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ANALYSIS

HISTORY

The Sarasvati River and Why the Vedas Can't Be a Lesson in Geography



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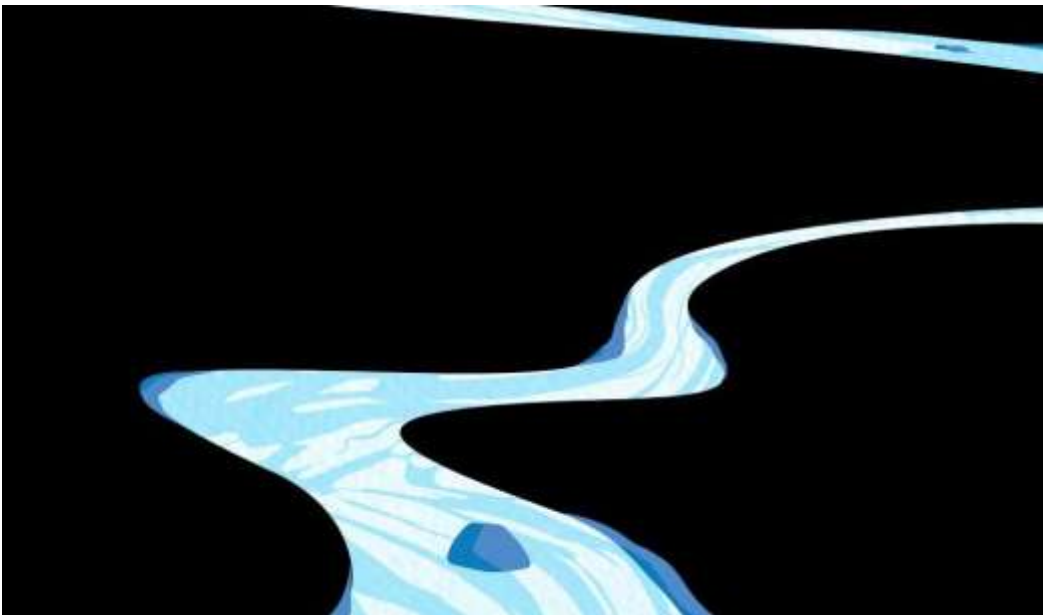


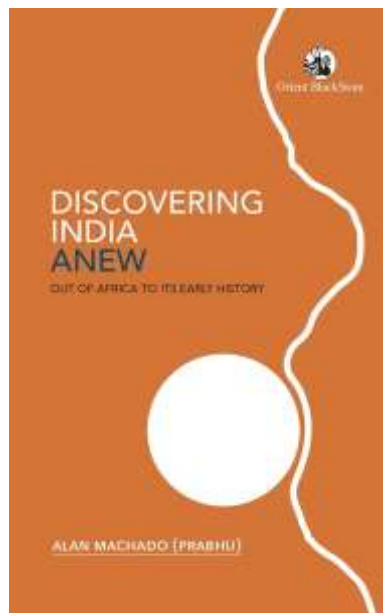
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The following is an excerpt from Alan Machado's book *Discovering India Anew: Out of Africa to Its Early History*.

Nature abhors a vacuum; vacuums are soon filled by surrounding air and whatever it carries. So too history; myth, hypotheses and narratives, some compiled through ignorance, others through motivated agendas, fill blank spaces.

Ancient texts refer to a sacred and mighty river whose life-giving waters were also the waters of wisdom. Its name was associated with a goddess. Sacred texts said to have been composed on its banks have inspired generations and have been woven into the early history of an 'Aryan' South Asia. That river does not flow today, and the bed that provided a channel for its sacred waters cannot be located. Most of the other rivers referred to by these earliest texts have been identified...Strangely, it is the river most praised and cited, the Sarasvati, that does not correspond to any current watercourse.

The stimulus for these settlements along the Ghaggar-Hakra came from a long-term declining trend in the summer monsoon which reduced water flows, flooding and course changes. It created a stable environment for settlement. Ironically, 'it was the departure of the river, rather than its arrival, that triggered the growth of Indus urban settlements here ... a stable abandoned valley, still able to serve as a water source but without the risk of devastating floods ...' (Singh 2017).



'Discovering India Anew: Out of Africa to Its Early History', Alan Machado (Prabhu), Orient BlackSwan, 2024.

The Ghaggar-Hakra palaeochannel lies between the Sutlej and Yamuna. Its floodplain is too small to explain large discharges in the past or present.

Further, this width has been enhanced by the channel's shallow bed. Still further, OSL2 dating reveals this width has been restricted by sand dunes that formed on either side from c10–15 ka. Harappan sites located on these dunes and on the bed and floodplain confirm that the region never suffered from devastating floods during their settlement.

The Ghaggar bed is dry for much of the year and, in the rainy season, flows for a distance of about 465 kms from its source.

