





Steatite seal from the Indus valley, c.2500 BC. The script is still undeciphered.

LOST AND FOUND

Though it may be the equal of ancient Egypt and Mesopotamia, the civilisation that arose in the Indus valley around 5,000 years ago was only discovered in the early 20th century. **Andrew Robinson** looks at what we know about this extraordinary culture and how much more there is to unearth.

PERHAPS THE MOST FAMOUS STATEMENT about the Indus civilisation is the opening paragraph of an article in the *Illustrated London News* published in 1924 by John Marshall, director general of the Archaeological Survey of India: 'Not often has it been given to archaeologists, as it was given to [Heinrich] Schliemann at Tiryns and Mycenae, or to [Aurel] Stein in the deserts of Turkestan, to light upon the remains of a long-forgotten civilisation. It looks, however, at this moment, as if we are on the threshold of such a discovery in the plains of the Indus.'

Subsequent Indus excavations certainly made an impression on the young Kenneth Clark. In *Civilisation*, Clark, while pondering the non-western beginnings of civilisation two-and-a-half millennia before the classical Greeks, observed in 1969:

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 ... but also in India a spiritual enlightenment that has perhaps never been equalled.

Ancient Egypt and ancient Mesopotamia are familiar to the world, because of their art, architecture and royal burials and extensive ►

INDUS CIVILISATION

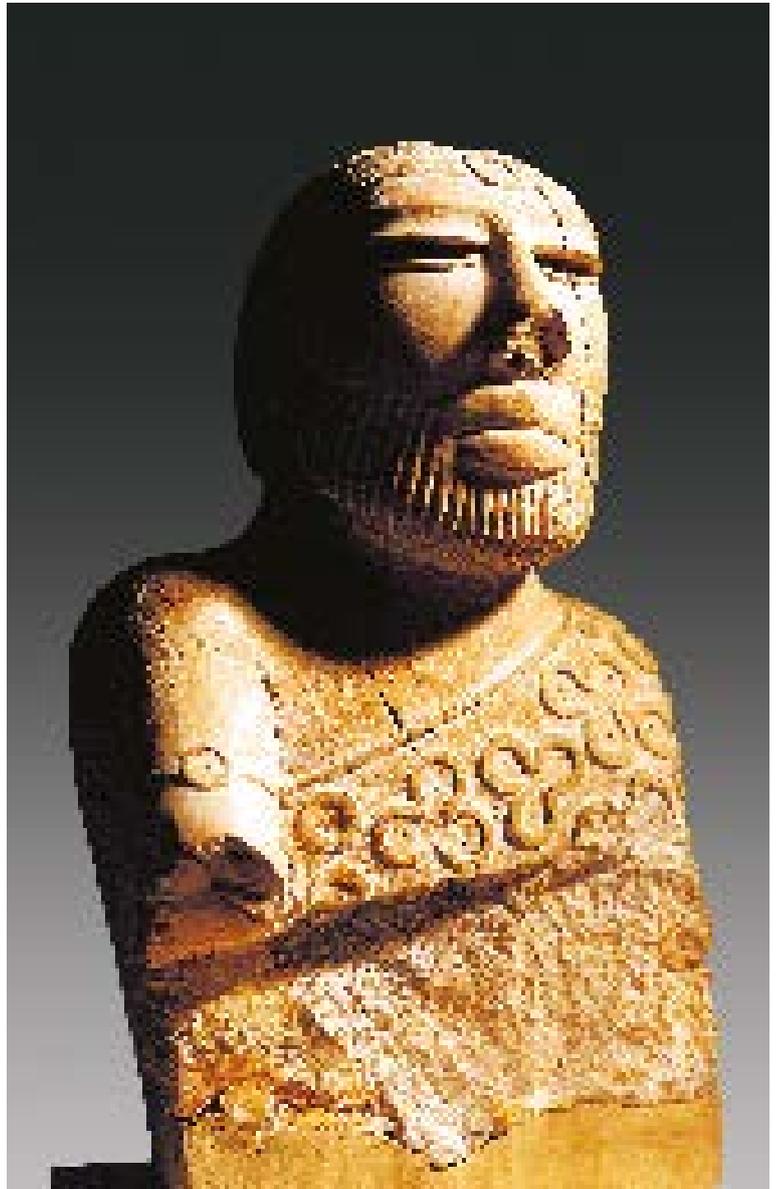
references in Greek and Roman literature. So, of course, are the glories of classical Greece and, perhaps less so, the spirituality of Buddhist India and the theology of early Hinduism recorded in the Vedic literature, which was composed in the period 1500-500 BC. Not so familiar, however, is the civilisation that appeared in the Indus valley in the first half of the third millennium BC.

