

The Indus Civilization = Aryans equation: Is it really a Problem?

By

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At times, archaeology does record the sudden fury of floods, fires, earthquakes, volcanic eruptions and even human invasions, but mostly it betrays the gradual process of technological evolution. In a historical perspective, a geographical area becomes a cultural cauldron in which history mixes different incoming ingredients. Sometimes the signatures of the various cultural streams can be discerned; more often they commingle. Cultural influences use diverse means to travel: human migrations, invasions, religious monks, ancient seers and philosophers, as also missionary zealots. For example, Buddhism travelled all over Asia through monks and religious philosophers. Even Hinduism reached South East Asia through religious teachers. The Indonesian culture and religion have a strong Hindu substratum. Buddhism even today is a vibrant and living religion all over East and South-east Asia. It was through Buddhist monks that medical science and even zinc technology reached China.

The Indus Civilization (archaeologists prefer to call it Harappa Culture, after the site where it was first noticed) represents a glorious chapter in India's past and we have to bow to our Harappan ancestors for what they achieved in the IV-III millennia BCE, and for the rich cultural legacy they bequeathed. Does it really matter by what label we call them?

Besides the classical reports by Mackay, Marshall and Vats on Mohenjodaro and Harappa excavations, recent years have seen a plethora of books on Indus Civilisation. Unfortunately, the reports on the major excavations of the Harappans sites in India at Banawali, Dholavira, Kalibangan, and Rakhigarhi etc are yet to see the light of the day.

The Indus civilisation is remarkable for its uniformity and standardisation in weights, measures, ceramics, architecture, town planning and in arts and crafts, though there is variation in ceramics, town plans, and perhaps religious beliefs. This uniformity appears all the more imposing when one considers that the culture extended over more than a million sq. km, an area more than that of Pakistan today. Recent studies, however, are bringing out a good deal of regional variation too.

In a Third Millennium context, when communication and transport must have been difficult, the credit for unifying the north and west of the subcontinent goes to the Harappans. They were the first to achieve this unification of a society with so much of diversity. The location of their main metropolitan towns in a peculiar network of intersecting circles may have provided impetus for travel to these far-flung areas of the Harappan state. In later times, it was achieved by locating the main pilgrimage centres at

the farthest points of the country: from Amarnath and Badrinath in the north, Dwarka in the west, Puri in the east, to Rameshwaram in the south.

More enigmatic is the decline and devolution of the Indus Civilization and requires a multi-disciplinary approach to unravel this phase of India's past. I personally feel that the Aryan = Harappans is both a divisive and diversionary controversy. More important is the study of the complex processes of the multi-dimensional transformations that were taking place at the turn of the II Millennium BCE.

Lets now see what the Indus Civilization bequeathed to us and try to understand the complex processes in operation in its phase of decline. We would examine the archaeological (#A), technological (#B) and environmental (#C) evidence to try to understand the processes involved in the transformation of the great Indus Tradition. In this essay, I would concentrate on these transformations. Since I cant close my eyes to the controversy regarding the Aryans, we would also examine the recent developments in our understanding of the Aryan problem (#D).

A. ARCHAEOLOGICAL EVIDENCE

The Harappan legacy is not only its city life, but also the rural technologies or peasant science, knowledge that was within the control and experience of the ordinary household or village— elements of culture that had been internalised and passed down the generations within the family and the community (Ratnagar 2000: 126-128). But in a traditional society like ours, hoary traditions continue along with newly acquired fashions and technologies. A closer look clearly shows an old, Harappan sub-stratum, on which the edifice of the present Indian culture stands. Let us recapitulate and re-emphasise some of these cultural traits.

The Hindu religion is basically iconic and not animistic as that of the Aryans. The *pasupata*, *yogisvara*, *trimukha* aspects of the famous seals have been identified as proto-Siva, or even proto-Mahisa, and to us it appears to be a strong evidence, though Ratnagar thinks that the Harappan religion was shamanistic. The nandi-bull worship has to be traced to the Harappans and perhaps the sacredness of the cow too. Some of the seals suggest animal sacrifice, so does the terracotta cake from Kalibangan. The *linga* (phallus) worship can only be traced to the Harappans; even if the phallus-like objects are only few and some scholars do not believe that the proto-Siva seal shows an ithyphallic god. The importance of pipal (*Ficus religiosa*), swastika, and water ablutions in today's religion can be traced back to the Harappan preoccupation with water rituals (the Great Bath, the associated water structures with the Kalibangan fire altars, the row of bathing platforms at Lothal etc.), and the emphasis on the pipal motif do suggest a continuity of the religious beliefs. The enigmatic terracotta figures suggest yoga-like postures.

