is generally thought to have arrived in northwestern India only with the horse-drawn chariots of the Indo-Aryan-speaking migrants during the mid-second millennium BC; certainly, in later Indian history, armies imported their horses from outside India. Horses are, however, abundantly mentioned in the Vedic literature. If, after all, horses did feature in the Indus civilization, as Jha and Rajaram claimed, was this not important evidence that the creators of the Indus inscriptions and the authors of the Vedic literature were one and the same – indigenous – horse-riding people?

The arguments in *The Deciphered Indus Script* would probably have been ignored by most people, as had happened with all but a handful of the Indus script decipherments announced since the 1920s by both Indian and non-Indian scholars. But on this occasion, because of their potentially explosive educational and political implications, the book attracted widespread public attention, both in South Asia and even internationally.

Within months, the authors' claims of a successful decipherment were easily demonstrated to be nonsense in articles for national news magazines in India written by scholars, notably Iravatham Mahadevan, the leading Indian expert on the Indus script, Asko Parpola, the leading non-Indian expert, and Michael Witzel, a professor of Sanskrit at Harvard University, with his collaborator Steve Farmer. Mahadevan termed the so-called decipherment 'completely invalid . . . a non-starter'.⁹ Witzel and Farmer's chief article was entitled 'Horseplay in Harappa'.¹⁰ They demonstrated beyond question, even for non-specialists, that the supposed Indus alphabet was so absurdly flexible

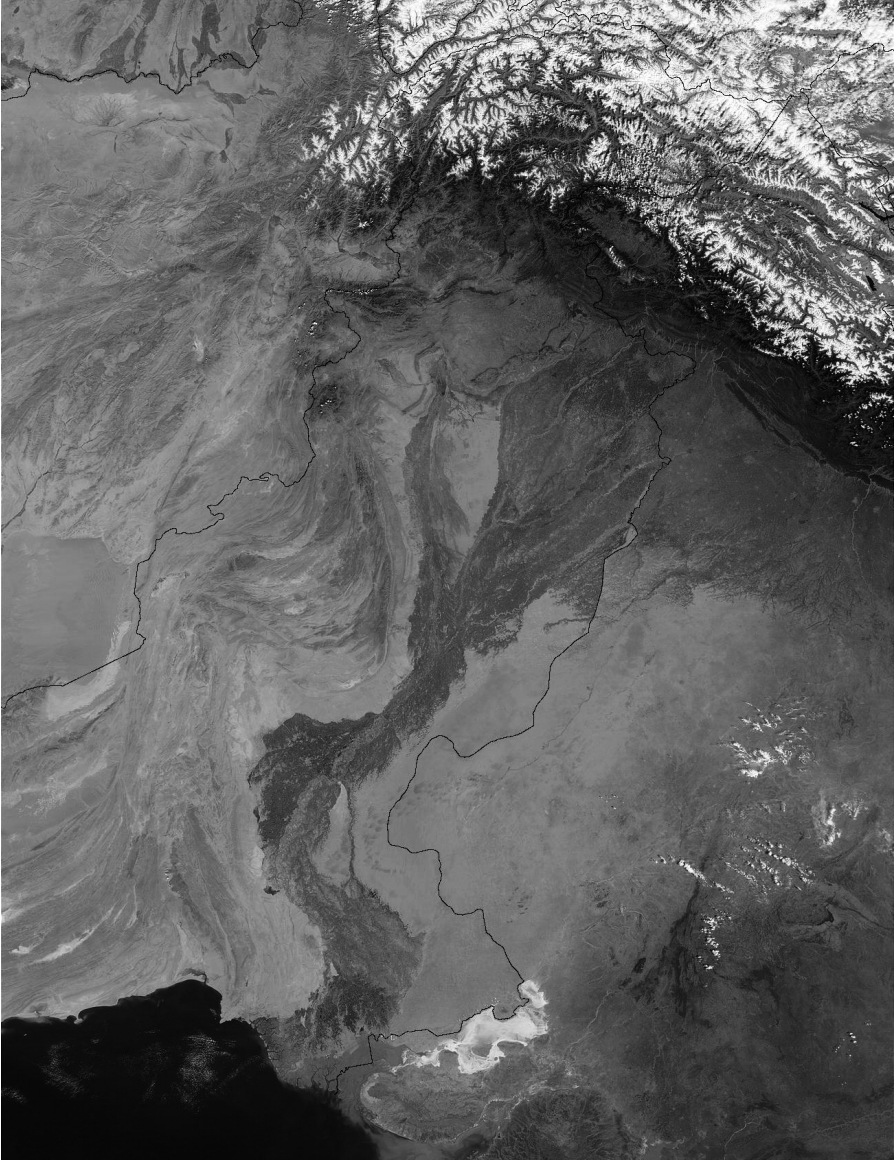
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that it could be manipulated to produce almost any translation that the book's authors might desire. Furthermore, the supposed Indus valley horse was revealed – after comparison of the broken seal photograph with photographs of various similar-looking, but more complete, Indus seals – to be a 'unicorn' bull of a type commonly depicted in the inscriptions, not a horse. The so-called horse had to be a hoax image created by one of the authors, an Indian-born, U.S.-trained engineer with experience of computer drawing (and a taste for Hindu nationalist propaganda), as he more or less admitted under questioning by Indian journalists.