The Indus civilisation was, in its unique way, as extraordinary as those of Mesopotamia and Egypt. But it disappeared around 1800 BC and left no direct legacy in the Indian subcontinent. Neither Alexander the Great, who invaded India from the north-west in the fourth century BC, nor Asoka, the great, Buddhist-oriented emperor who ruled most of the subcontinent in the third century, was even dimly aware of the Indus civilisation; nor were the Arab, Mughal and European colonial rulers of India. Indeed, the Indus civilisation remained altogether invisible until the 1920s. Ever since, scholars have been trying to elucidate its mysteries, including the meanings encoded in its aesthetically exquisite but stubbornly undeciphered writing system, and thereby to elevate this most significant of 'lost' civilisations to the position it deserves, both in the history of South Asia and that of the world.

ARCHAEOLOGISTS HAVE IDENTIFIED well over a thousand settlements belonging to the Indus civilisation's 'Mature' phase (2600-1900 BC), of which less than ten per cent have been excavated. They cover at least 800,000 square kilometres of what in 1947 became Pakistan and India, an area approximately a quarter of the size of western Europe, with an original population of around one million people (the same as that of ancient Rome at its height). This was the most extensive urban culture of its time, about twice the size of its equivalent in Mesopotamia or Egypt. Most Indus settlements were villages, but some were towns and at least five were substantial cities. The two largest cities, Mohenjo-daro (a Unesco World Heritage Site) and Harappa, located some 600 kilometres apart beside the Indus river and one of its many tributaries, were comparable with cities such as Ur in Mesopotamia and Memphis in Egypt.

These cities, despite their excellent brick-built construction, do not boast pyramids, palaces, temples, statues and graves or hoards of gold like those found in Egypt and Mesopotamia. Their grandest building, the so-called Great Bath at Mohenjo-daro, is the world's earliest public water tank, with two wide staircases on 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 impressive for its time, the Great Bath was totally unadorned by carving or painting, at least so far as we know.

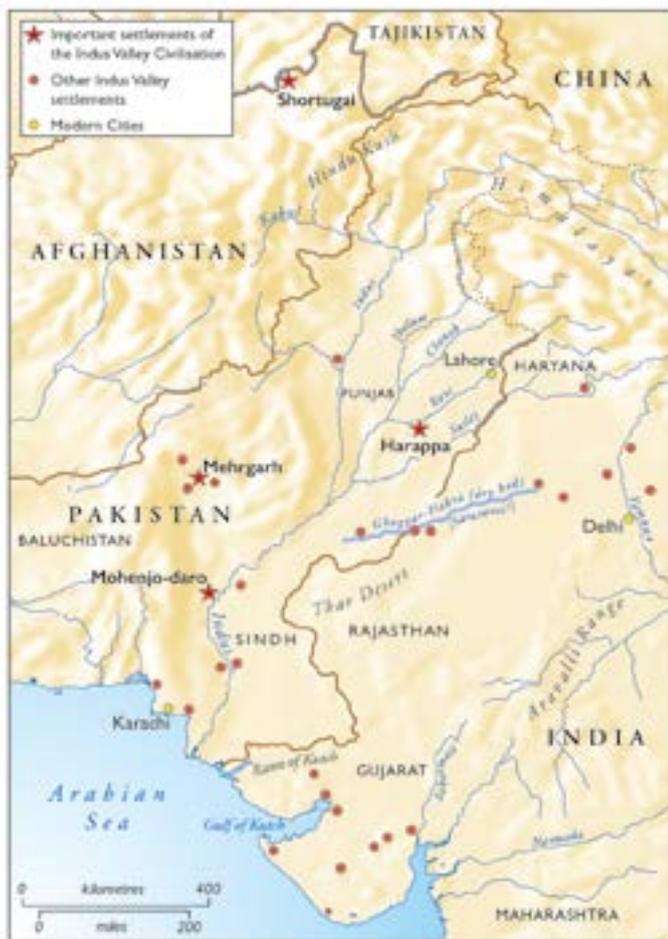
Yet, Indus society, fed by crops watered by the great river and its many tributaries flowing from the Himalayas, was remarkably productive and sophisticated in other ways. The Indus dwellers constructed ocean-going merchant ships that sailed as far as the Persian Gulf and the river-based cities of Mesopotamia, where Indus 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' advanced drainage and sanitation was two millennia ahead of that of the Roman Empire; besides the Great Bath, it included magnificent circular wells, elaborate drains running beneath corbelled arches and the world's first known toilets. Their well-planned streets, generally laid out in the cardinal directions, put to shame all but the town planning of the 20th century. Some of their personal ornaments, such as the necklaces of finely drilled, biconical carnelian