Even secular objects like the typical Harappan house plan of a central courtyard surrounded by rooms (it has been found by air-conditioning experts to be best suited for Indian climate) seems to have continued from the Harappan times. The binary system of weights of the Harappans followed 1, 2, 4, and 8, 16, 32, 64... 128(X), with fractions in one-thirds. Till recently, the Indian 1 seer = 16 chattaacks and 1 rupee = 16 annas

basically followed the same system. Even the Arthashastra's (angula 17.86 millimetres) seems to have been derived from the Harappan measuring unit of 17.7 mm. What the present Indian culture owes to the Indus Civilisation will perhaps never be known fully as the intangible heritage that we got from the Harappans can not be fully traced to their Harappan origins, unless one day one finds long decipherable texts of the Harappans (Agrawal 1993: 450-45). On the other hand, Steve Farmer (Harvard Round Table 2001) says, the "Indus symbols were not capable of encoding human speech or long texts, and that the thousands of short inscriptions seen on Indus seals, tablets, copper plates, potsherds, and other durable goods were non-linguistic in nature."

It is interesting to note here that many of the Harappan items reappear with the second urbanization (I Millennium BCE) in the Northern Polished Ware times in north India. (Did these artefacts in some way relate to the state?) Pande (1987) points out that cultural items of everyday life of the Mature Harappans disappear in later cultures: antimony rods, terracotta masks, weights and measures, metal pots and pans, even some motifs like knot designs. For the first time, the *lota* and *thali* are introduced in the Indian crockery by the Kayatha Culture and continue to this day. Now burials come right into the houses: the dead of the Chalcolithic cultures are buried below the house floors, unlike the Harappan cemeteries located outside settlements. These markers, in diet, in subsistence, in script and literate tradition, in daily items of use, which suddenly disappeared after the Harappans, are obviously conveying the message that the cultural tradition broke down. The break of tradition is writ large on the evidence.

No more planned towns: in fact, no more towns. The ones that were there lose their character and population. It does not mean that populations were decimated, but with lack of control from the metropolitan centres, the provincial towns degenerated and changed. There was an abandonment, or severe depopulation, of the cities and a number of important settlements including Kot Diji, Balakot, Allahdino (in Pakistan), Kalibangan, Ropar, Surkotada, Dholavira, Desalpur, and Lothal (in India). Long distance trade was reduced and the production of luxury items was curtailed. Settled farmers largely abandoned Sindh and Cholistan and there was an increase in the number of settlements in the Punjab, Haryana, Western Uttar Pradesh, and northern Rajasthan, though Gujarat seems to have remained relatively stable. There were shifts in the subsistence regime with their ability to sustain double cropping with the use of millets, resulting in growth of population. Average site size goes down, but there is little change in the total settled area. There was significant reshuffling of the population over the landscape and interesting shifts in subsistence, trade and the economy.

The Mature Harappan style in architecture and material culture disappeared, along with the stamp seals and the system of writing. The Post-urban times witness a return to a cultural mosaic not unlike the one found during the Pre-urban Phase. Yet, in spite of these changes, there is a strong line of culture historical continuity throughout the Harappan region. The period between c. 1900 and 600 BCE may not have been dark but it certainly was a regression. From the state the society went back to chiefdoms. Between the distinctly organized societies of the Harappans and of the later Ganga civilization, the interregnum was perhaps a bit of a chaos and disorganization.

While in Sindh and Baluchistan, there is clear evidence of eclipse of the Harappan Civilization, in the East and in Gujarat, there were strong lines of continuity through the early centuries of the second millennium, with little, if any, of the "trauma" that affected Sindh. By Post-urban times the centre of settlement had shifted to the Punjab, Haryana, northern Rajasthan, and western Uttar Pradesh, as well as Gujarat. I think that it simply indicates that the Post-Harappans were seeking greener pastures and were moving to eastern region of higher rainfall, compared to Sindh.