The special interest in the Ghaggar-Hakra-Nara palaeochannel arises from the belief that the dry bed may be that of the Sarasvati mentioned in Vedic texts. One of the earliest published references to the 'Lost River' comes from an article in *The Calcutta Review* of 1874 . It cites local traditions attributing the desolation of a once flourishing country to the drying of a large river close to 1000 kms in length. The channel was known by different names along its course, the main sections being the Ghaggar, Hakra and Nara. The course of this lost river was marked by scattered mounds, great and small, that were once cities and towns, many of considerable importance. These ruins contained huge quantities of bricks of a type that had not been manufactured for centuries, and the old river bed was littered with fresh-water shells similar to those found in the Sutlej and Indus. The small number of people who lived in this inhospitable region knew little of its past; not much more than a few legends remained.

Recent Scientific Investigations

In recent years, scientific investigations have used a number of different technologies to study the Ghaggar-Hakra and its history. Remote sensing satellite imagery has uncovered an 8,000 kms network of palaeochannels in the Sutlej-Yamuna interfluvium (Punjab, Haryana, north Rajasthan) of which the Ghaggar-Hakra network comprises about 2,200 kms .

A high-resolution map of the western region of the Indo-Gangetic Plain using the SRTM3 database shows wide, shallowly incised valleys separated by interfluviums in the Indus basin, but none in the Ghaggar-Hakra interfluvium. This means similarly large glacier-fed rivers did not flow there in the past.

OSL dating of a section of the Ghaggar-Hakra reveals a flowing water channel with several lakes and ponds in the surrounding areas c4000–2000 BCE . Electrical resistivity soundings beneath the surface of the Ghaggar-Hakra palaeochannel also confirm a once flowing river but not its size or age (Sinha 2012). Reduced discharge led to its degeneration between 2000–1400 bce. It has been dry since then. Geochemical analysis of bed sediments has revealed two distinct origins: older grey micaceous sand (c70–4.3 ka) from melting Himalayan glaciers and younger yellowish-brown sand and brown silty clay (c16–0 ka) from the Siwaliks. There was a gradual disappearance of the river's perennial water sources and increasing dependence on monsoon rainfall. Pottery samples from the Mature Harappan period (2600–1900 bce) at Kalibangan contain only the newer sediments confirming the Ghaggar had transitioned from being a glacier-fed to a rain-fed river by then.

Strontium and neodymium isotope sediments in the Ghaggar-Hakra palaeochannel confirm a sub-Himalayan catchment area (Tripathi 2004). From c3500 bce, a progressively weakening monsoon reduced its flows and the river gradually shrank northwards. Scientists now believe that a weakening monsoon created a more stable environment in the northwest and the stimulus for intensive agriculture and resultant urbanisation in the Harappan region.

U-Pb dating of zircon sand grains of the Ghaggar-Hakra bed in the Cholistan section contains at least two groups of sediments with similarities to the Beas, Sutlej and Yamuna Rivers confirming it once received water from these rivers.

The Ghaggar-Hakra ceased to be an active Himalayan glacier-fed river well before Harappan times. As one investigator states:

...contrary to earlier assumptions that a large glacier-fed Himalayan river, identified by some with the mythical Sarasvati, watered the Harappan heartland on the interfluvium between the Indus and Ganges basins...only monsoonal-fed rivers were active there during the Holocene.

As the monsoon weakened, monsoonal rivers gradually dried or became seasonal, affecting habitability along their courses. Hydroclimatic stress increased the vulnerability of agricultural production supporting Harappan urbanism, leading to settlement downsizing, diversification of crops, and a drastic increase in settlements in the moister monsoon regions of the upper Punjab, Haryana, and Uttar Pradesh.

The Harappan region passed through alternating wet and dry phases spreading over centuries. The last, beginning with the 4.2 ka global megadrought, resulted in a drastic reduction in the Indian summer monsoon rainfall for two centuries.

By c1900 BCE, river beds had gone dry. Rain-based farming and urbanism declined especially along the Ghaggar-Hakra palaeochannel with a downsizing in settlements until the region became depopulated. People moved to the dense stream network on the upper channel in Punjab and Haryana where the monsoon was more consistent. In lower Punjab and Sindh, the number of sites decreased over the same interval as populations moved to Kutch and the Deccan. The abandoned Cholistan section of the Ghaggar-Hakra turned to desert. It is this seasonally active monsoon-fed river that is believed to be the Rgvedic Sarasvati.

The Rgvedic Sarasvati

The Rgveda knows Sarasvati both as a river and a goddess, a mother, sister, wife, daughter and friend. One of her foremost functions as a goddess is the bestowing of wealth, pleasure and, as the presiding deity of fertility and growth, progeny. In RV 2.41.16, she is called upon after the gods Vayu, Indra-Vayu, Mithra-Varuna, Asvins, Indra and the All Gods to attend the morning soma pressing and grant favours: 'ambitame, naditame, devitame, Sarasvati (o best mother, best river, best goddess, Sarasvati)...make a laud for us, mother...Allot offspring to us, goddess'.