Yet, despite the scholarly exposé of this particular book's intellectual bankruptcy, the new Indian government-school textbooks introduced in 2002 referred to 'terracotta figurines of horses' in the 'Indus-Saraswati civilization', and continued to do so until the fall of the Hindu nationalist government in 2004, when the textbooks were withdrawn by the incoming government. More important, the idea that the language of the Indus civilization is Sanskrit, and of local origin, continues to enjoy wide support in India, including from some archaeologists and linguists. Until such time as the Indus script is convincingly deciphered, which will not happen without major new discoveries of inscriptions, this heated debate about the Indus civilization's true relationship with the later Vedic culture will surely continue.

That said, the cultural importance of the former Saraswati river, unrecognized in the 1920s, is beyond dispute. In this respect, the Indus or 'Indus-Saraswati' civilization (many archaeologists prefer 'Harappan civilization', after its place of discovery) resembles ancient Mesopotamia, where civilization developed between two rivers, the Tigris and the Euphrates, rather than ancient Egypt, where civilization was the 'gift' of a single river, the Nile. However, the Indus geographical environment was more complex and varied than either Mesopotamia's or Egypt's: a fact that influenced the civilization's evolution more than is obvious from the evidence of its cities alone.

Whereas the city-states of Mesopotamia – ancient Greek for the land 'between two rivers' – remained focused on the areas watered by these rivers, the Indus cities (or perhaps they were city-states)



Satellite view of the Indus river showing its course from the Himalayas to the Arabian Sea. The added line in the centre-right section marks the international boundary between Pakistan and India.

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exerted direct control over a far wider area, often through large and small settlements, which supplied the cities with metals such as copper, semi-precious stones and minerals, and timber. Beyond the alluvial plains of the Indus valley, this area may be divided into four regions: the western mountains and piedmont border zone, the mountain ranges to the north, the eastern border zone and Thar (Great Indian) desert, and peninsular India.

The regions west of the Indus valley are the highlands and plateaus of Baluchistan and along the rugged Makran coast, where an Indus settlement has been excavated at Sutkagen-dor near the modern border with Iran. In the mountainous areas of northern Pakistan, Afghanistan, Tajikistan and Uzbekistan, the civilization established a far-flung settlement, Shortugai, on the northern border of Afghanistan with Tajikistan beside the Oxus river, in order to obtain lapis lazuli from this sought-after mineral's most important mine. To the east of the Indus valley, the ancient Saraswati river was bordered by the Thar desert, which today covers the Indian states of Rajasthan and parts of Punjab, Haryana and Gujarat – all of which contain settlements of the Indus civilization extending almost as far as the foothills of the Himalayas (in the northeast) and the Aravalli ranges (in the east); from the latter mountains the Indus cities obtained steatite (for making seal stones), copper and other metals. East of the Indus delta, in what is now part of western Gujarat, lay the coastal region of Kutch, consisting of many islands in the third millennium BC, unlike today's huge salt marsh, the Rann of Kutch, and the peninsula of Saurashtra – both of which contain many Indus civilization settlements, including Dholavira and a port, Lothal, from which ships traded with Mesopotamia. Beyond Saurashtra, on the Indian peninsula proper, the settlements peter out; yet the Indus civilization obtained large quantities of agate and carnelian from the mines of Rajpipla in hilly eastern Gujarat and possibly gold from far-distant south India.

The climate of this vast area would mostly have been beneficial to agriculture, if we permit ourselves to judge by today's climate. Two different weather systems currently dominate, and sometimes overlap. In the western highlands a winter cyclonic system operates and in the peninsular regions a summer monsoon system – both

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of which produce rainfall. If one of these systems fails to deliver rain, the other one will almost always do so. Famine is therefore unknown in the Indus valley.

There are six traditional seasons: spring (from the end of February to March), summer (April, May and June), the rainy season (from the end of June to September), autumn (October to November) and the winter and the dewy season (from November to February). These create two basic growing seasons. In winter and the dewy season, archaeological evidence shows that the ancient farmers grew barley, wheat, oats, lentils, beans, mustard, jujube and linen; in summer and the rainy season, millet, cotton, sesamum, melons, jute, hemp, grapes and dates. Rice, which is native to parts of the subcontinent, was probably introduced to the Indus valley as a cultivated crop only towards the end of the Mature period of the civilization, perhaps around 2000 BC.