LATE HARAPPANS

The Harappan cultural tradition, both in its diversity and uniformity, continued for a long time and probably laid the basic substratum of the present day Indian Civilization. But towards the beginning of the II millennium BCE, a drastic change is writ large all over the Harappan zone. Was it the end of the Indus Civilisation, a transformation, or merely a change? These processes require a careful examination of the data. We would address these questions region-wise below.

Let us examine the Late Harappan scenarios in the five geographical areas:

1. Cemetery H related cultures of the Punjab and the Gandhara Grave Culture of northern Pakistan; 2. Jhukar related cultures in Sindh; 3. Rangpur and Lothal late cultures in Gujarat; 4. the BMAC (Bactria -Margiana Archaeological Complex) related cultures, and Complex B assemblages of Baluchistan; and 5. Rajasthan and other Chalcolithic cultures.

1. Punjab

With recent research, it is becoming clear that new elements were making their appearance in the Harappa region and they were not localized. The Cemetery-H and Jhukar (names after the sites) are no more localized aberrations but occupy large areas.

From about 1700 BCE, cemeteries and villages in Swat (period IV) had a material culture which seems to have been a curious amalgam of elements from South Asia, north-east Iran (grey burnished pottery, violin -shaped figurines, the horse) and China (jade pendants, stone harvesters, and ornate bone pins). In time Swat, too, would receive steppe elements from Tadjikistan, via north Bactria. As regards connections with China, it needs to be said that these are visible in Bactria too: in four graves at Sapalli-tepe (2000-1700 BCE) there is evidence that the dead were wrapped in silk. Was this Chinese silk? It is evident that connections with northeastern Iran-Turkmenia and the BMAC are manifest both at major Harappan centres and on the fringes of the Harappan heartland. While during the Mature Harappan period contacts between the plains of the Indus and the hills of Baluchistan were meagre and there were few inhabited villages in the western mountains, pottery of the type found at Pirak and Nausharo now occurs at Ispelnji north of Kalat, at Dabarkot in Loralai and at Sulaimanzai on the Quetta plateau.

2. Sindh

At Jhukar there is a clear cultural overlap and commingling of cultures; and in the artefacts new tastes, but perhaps the old artisans, seem evident. At Jhukar now the goblet is painted with Jhukar motifs. So if one is looking for elements in the archaeological

record of new people, the Jhukar and Cemetery-H cultures with their larger distribution appear to be claimants to that title.

At Mohenjodaro, both the Warehouse and the Bath were abandoned even before the eventual abandonment of the city. In the desertion of these two facilities can be seen the initial outward signs that the Harappan Civilization was deeply troubled.

The documentation of settlement in Sindh during the Jhukar period, the Post-urban there, seems to record significant change. The drop from 86 to 6 sites is important, but so too, is the abandonment, or virtual abandonment, of Mohenjodaro, the premier urban centre.

There is now archaeological evidence of new Central Asian elements appearing in the Harappan zone. The bronze cosmetic flagon known at Hissar, Altyn-depe and in Bactria, also occurs at Chanhudaro as a beautifully fluted piece, in a probable Jhukar Culture context. Round bronze mirrors with tangs for fitting into wooden handles, as at Hissar, Altyn-depe, Gonur I, Sapalli, Dashly, Shahdad and Khinaman, and Mehi—some of them with a handle shaped as a human body—also occur at Harappa and Mohenjodaro. Twelve such mirrors occurred in graves at Harappa and one in a Kalibangan (Rajasthan) grave.

The beautifully cast, socketed adze-axe (Socketed axes were not part of the typical Harappan repertoire) of Gonur I has counterparts at Hissar, Shahdad, Khinaman and also Mohenjodaro. Harappa and Chanhudaro each have a single bladed socketed axe. Exquisite bronze animal-headed pins or 'wands' at Dashly and Hissar have a counterpart in the latest stratum of Harappa in an 'antimony stopper rod' surmounted by the figure of a dog biting the ear of a goat; and at Mohenjodaro where a rod is surmounted by an antelope. There are also compartmented seals whose faces bear raised geometric designs, from Mohenjodaro, and the white steatite stepped seal with a stylised eagle from Harappa has Bactrian connexions.