The Rgveda glorifies the northern rivers, especially the Sindhu. RV 6.61, exclusively devoted to the Sarasvati, glorifies it as the best of seven sisters and ends with a plea that she does not abandon her worshippers.

Later Vedic texts speak of the disappearance of the river in desert sands at a place, near Patiala, known as Vinasana (disappearance).

The Mahabharata explains why this happened:

Here is the beautiful and sacred river, Saraswati, full of water: and here ... is the spot known as Vinasana, or the place where the Saraswati disappeared. Here is the gate of the kingdom of the Nishadas and it is from hatred for them that the Saraswati entered into the earth in order that the Nishadas might not see her ..." (Mahabharata, Book 3: Vana Parva, Section CXXX).

The Sarasvati, still the guardian of the waters and wisdom, flowed only for the benefit of the select few.

There are remarkable parallels between the geography and mythology of the Sarasvati, and the Haraxvaiti/Haetumant River, which flows through Iran and Afghanistan. Both names came to be applied to life-giving rivers, flowing down from the mountains and feeding all other rivers.

In the Avesta, Aradvi Sura Anahita is venerated as the female guardian of waters (Aban), associated with fertility, healing and wisdom. The Haraxvaiti/Haetumant River was particularly associated with the goddess Aradvi Sura Anahita.

In Indo-Iranian times, the goddess was more properly known as Sarasvati (she who possesses waters).

The 'Aban Yasht' (Hymn to the Waters), one of the longest and best-preserved Avestan hymns, celebrates the Haraxvati as the personification of a great mythical river which plunges down from Mt Hara into the Vourukasa Sea. It is the source of all the waters of the world. The river-goddess is a powerful deity.

Like Aradvi Sura Anahita, Sarasvati is the guardian of the waters and wisdom; she protects the study of the Vedas.

Sarasvati literally means 'abounding in pools', a name that could be applied to many other rivers of the Indus system where continuous sedimentation, especially during the monsoon, creates many ponds. The same can be said of the Haraxvaiti region.

There are similarities between the Haraxvaiti/Haetumant region and the Hapta Hindu: the snow-fed rivers arising in the mountains to the north; the spring floods; the Sistan and Derawar inland lake deltas.

So too, there are similarities between the attributes assigned to the goddesses Aradvi Sura Anahita and Sarasvati.

Sarasvati performs the same functions attributed to Aradvi Sura Anahita. She is ambitame, the best of mothers, the purifier of the male seed and female womb, who raises her son with abundant and nutritious food in a land devastated by drought and famine. She is naditame, the best of rivers, whose waters continue to flow and is full of fish when drought has dried the others. She is devitame, the best of goddesses, who preserves sacred knowledge and wisdom. Her waters are holy and bless those who seek it. But where does one seek it?

RV 10.75 places the Sarasvati between the Yamuna and Sutlej. There is, however, no opening in the Himalayan foothills between the Yamuna and Sutlej through which a large river can enter the plains (Oldham 1874: 7). Of the rivulets that have their source there, the Sarsuti, a corruption of Sarasvati, is one. In no way does it do justice to the majestic description, of river and goddess, given in RV 6.61.

So why does the Sarsuti-Ghaggar-Hakra channel, drying and diminishing even in Rgvedic times, get praised and glorified so much more than the bigger rivers flowing to its west and east?

The earlier non-Indo-Aryan local name for the Sarasvati has been tentatively reconstructed as visambal/pal (Vaisambhalya/phalya). It was the river that flowed through Kurukshetra, the heartland of Rgvedic and post-Rgvedic culture, its mythical, religious and political centre. This was a region of several lakes and ponds, a possible inspiration for the Sankritised renaming of the river to saras-vati, or equally for the Haraxvaiti.

To the Harappans, it was the size not the location of the river that mattered.

To the Rgvedic people, it was the location not the size of the river that was of prime concern. The Sarasvati flowed through Kurukshetra.

The Rgveda was never intended to be a lesson in geography. It can, at best, give limited information on that subject, information that needs to be reconciled with the increasing scientific field and laboratory

research that is today unravelling the secrets of the lost river of the desert, a relatively small river that gained a far bigger reputation than all the others put together.

History, like nature, abhors a vacuum.

Alan Machado (Prabhu) graduated from the Indian Institute of Science, Bengaluru and worked in the engineering industry in various capacities and countries, including Australia and Europe. His previously published books include Sarasvati's Children (1999), Shades within Shadows (2012), Slaves of Sultans (2015) and Goa's Inquisition (2022).