Decoding the INDUS VALLEY SCRIPT
Category : November 1990
Published by Anonymous on Nov. 01, 1990

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The language of Hinduism's and one of man's earliest civilizations remains an unbroken code, but serious efforts continue to attempt cracking it. The Vedas are the earliest record of Hindu culture. Archaeologists, on the other hand, believe that the Indus Valley cultural tradition represents the beginnings of the Indian civilization. This tradition has been traced back to pre-6000 BCE in remains uncovered in Mehrgarh and other sites. It reached its flowering from 2600-1800 BCE, called the Harappan age, when several cities and towns were established and writing used. The Indus empire covered the entirely of northwest India with outposts as far south as Sri Lanka and the Maldive Islands. It continued in a state of decline to 1000 BCE and perhaps later.

The Harappans were a literate people. However, the surviving records of their writing are mainly carvings on seals, small pieces of soft stone, and copper tablets. The total number of inscribed objects is around 3,000, but many of these are duplicates. The number of different signs used is close to 400. Most texts are very brief, the average length being 5 signs, and the longest text is 14 signs long. The primary purpose of the seals was perhaps to mark ownership and the copper tablets may have served as amulets. The impressions of the seal are likely to have served as signatures. The pictorial motifs that accompany the writing including the humped bull, buffalo, elephant, tiger, rhino, crocodile, antelope, fish, tortoise and so on. Geometric designs include the swastika, spoked wheel, and a circle with a dot. As a trading people, the Harappan Hindus roamed and sailed far. Their seals have been recovered in the Tigris/Euphrates river civilization of Mesopotamia (present day Iraq).

For a long time the study of the Harappans was straightjacketed by the biblical chronology fitted on Indian history by 19th century European scholars. This has been invalidated by archaeological discoveries that show a continuity in the culture

of the Harrapans and the later Hindus.

About ten years ago my research led me to certain questions about the history of early Hindus science. I was intrigued by the amazing complexity and sophistication of Panini's famous grammar of the Sanskrit language that goes back a least to 500-600 BCE. The popular accounts of the development of science in India could not explain how this grammer was needed to clear up this confused situation was to go to the earliest evidence available for which dating is well established. This leads us back to the Harappan or Indus writing of the third millennium BCE, which in turn belongs to an earlier tradition that arches back to the Mehrgarh excavation of 7000 BCE. During the mid-1980's there were several popular theories about the nature of this Indus writing but, incredibly, no one had tried to scientifically relate the Indus signs to the later Brahmi - first script the evolved for writing Sanskrit - alphabet of India (500 BCE). This was despite the fact that certain inscriptions is Brahmi looked almost identical to Indus characters. The earliest known stone-etched writings in Brahmi are from 300 BCE, but the Upanishads from the era of 700 BCE mention the art of writing Sanskrit - probably in Brahmi.

The absence of a scientific study of the two scripts was due to the influential view that Aryans could not have been present in India before the arrival of the Indo-Europeans in Greece. So it was taken as axiomatic that the Indus script could not be Indo-European. But no hard evidence in support of an invasion of India by the Aryans has been found.

By going to computer-created concordances of Indus and Brahmi script, my analysis revealed obvious connections between the two scripts that could not be explained as arising out of chance. Such an analysis is possible since letters in a scripts occur with different probabilities. These probabilities may also be characteristic of the language used. Thus for English e occurs about 12 percent of the time followed by t at 10 percent, a and o at 8 percent, and so on. At the other end of the spectrum q and x are at about 0.2 percent and z at 0.1. In fact such differences in frequencies make it possible to break script ciphers. That is how Sherlock Holmes solves the mystery of the figures of dancing men in a famous story. My study showed that the most frequent letters of Indus and Brahmi looked almost identical and were also in the same order of frequency.

Next I turned to the structure of the inscriptions. These are generally only about less than 10 letters long and there is other evidences that suggests they are often

proper names indicating possession. Such indications are made by grammatical case endings. Thus in English, adding an s to a name shows ownership. For example, David's means ownership by David. The genitive case-ending in Sanskrit is often sya or sa (like English) and this is often seen in these inscriptions. This suggests that the Indus language is likely to have been Sanskritic. The sign value for the case-ending was obtained independently through frequency considerations. Such independent cross-checking is absolutely essential in decipherments.

