

Historicity of *Kṛṣṇa* : Can Geology Find an Answer?

Every religion has its founder, a born leader with exceptional character attracts a limited number of disciples at first and wanders about preaching the new religion and enrolling many members in its fold by his example and the gentle persuasion of his logic. Buddha and Mahavira, although following the vedic dharma, branched off and gathered their own exclusive group of devotees which spread out not only through most parts of India, but even went to Ceylon, Tibet, China and Japan and propagated their new religion. Jesus, likewise was a great teacher whose followers on the crucifixion of their leader, crossed to many parts of the world and spread the message of their lord. Prophet Mohammed started the Islamic religion and his disciples spread far and wide, making conquests after conquests covering the whole of the Middle East, a good part of Europe, and the whole of southeast Asia. Among all these great religions of the world the *Hindu Dharma* (a way of life which is very difficult to define) stands alone without any acknowledged leader. The religion itself seems to have been fashioned over a long period of time, developing a code of conduct and way of thinking which were not written in books, but taught by a *guru* to a group of disciples. It had no rigid laws, and what is more important, it accepted other faiths as different roads leading to the same goal. This code of conduct went back in time to the very dawn of civilization with the life of the common man governed by the precepts and examples of their *gurus*. It is surprising that this strain of culture and code of conduct runs throughout the length and breadth of India, even today lending it a definitive shape and strange cohesion.

The Beginnings of Indian History

Our historians start the historical period in India with the birth of the Buddha in 563 BC for the obvious reason that the main elements of his life are known. His birth at Kapilavastu, his attainment of wisdom at Gaya and his end at Kusinara are known and the places can be identified. Following the same argument, one may concede the authenticity of the war between *Kauravas* and *Pandavas* as narrated in the epic *Mahābhārata*. Hastinapura, Indraprastha and Kurukshetra, the scenes of the main battle are geographical entities which can be identified with a fair degree of accuracy. What is not definite is the exact date of the *Mahābhārata* war. That it happened much earlier than the birth of Buddha is clear, but by how much? It is here that science can play a significant role in marshalling evidence from different sources and adopting various scientific techniques to arrive at a realistic chronology of events that can be generally accepted.

The Astronomical Approach

In the earlier pages of this journal, I have drawn attention to the pioneering research undertaken by Prof. R.N. Iyengar (Department of Civil Engineering, Indian Institute of Science, Bangalore), who has concentrated on the *Vedas*, the *Upanishads*, the *Purānās* and

the Epics and collecting from them astronomical data of value in fixing the dates of some of the events of that ancient period. His latest contribution 'Some Celestial Observations Associated with *Kṛṣṇa* Lore' is under consideration for possible publication in the *Indian Journal of History and Science*.

He has in the paper directed the searchlight of enquiry to elucidating the problem of the historical authenticity of *Kṛṣṇa*, a character who plays an important role in the *Mahābhārata* and a darling of the Indian masses. Iyengar, out of sheer curiosity, has started critically examining astronomical evidence as can be gleaned from old Sanskrit texts like the *Mahābhārata*, *Hari Vamṣa*, *Bhāgavata* and *Viṣṇu Purāna*. Of particular interest is his analysis of the verse appearing in *Bhisma Parva* (2.31, 3-17). The verse reads:

Arundhati tathāpyeṣa vasiṣṭhaḥ Pṛṣṭhathah kṛtaḥ ||
Dhruvaḥ prajvālito ghoram apasavyam pravartate ||

The second line of this verse is of special significance to us. It means: *Dhruva*, the pole star blazing and fierce, is moving anticlockwise.

The spin axis of the earth is not stationary but oscillates in a small circle over a period of years. Presently this axis points towards the star Polaris (*Dhruva*). *Alpha draconis* was the pole star around 3000 B.C and Iyengar argues that *Alpha draconis* drifted away from its previous expected position around 1500 BC and this is the meaning of *dhruva apasavyam* (*dhruva* moving anticlockwise). Astronomy has been successfully used in this instance to date the *Mahābhārata* war around 1500 BC.

Iyengar quotes from *Hari Vamṣa* of a solar eclipse which had turned the day to night – *grastah svarbhānunā suryo divā naktam ajāyata* – (sun having been eclipsed, the day turned into night) at the time of the killing of *Kamsa* by *Kṛṣṇa*. Iyengar has used Planetarium software (PVIS) to search for solar eclipses near Mathura and finds that a solar eclipse was possible on 4th April 1523 BC!