The 'Priest King' from Mohenjo-daro, 2600 BC, Sindh province, Pakistan.

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 standardised stone weights is unique in the ancient world, suggesting a highly developed economy. The partially pictographic characters and animal and human motifs of the tantalising 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', observed the best-known Indus excavator, Mortimer Wheeler. Once seen, the seal stones are never forgotten; witness the more than a hundred differing decipherments of the Indus script proffered since the 1920s by scholars, some of them highly distinguished academics such as Flinders Petrie (not to mention numerous amateurs and cranks).

INDUS VALLEY archaeology has come a long way in almost a century. Nonetheless, it throws up many more unanswered fundamental questions than the archaeology of ancient Mesopotamia and Egypt (and China). Was the civilisation a wholly indigenous development, apparently emerging from Baluchistan, where there is ample evidence of village settlement at Mehrgarh as early as 7000 BC? Or was it influenced



Settlements of the Indus valley civilisation located in modern Pakistan, India and Afghanistan.

by the growth of civilisation in not-so-distant Mesopotamia during the fourth millennium BC? What type of authority held together such an evidently organised, 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 civilisation offer no definite evidence of warfare, in the form of defensive fortifications, metal weapons and warriors: a situation without parallel in war-addicted ancient Mesopotamia, Egypt and China? 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? Does its seeming austerity have any relationship with Buddhism? Is the Indus language that is written in the script (assuming only a single language) related to still-existing Indian languages, such as the Dravidian languages of south India or the Sanskrit language of north India? Lastly, why did the civilisation decline after about 1900 BC and why did it leave no trace in the historical record? The characters of the script seem to have become indecipherable almost 4,000 years ago with the civilisation's decline. They certainly bear no resemblance to the next writing that appeared in India, after an enormous gap of ►

Why does the Indus civilisation offer no definite evidence, in the form of defensive fortifications, metal weapons and warriors?



Excavations at Mohenjo-daro, topped by a much later Buddhist stupa.

INDUS CIVILISATION



Above: jewellery of the Indus civilisation, c.3000 BC.
Right: a jade and gold necklace, with pendants in agate and jasper, c.2000 BC.



a millennium and a half: the Brahmi and Kharosthi alphabetic scripts that were used to write the rock and pillar inscriptions of Asoka.

Scores of archaeologists and linguists, from Europe, Russia, India and Pakistan, Japan and the United States, have suggested answers to these fascinating questions. 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 intellectual debates have acquired a partisan political edge. The discovery of the Indus civilisation naturally promoted national pride during India's movement towards independence from British rule. Its first excavator, 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'. India's future prime minister, Jawaharlal Nehru, enthused in 1946 after visits to Mohenjo-daro:

Astonishing thought: that any culture or civilisation should have this continuity for five or six thousand years or more ... 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.

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 civilisation as the *fons et origo* of Indian civilisation: the originator of the language of the Vedic literature, Sanskrit, which they view as an indigenous language rather than as one descendant among many of a proto-Indo-European language that originated outside the subcontinent. They also view the Indus civilisation as the begetter of an early form of Hinduism untainted by foreigners, such as the Aryans, who are generally supposed by scholars to have migrated into India from the north-west speaking an early form of Vedic Sanskrit. Thus, Hindu nationalists promote the Indus civilisation as the source of a continuous Indian identity dating back more than five millennia.