We do need to highlight the relevance of the happenings in this region to the Harappan centres, which suggest some inter-connection between the series of Harappan settlement desertions and colonizations, and events in the western region.

3. Gujarat Region

In this period in Gujarat the number of sites drops by one-third and there is a significant drop in the average size of sites. Total settled area, as determined from the settlement surveys, is reduced to half. These are definite indicators of deep change in the system of settlement and, probably, subsistence and the socio-cultural system generally. But there is another theme in the transformation process in Saurashtra. At Rojdi the site was expanded and rebuilt just at the time Mohenjodaro was being abandoned, and Harappa came to an end as an urban centre. Thus, while we have evidence for fewer and smaller villages, at least some of those that survived have signs of a sound economic base and did not depend on the Harappan economy.

At about 1900 BCE, the signs of manufacturing and trade disappeared, and Lothal shrank to a squatter's settlement. A similar fate befell Kuntasi. Both indicate the collapse of the urban authority in Sindh.

It was during the Late Mature Phase that the Harappan settlement at Kuntasi was developed into an industrial centre and a port. The structure complex unearthed at Kuntasi is unique and the evidence allows us to identify the Harappan settlement as an industrial centre for manufacturing pottery and a variety of beads as also probably copper artefacts. But at about 1900 BCE Kuntasi settlement, like Lothal, also shrank in size and signs of craft activity and trade were reduced. The Late Harappan occupation at Kuntasi betrays a marked degeneration in the economic activity. People lived in flimsy structures with rubble foundation, mud walls and thatched roofs. Only a few artisans were working.

In Gujarat, Lothal, Kuntasi, and Dholavira were essentially "colonies" of the Sindhi Harappans, which made them vulnerable to severe change at the beginning of the Post-urban Harappan. Rojdi and other places that were farming communities, not deeply involved in the acquisition and processing of materials or in the transport that was part of the commerce, were insulated from the catastrophic changes in Sindh. But places such as Dholavira, Kuntasi and Lothal succumbed.

4. Baluchistan Region

In Baluchistan there are three places with signs of human activity: Mehi, Kulli, and the "Elite Burial" in Quetta City. These are places where the so-called "Bactria -Margiana Archaeological Complex" (BMAC) has been found. The signs of human activity that are present are not settlements in the conventional sense. One is an internment: a cenotaph. The others are stray artefacts and signs of cremation within an uncertain, probably much disturbed, context. The BMAC extends onto the plains in Kachi at the Sibri Cemetery and Dauda Damb. Together, these archaeological signatures seem to reflect the presence of mobile, nomadic peoples of the early second millennium whose home might well have been Bactria and Margiana far to the north.

Group movements, also affected the Kacchi plain, on the frontier between the Indus valley and Baluchistan. Western contacts re-appear at Nausharo after the Harappan period. The famous Neolithic site of Mehrgarh near Dadhar has a South Cemetery with ordinary graves, 'cenotaphs' devoid of human remains but with offerings, and grave goods interred in pits. At this cemetery grave goods of international currency include steatite kidney-shaped containers (as in Bactria), a stone sceptre as in sites of the BMAC and eastern Iran, a bronze cosmetic flagon, mirror, and pins with double volutes or bird-shaped heads. Also in the Kacchi, near Nausharo, was a small (1 ha) and short-lived settlement, Sibri. This could have been the settlement of a small group of migrants who came down the Bolan Pass from Central Asia: among the finds occur a polished stone column, two flat, violin-shaped figurines, compartmented seals, a bronze ornamental pin, and a bronze shaft-hole axe-adze. There is also evidence of copper/bronze industry at the site, which is comparatively rich in metal.

It is important to note that Sibri offers not only Central Asian elements but also Harappan ceramic traits and Indus characters on an amulet, thus the chronological coincidence between the later phase of the Harappan civilization and the momentous happenings to its west are established. At Pirak, 11 km south of Sibri on a tributary of the

Bolan, a 9-ha settlement was founded around 1700 BCE. The material culture—house forms, hearths, pottery, bone and stone tools and grain storage methods—presents a contrast to the Harappan material culture. Moreover, at Pirak the horse and the two-humped Bactrian camel (probably domesticated, centuries earlier in Turkmenia) are represented by their bones. Among artefacts there are Murghab type stone seals.