However, the six seasons, and the two growing seasons, show many variations depending on the region. For instance, on the southern Indus river in Sindh, around Mohenjo-daro, the rainfall is often little or nothing, yet the land is rich in silt deposited by the floodwaters of the river, which compensates for the lack of rainfall. Further north, in the Punjab, where Harappa is located, rain coming from the western highlands in winter and the dewy season can produce, in the spring, fertile harvests and vast grazing. In the highlands themselves, where this winter rain falls as snow, the growing season comes later, with planting in spring and harvesting in summer.

'The juxtaposition of mountains, river plains and coasts provides a unique pattern of seasonally available resources and abundant raw materials that is quite different from the situation in either Mesopotamia or Egypt', notes Jonathan Mark Kenoyer, a key Indus researcher who is one of the recent excavators of Harappa.¹¹ This diversity of environment, climate and materials must have been vital to the civilization's prosperity. In ancient Egypt, the annual inundation of the land by the floodwaters of the Nile was the single crucial driver in agriculture, and could produce plenty or catastrophe, depending on its level. Irrigation canals were necessary in Egypt to extend the reach of the flood and to store water. In the

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Indus civilization, by contrast, there is no evidence for large-scale irrigation. Presumably, if a poor harvest happened to befall one Indus region, rescue was provided by another region with an abundant harvest, by transporting food via established trading networks.

But is it actually safe to assume that today's Indus valley climate applied five millennia ago? After the excavations in the 1920s, Marshall could not make up his mind on this question. In his chief excavation report, he called the climate of the Mohenjo-daro region 'one of the worst in India', with the temperature ranging from below freezing to some 50 degrees Celsius, bitterly cold winds in winter and frequent dust storms in the summer, and average rainfall of not more than 15 centimetres varied by occasional torrential downpours, in addition to clouds of sandflies and mosquitoes. In Marshall's view, 'it will be found hard to picture a less attractive spot than Mohenjo-daro today.'¹² He also noted that the historians of Alexander the Great reported a comparable Indus valley desiccation in the fourth century BC. Could this have developed during the preceding millennium, after the Indus civilization? As part of the evidence for possibly higher rainfall in the third millennium BC, Marshall observed that Mohenjo-daro's builders used kiln-fired, and hence more durable, bricks, rather than more friable, but much cheaper, sun-dried bricks. He also noted that some of the animals frequently depicted on the Indus seal stones, such as the tiger, rhinoceros and elephant – which are not found in the region today – are commonly found in damp, jungly country, unlike the lion, which prefers the dry zone and is not depicted on the seals. But Marshall concluded that none of this evidence was decisive. Kiln-fired bricks may simply have asserted the importance of certain excavated buildings or have been a symbol of luxury, while the disappearance of the tiger from Sindh occurred as recently as the late nineteenth century (probably partly as a result of a reduction in its habitat by increased animal grazing and the effects of big-game hunting). Opinions on Indus climate change remain divided today, after several inconclusive studies. A very recent study suggests there was an abrupt weakening of the summer monsoon about 2100 BC. However, many scholars, including Kenoyer, think that temperature,

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‘A satanic mockery of snow’, Mohenjo-daro. Salination is damaging the bricks, and thereby destroying the excavations, of some Indus valley sites.

rainfall and monsoon patterns have not changed much since the time of the Indus civilization.

Another change to the southern Indus valley was the gradual introduction from the late nineteenth century of artificial control of the river with embankments and dams – notably the barrage completed at Sukkur in northern Sindh in 1932 – and the construction of extensive irrigation canals. These helped farmers, but not archaeologists. Within decades, the over-irrigated land, including the ruins of Mohenjo-daro (now no longer washed by annual Indus floods), became impregnated with salts commonly known as salt-petre. The slightest rainfall would convert the anhydrous salt into the hydrous form, whitening the landscape with ‘a brittle shining crust that crushes beneath the step like a satanic mockery of snow’, noted an archaeologist at Mohenjo-daro in the 1940s.¹³ This process of salination was accompanied by a more than 300 per cent increase in volume of the salt: an expansion disastrous for bricks, which caused the excavated ruins to start crumbling into dust within a few years. At Harappa, there was a parallel destruction of the site by railway contractors and local people in search of bricks for construction purposes. It is fortunate indeed that the forgotten cities of Mohenjo-daro and Harappa were discovered before the Indus civilization became utterly lost to the world, as we shall now see.