AROUND 2000, CERTAIN INDIAN HISTORIANS wishing to rewrite school textbooks at the behest of India's new nationalist (BJP) government, appealed to a new book, *The Deciphered Indus Script*, written by N. Jha and N. S. Rajaram, which made astounding claims. The Indus script was apparently even older than had been thought, dating back to the mid-fourth millennium, which would make it the world's oldest readable writing, predating Mesopotamian cuneiform and Egyptian hieroglyphs. It employed some kind of alphabet, two millennia older than the world's earliest-known alphabets from the Near East. Most sensationally of all, at least for Indians, its inscriptions could be read in Vedic Sanskrit; one of them was found to mention a crucial river, the Saraswati, albeit obliquely. This river, highly revered in the Rigveda, is

not visible today above ground as a single stream, but is known to have been a major river during the Indus civilisation. Surface 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, Pakistani archaeologists stumbled upon close to 200 settlements from the Mature phase of the Indus civilisation clustering along the Saraswati (almost all of which, including a city, await excavation).

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'.

But horses were unknown to the Indus civilisation, almost all scholars had long maintained, since they were not depicted among the many animals (including buffaloes) shown on its seal stones and in its art and no horse bones had been discovered by excavators; or at least no bones that convinced zooarchaeologists specialising 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 north-western India only with the horse-drawn chariots of the Aryans 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 civilisation, was this not important evidence that the creators of the Indus

The supposed Indus alphabet was so absurdly flexible that it could be manipulated to produce almost any translation

inscriptions and the authors of the later Vedas were one and the same indigenous people?

Within months, *The Deciphered Indus Script* was demonstrated to be nonsense in articles for national news magazines in India written by scholars, notably Michael Witzel, a professor of Sanskrit at Harvard University, with his collaborator Steve Farmer. In 'Horseplay in Harappa', Witzel and Farmer demonstrated beyond question, even for non-specialists, that the supposed Indus alphabet was so absurdly flexible that it could be manipulated to produce almost any translation that the book's authors might desire. Furthermore, the supposed Indus Valley horse was shown, after comparison of the broken seal photograph with photographs of various similar-looking but more complete Indus seals,



Top: seal impression on a clay tag with an elephant motif from Lothal, c.2000 BC.
Above: 'proto-Shiva' seal impression from Mohenjo-daro of a figure in yogic posture.

to be a 'unicorn' bull of a type commonly depicted in the inscriptions. The horse image had to be a hoax created by one of the authors, an engineer with experience of computer drawing (and a taste for Hindu nationalist propaganda), as he more or less admitted under questioning by Indian journalists.

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

THAT SAID, the importance of the former river Saraswati, unrecognised in the 1920s, is beyond dispute. In this respect, the Indus civilization (some archaeologists prefer 'Harappan civilisation') resembles ancient Mesopotamia, which developed between two rivers, the Tigris and the Euphrates, rather than ancient Egypt, where civilisation was the 'gift' of a single river, the Nile. Its geographical environment was, however, more complex than either Mesopotamia's or Egypt's: a fact that influenced its evolution

more than is obvious from the evidence of its cities alone.

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), by contrast, exerted direct control, through both large and small settlements, over a far wider region, which supplied them with metals such as copper, semi-precious stones and minerals and timber. Beyond the alluvial plains of the Indus valley, this region may be divided into the western mountains and piedmont border zone, the mountain ranges to the north, the eastern border zone and Thar desert and peninsular India. The furthest-flung settlement, Shortugai, is on the northern border of Afghanistan with Tajikistan beside the river Oxus; it was established in order to obtain lapis lazuli from this sought-after mineral's only known mine.

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 dominate today and sometimes overlap. In the western highlands a winter cyclonic system operates and in the peninsular regions a summer monsoon system, both 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.

'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 Mark Kenoyer, a recent excavator of Harappa. This diversity of environment, climate and materials must have been key to the civilisation's prosperity. In ancient Egypt the annual inundation ▶

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Bronze figure of a young dancer from Mohenjo-daro, c.2500 BC.



Terracotta figure with a headdress of flowers, rings and a belt, c.3000 BC.



of the land by the floodwaters of the Nile was the single crucial factor in agriculture; irrigation canals were vital in Egypt to extend the reach of the flood and to store water. In the Indus civilisation, by contrast, there is no evidence of large-scale irrigation. Presumably, if there happened to be a poor harvest in one Indus region, rescue was provided by another region with an abundant harvest, by transporting food via established trading networks.