Not only were there movements of groups of people, social transformation was also involved. While centres like Altyn-depe with their social stratification, elaborate cult centres, and varied metal alloys were clearly urban, the settlement forms in Margiana and Bactria, according to the early excavators are totally different, with each arm of the Murghab settled by an individual tribe, and separate families occupying each settlement. Perhaps the BMAC was a short-lived (say two-century) phenomenon, collapsing between 1900 and 1700 BCE, and followed by migration to eastern Iran and the Kacchi.

5. Rajasthan and other Chalcolithic cultures

During the transition between the III and II millennia BCE, in the valleys of Sarasvati, the population thins down drastically. Later on, iron starts appearing; so do the grey wares. Rice, pig and buffalo become prominent in the subsistence record. In the Chalcolithic cultures, lentils and leguminous plants appear and assume importance in the diet; they were conspicuous by their absence in the Harappan record. The literate tradition breaks; no script anymore. Use of ground water and wells is given up, along with the burnt bricks.

B. TECHNOLOGICAL EVIDENCE

Archaeologists identify two early farming transformations in South Asia: One after the Indus Civilisation declined and the other in the Neolithic times. When viewed on a broad basis, two distinct agricultural revolutions can be identified for the northwestern region of South Asia during the pre- and protohistoric period. The first involved the establishment by the sixth millennium BCE of a farming complex based principally on the *rabi* (winter sown, spring harvested) crops of wheat and barley and on certain domestic animals like zebu cattle, sheep, and goats.

The second transformation saw the addition during the early second millennium BCE of *kharif* (summer sown, fall harvested) cereals including sorghum, various millets, and rice along with new domestic animals including the camel, horse, and donkey. These agricultural innovations might partly explain the obvious changes in settlement patterns. It has been suggested that the introduction of the summer-sown cereal crops, when combined with the new means of animal-based traction, transport, and communication, facilitated widespread settlement in areas previously marginal to food production as well as to a realignment of settlement in already occupied areas of northwestern South Asia.

C. ENVIRONMENTAL EVIDENCE

There were many causes of the Harappan decline: aridification (for which there is now impeccable data from Rajasthan and elsewhere from India and globally too; water-logging in the Indus; tectonic disorganization of perennial rivers like the Sarasvati and

their eventual drying up; the inability of the Harappan culture to cope up with the monsoonal ecology of the Doab; and finally, any culture at some stage has to die out. The process of birth, growth, decay and death governs organisms as well as cultures.

Thus man-environment relationship in Rajasthan is determined by three main factors:

1. Change in rainfall
2. Change in palaeochannels caused by neo-tectonics.
3. Limited capacity of semi arid ecology to sustain large sedentary populations. Singh et al had carried out pollen studies on the cores raised from the saline lakes of Didwana, Lunkaransar and Sambhar in Rajasthan.

The neotectonic movement of lineaments in Rajasthan has resulted in changes in the courses of Satluj, Ghaggar and Drishadvati as indicated by both the distribution of archaeological sites and satellite imageries. As a result of these tectonic changes, the Satluj joined the Indus System and the Drishadvati the Yamuna drainage. The ancient Harappan settlements of Kalibangan and other smaller sites were on the banks of the Ghaggar, which eventually dried as its main tributary joined the Indus system.

The third factor one has to take into account is the limited sustainability of semi-arid ecology for large sedentary populations. Despite the mid-Holocene climatic amelioration, Rajasthan remained a semi-arid ecology. It could not sustain large towns for any length of time. The ecology had to give way once a threshold was crossed, till it regenerated again. We see this phenomenon in Rajasthan. The Harappans appear around 2500BCE and wither away around 1800BCE. The PG Ware culture again appears around 800BCE and disappears a few centuries later. So also the Rangmahal Culture, which appears around 2-3 Centuries AD and withers away in a couple of centuries.