In 1934 G.R. Hunter conducted a structural comparison of the Indus texts and concluded that Brahmi was derived from Indus. Another investigator - Mitchiner - in the late 1970's studied the Indus case-endings and judged that they ruled out Dravidian as the language source, a popular theory for many decades. He too noted that the Indus script had distinct features the could indicate ancestry to Sanskrit.

A breakthrough came with the translation of a well known Indus sign that was read as sapta sindhu, "land of 7 rivers," based on reference in Sumerian literature. Building on this and my own comparisons, I turned to specific inscriptions for further checks. Using my Indus Brahmi theory the same sign as mentioned above is also read as sapta sindhu. Following these clues another well-known inscription [same sidebar] may read dhvajam indra mitra varunasya. The names of Vedic worlds.

Many Indus signs are numerals and could have been used in some bookkeeping. I now analyzed Indus numerals and was able to derive the signs for 5 and 10; the other units were simply represented by the corresponding number of vertical strokes. I found that the sign for 10 was a fish which became the Brahmi form as well.

The demonstration that Indus and Brahmi are related and the likelihood that the Indus language was Sanskritic has profound implications for understanding our ancient Hindu history. Now that the board nature of the Indus script appears to have become clear, detailed examination of the inscriptions may lead to names of kings or places. Such analysis is in progress. There is also the need to increase the treasure of Indus seals and other writing materials by further excavations at old sites and searches for new ones.

Others Detectives

Out in the dry-cracked earth of the Sind desert region of India/Pakistan, the 6,000-years-old remains of one of two great Indus Valley cities spread out like the bones of an extinct dinosaur. This metropolis is now called Harappa. We don't know what its 1000,000 citizens - the earliest known Hindus - called it.

When the Indus Valley empire expired some 3,000 years ago, it died in a haze of mysteries. Among the most tantalizing are the beautiful, pictogram-like script characters that appear etched or raised in an abundance of small seals and stone placards. Unfortunately, the seals are the only source of the script, and these are short statements, sort of like license plates. Unlike Egyptian hieroglyphics or Mesopotamian cuneiform script which showed up on long wall documents or clay tablets, the Indus script has no lengthy examples, possibly because the primary Indus writing medium was perishable. If there were such documents, and if the Indus code was broken, we would be looking at a whole new set of Hindu scripture, pre-dating the Vedas. But the Indus script has yet to be categorically deciphered. It is the secret hold out from the ancient alphabets.

In the early 1800's a prodigal French linguist named Champollion puzzled out the elusive Egyptian hieroglyphic script. But his success turned on the famous Rosetta Stone. It carried a memorial translated into three scripts: early Egyptian hieroglyphs, Egyptian Coptic script and Greek. Knowing the Greek and Coptic, he could accurately cipher the hieroglyphs. Thus a base of translation was created.

So far no Rosetta Stone has shown up for the Indus script. Professor Kak is following a similar approach by comparing Brahmi, Sumerian and Egyptian and tying the Brahmi to Indus by matching forms. The field is wide open for professional and amateur linguists to interpret the enigmatic pictograms.

The oldest theory on the Indus language/script is that it is proto Dravidian (the distinct language group of South India: Tamil, Kannada, Telegu). This theory is based on the fact that in present day Baluchistan, a province of Pakistan that lies in the Indus Valley territory, a Dravidian dialect is completely isolated from the Indo-European languages now spoken in Pakistan and North India.

In 1965 Raj Mohan Nath, following up on a book he wrote in 1958 on the Indus script, published a small pamphlet stating that the Indus trident sign (with 5 prongs, not 3) combined with the fish sign was a name of Siva, "Great Fish." A Russian linguistic team working with statistical methods arrived at the same conclusion independently in the same year. This particular combination occurs 58 times in the then known Indus seals.

In 1969 computers for the first time were brought to bear on the script by a Finnish team. They followed the proto-Dravidian theory. Their conclusions echoed the Russians, and they, too, came up with Great Fish and Great Goddess as repetitive invocations.

In 1988 a Kerala man, K.K. Raman, declared he had solved the entire alphabet using a Dravidian model. He concluded the script was a grammar-based system with numerals from 0-9. Each sign was an "ideogram" with a meaning that changed as the signs were combined. He called it the "script of priests" and said it could be read from the left or from the right or in both directions.