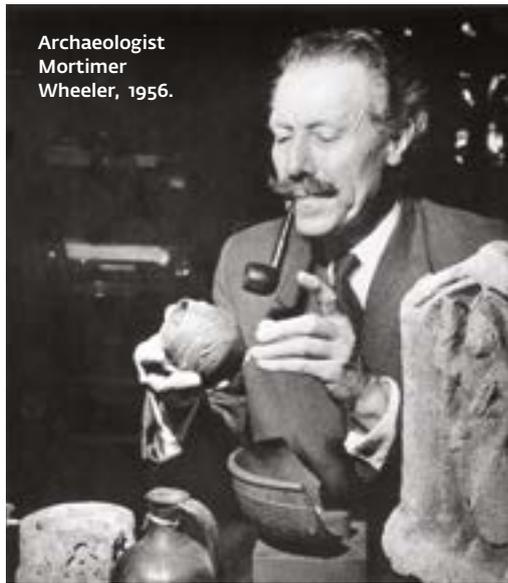
IT IS SAFE TO ASSUME that today's Indus valley climate was the same five millennia ago? After the 1920s excavations, Marshall could not make up his mind on this question. In his chief excavation report he calls the climate of the Mohenjo-daro region 'one of the worst in India', with the temperature ranging from below freezing to some 50° Celsius, bitterly cold winds in winter, 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. He also notes that historians of Alexander reported

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a comparable desiccation in the fourth century BC. Could this have occurred during the preceding millennium, after the Indus civilisation? 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. Furthermore, some of the animals frequently depicted on the Indus seals, 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



John Marshall (fourth from right, front row), director general of the Archaeological Survey of India with his wife, officers and staff soon after they began the excavation of Mohenjo-daro, 1925.



Archaeologist Mortimer Wheeler, 1956.

is not depicted on the seals. Yet Marshall concluded that none of his evidence was decisive. Kiln-fired bricks may simply have asserted the importance of certain excavated buildings or been a symbol of luxury, while the disappearance of the tiger from Sindh occurred as recently as the late 19th century (partly as a result of a reduction in its habitat by increased animal grazing and the effects of big-game hunting). Opinion on Indus climate change remains divided today, after several inconclusive studies. A recent one suggests there was an abrupt weakening of the summer monsoon around 2100 BC. Many scholars, however, including Kenoyer, think that temperature, rainfall and monsoon patterns have not changed much since the time of the civilisation.

Another late 19th-century change to the southern Indus valley was the gradual introduction of artificial control of the river with embankments and dams 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 com-

monly known as saltpetre. 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 archaeologist Stuart Piggott at Mohenjo-daro in the 1940s. The salination was accompanied by a more than 300 per cent increase in volume of the salt: an expansion disastrous for bricks, which caused the ruins to start crumbling into dust within a few years. At Harappa, there was a parallel destruction by 19th-century railway contractors and local people in search of bricks. It is fortunate indeed that the forgotten cities of Mohenjo-daro and Harappa were discovered in the 1920s, before they were utterly lost.

TODAY, THE INDUS SITES ARE AT RISK from international politics, too. Since 1947, the fraught border between Pakistan and India has divided the Indus civilisation, both geographically and academically. Moreover, Pakistanis do not generally regard it as a key part of their heritage, perhaps in somewhat the same way that present-day Egyptians do not really relate to the civilisation of the ancient Egyptians. Indians, whether Hindu nationalists or not, have generally preferred to devote their attention to the Vedic culture and the subsequent epics of Hindu civilisation. Hence the following lament by Indian archaeologist Dilip Chakrabarti in his 2004 academic collection, *Indus Civilization Sites in India: New Discoveries*:

An insignificant position in the curriculum and hopelessly disjointed writings are characteristic of the Indian academic approach to this civilisation. And yet, there ought to be a far more focused interest in this largest of Bronze Age civilisations of the third millennium BC, which is firmly rooted in the Indian subcontinent and has contributed fundamentally to the formation of India as we know it today.

One hopes that in decades to come, new excavations in Pakistan, India and Central Asia will lead to new revelations, including new inscriptions – even, perhaps, a widely accepted decipherment of the Indus script. There are certainly fascinating problems to solve. One is drawn to the Indus civilisation's apparent success in combining artistic excellence, technological sophistication and economic vigour with social egalitarianism, political freedom and religious moderation. If further excavation and research were to show this attractive picture to be historically accurate, it might be a hopeful sign for the future of humankind.

Andrew Robinson is the author of *The Indus: Lost Civilizations* (Reaktion Books, 2015).

FURTHER READING

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