We thus see that in Rajasthan, it's not only the changing precipitation that affects habitation but also the changing loyalties of the rivers and the sustainability thresholds of semi-arid ecology to allow large sedentary populations for long periods of time. All these trends are superimposed on each other in Rajasthan.

Now lets go to the more controversial issue of the Indo-European languages and the Aryan problem.

D. THE ELUSIVE ARYANS

I am not much interested in labelling the authors of the Indus Civilization. They achieved great heights and as their descendents we owe them a great deal, irrespective of what label we put on them. The Indus Civilization does provide the basic substratum of today's Indian Civilization. But one cannot also avoid the eternal problem of the elusive Aryans either. I would prefer to discuss the recent archaeological evidence, which does seem to indicate some new elements, which appear in the wake of the decline of the Harappans.

Sir Mortimer Wheeler had once asked, "What destroyed this firmly-settled civilization? Climatic, economic, political deterioration may have weakened it, but its ultimate

extinction is more likely to have been completed by deliberate and large-scale destruction. It may be no mere change that at a late period of Mohenjodaro men, women and children appear to have been massacred. On circumstantial evidence, Indra stands accused". There are very few takers for the Aryan invasion theory now. We discussed above an array of data, new and old, to understand the end of the Harappa culture. It may be emphasized here that not a single cause but several contributed towards the decline and the disappearance of the mighty Harappan civilization.

We have looked at the evidence mainly inside the Indian sub-continent; now let's have a look beyond its borders. We summarise the arguments below:

1. The termination of Bronze Age occupation of northeastern Iran is inevitably linked to the migration of speakers of Indo-Iranian languages. Historical linguists have asserted that such a migration occurred.
2. On the basis of common words, reconstruction of the cultural context of PIE (Proto-Indo-European), and the Indo-European relationships with other language groups, the ancestral homeland of this parent language is said to have been the vast grasslands or steppes of southern Europe and Central Asia.
3. The Finno-Ugric ancestors must have derived their knowledge of agriculture from the Indo-Europeans, as several words like those for grain, grass, and goat are derived from Indo-European, as in their very early history these two language families shared an extensive common border. There are grammatical affinities as well.
4. The ancestral Indo-European homeland culture involved agriculture and animal herding, and simple metallurgy, with great importance being given to the horse. The horse was 'embedded in the culture of the early Indo-Europeans' and all the related languages used a term derived from PIE *ekwos*, for 'horse'. The horse is important in the Rgveda, with two entire hymns devoted to its praise; it is associated with the Iranian deity Mithra; horse sacrifice was important in ancient India and Rome. The horse is also evidenced at Tepe Hissar, in Turkmenia in the Namazga VI period, in Bactria and Margiana, and in the Kacchi, generally after 2000 or 1800 BCE. This animal, *Equus caballus*, it is certain, was a native of the Eurasian steppes and nowhere else: the wild ancestor from whom it was domesticated belongs to these steppes.
5. The Indo-Iranian languages (Avestan- Old Persian, Vedic Sanskrit, and the language of a few texts from the Mitannian kingdom of northern Syria) all derived from one branch, an undivided parent, which linguists call Indo-Iranian. This branch had split off from Indo-European somewhere in the eastern part of the homeland (probably the north-east Iran-Turkmenia-Bactria steppes), and this split was a separate process from the branching off of Hittite, a language very close to PIE that gained currency in Anatolia between 1600 and 1200 BCE.
6. Linguistic groupings are not necessarily coextensive with material culture groupings. In fact, an archaeological 'culture' cannot be assumed to represent one people, or 'a tribe'.
7. The movement of a language into a new homeland certainly requires that its speakers move, but this is not tantamount to mass movements of hordes of tribes, much less a sequence of destruction and trails of settlement desertions along the way. Aramaic did not become the lingua franca of western Asia due to mass

- migrations. Even in the case of the Sea Peoples of 1200 BCE, it has been stressed that they were groups of marauders and adventurers but not an army. There was no 'movement of population' as such. In fact, decades ago Father Heras had asserted that Indo-Aryans came into South Asia in small numbers and intermarried with the natives, and that consequently Dravidian speakers became bilingual. Thus, even though Indo-Aryan languages did not originate in South Asia, we cannot suggest that 'the Aryans' are 'a cause of the end of the Indus Valley Civilisation'.
8. It was the nature of pastoralism, as it had developed on the steppe by 2000 BCE, which gave rise to repeated out-migrations. Once a rider could control the horse, the mounted herder could cover long distances in a day, and scout for good pastures and stray animals. In a positive feedback mechanism, it would lead to yet more geographically extensive pastoral circuits and larger flocks. This, coupled with rainfall variability, scarcity of ground water, would mean a precarious balance between people, animals, and the land, necessitating periodic out-migration.
 9. Paropla connected the Tarim basin mummies with the Indo-Aryans basing on the evidence of *Ephedra*, identified with Soma. And Hemphill finds Craniometric affinities between Tarim and Timargarh skeletal material. Parpola says, "The Soma cult may actually have its origin in the Afanas'ev culture of southern Siberia and Xinjiang (c. 3000 – 1800 BCE), which, with good reasons, has been identified with the Proto-Tocharians (the Tocharian texts of the sixth to eighth centuries AD come from the Tarim Basin). Small parcels containing twigs of *Ephedra* have in several instances been found on the chests of bodies buried in shaft pit graves of the Afanas'ev /early Andronovo-related Gumugou I culture in the Lopnor region of the middle Tarim basin in Xinjiang (c. 2000-1550 BCE; Chen and Hiebert 1995, quoting the excavator Wang Binghua)... Therefore, it may well be in Xinjiang that the Andronovians, here assumed to be ancestors of the Rgvedic Aryans, adopted the Soma cult, and the same applies to the Saka Haumavarga, who in 500 BCE occupied the area around Ferghana."

Unresolved Problems in Identifying Vedic Aryans with the Harappans:

1. If the Aryans and the Sarasvati-Indus Civilisation are both indigenous to India, there is no continuity of cultural development from the Neolithic to the Harappa Culture in the Sarasvati Valley.
2. The continuous growth is evidenced only in Baluchistan right from the Upper Palaeolithic to Harappans and also their decline. Could that be the area of Aryavarta (India) of the Vedic Aryans?
3. The horse is so important an animal in the Vedas but is conspicuous by its absence in the Harappan seals and icons.
4. There is no archaeological evidence to show that the Indus Civilization grew and spread from the Sarasvati Valley towards west; in fact, it grew in Baluchistan and spread eastwards!
5. The Vedic religion is animistic, in contrast to the Harappan religion, which is patently iconic.
6. At the turn of the II Millennium BCE, there is a break writ large in all aspects: agriculture; diet; burials; architecture; settlement pattern; new cultural elements

- (like Cemetery-H, Jhukar; BMCA artefacts etc). This all round break can perhaps be explained only by new people coming and dominating the scene.
7. The new DNA evidence shows that there is a significant male Eurasian element in the DNA of the Kshatriyas and the Brahmins, which again shows the possibility of the migration of a male dominated small population.
 8. The decipherment of the Indus script could throw some light on this problem but it has so far defied all attempts and now some scholars are seriously doubting if at all it was a script!

CONCLUSION

We have presented a variety of data above to emphasise the complexity of the processes involved in the decline and devolution of the Indus Civilization. This is a very important phase of India's history manifesting itself in terms of a multi-dimensional transformation. It is therefore necessary to take a multidisciplinary yet holistic approach to unravel the attendant processes. Whether the authors of the Indus Civilization were Aryans or they were part of the processes of its decline, I think it will remain difficult to resolve without definitive literary evidence. For that we have to wait till the Indus Script is deciphered; if at all can be deciphered.

I feel that efforts to equate the Harappans with the Aryans are still fraught with numerous problems, notwithstanding the creation of an ethnic divide between the South and the North India. On the other hand, the Harappans were there can not be disputed and what they have contributed to the Indian cultural legacy as also to the world of science and technology is also undisputed, so why worry about putting any labels on them? Of late a lot of effort is being directed to their nomenclature/identification and less on extracting more data on this glorious phase of India's past.

What is clear is that a drastically new settlement pattern emerges after the decline of the Harappans. In this process a variety of climatic and environmental changes, changes in drainage, new agricultural innovations, disorganisation of international trade etc seem to have contributed.

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