Another text examined by Iyengar is *Skānda Purāna* which speaks of *Kṛṣṇa* vacating Mathura and arriving at *Prabhāsa*, seeking land for settlement. At this time also there is a mention of a solar eclipse. Later, in the same *Purāna* is the mention of a lunar eclipse *Somaparvan* coinciding with the visit of Pandavas to Prabhāsa in their incognito exile. The eclipse on the basis of the Planetarium software above referred to, indicates that an eclipse could have taken place on 24th April 1476 BC.

Iyengar quotes extensively in support of the inference that 36 years after the event previously described, bad omens occurred, like a comet and a solar eclipse, signalling the death of *Kṛṣṇa*. The solar eclipse has been dated according to the planetarium software around 1443-1444 BC. There is no mention of a comet in *Mahābhārata* but the date 21 Jan. 1445, estimated by Brady as per his back calculations (*Jour. British Astron. Assoc.*, 1982, v.92, pp.209-215) for the past appearance of Halley's comet synchronizes with the evidence provided in the *Mahābhārata*. Iyengar infers on the basis of the above evidences that 'If *Kṛṣṇa*'s first visit to Mathura was when he was about 18 years old, he should have lived for about 96 years'. His lifetime would therefore, have extended anywhere between 1543-1443 BC!

Viṣṇu Purāna mentions the birth of *Kṛṣṇa* on a rainy day, the eighth day (*aṣṭami*) in *Srāvāṇa* (August-September), the day is even now observed as *Janmaṣṭami*. Due to the oscillation of the earth's axis referred to earlier, the rainy season has receded now backwards to June-July. The statements in *Viṣṇu Purāna* would be true around 1500 BC. *Viṣṇu Purāna* (2, 37-24) also speaks of *Dwāraka*, built on land resurrected from the sea and getting submerged on the death of *Kṛṣṇa*.

The evidences gathered by Iyengar are based on astronomical observations as recorded in the different texts. To make them more reliable archaeological and geological inputs are required. This is a field in which geologists with their intimate knowledge of surface and subsurface geology of NW India and coastal Gujarat can play an important role. We need more information of the region covered by *Indraprastha*, *Hastināpura*, *Kurukshetra*, *Mathura*, *Brindāvan*, *Prabhāsa* and *Dwāraka*. Geologists should aim at providing a detailed history of events as preserved in riverine, lake and coastal sediments during the upper part of the Holocene (last 5000 years) of this region. Several earthquakes must have occurred leaving a record in the sediments and might help in fixing the dates more accurately. Knowing as we do, that sea level has fluctuated during late Holocene, the disposition of the coastline of India 3500 years ago becomes important. Stray observations have indicated extraordinary changes in the configuration of the coast (*Geographical Journal*, 1907, p.518). Those engaged in the field of Quaternary studies should consider the elucidation of the pre-history of northwestern India as one of the important branches of their investigations. Archaeological excavations in this region may throw up some artefacts which can be precisely dated and help confirm other inferences drawn on the basis of astronomical and geological evidence.

Authenticity of the Kṛṣṇa Legend

There appears to be on the basis of the facts presented above, sufficient evidence to prove that *Kṛṣṇa* was a historical figure who was the son of *Devaki* and received instruction under *Ghōra Angirasa*. He first appears in *Mahābhārata* at the wedding of *Draupadi* and his friendship with the *Pāṇdavas* and particularly with *Arjuna* gets more and more intimate. He plays an important role in the conduct of the *Mahābhārata* war and there is nothing which escapes his notice; with no class distinctions he consents to be the charioteer of his friend *Arjuna* and a friend of all. With remarkable skill, he steers the *Pāṇdavas* to victory. *Kṛṣṇa* later returns to *Dwāraka*, the capital city and after a long eventful life dies there. These are the barest details of the life of *Kṛṣṇa* as can be gathered from the *Mahābhārata*.

It must have taken centuries for the *Kṛṣṇa* lore to take hold of the minds of the people. In subsequent years a vast legend has been built around *Kṛṣṇa* making him a supernatural character, God himself, in an earthly manifestation. Although attributed to *Vyasa*, parts of *Mahābhārata* were presumably written and expanded by a multiplicity of authors anywhere between 400 BC and 400 AD. It is clear that during this long period, there have been additions, elaborations and reinterpretations of the original story. *Mahābhārata* is a veritable mine of information of the customs and cultures of pre-historic India, full of stories of persons both good and bad, their actions, their morality, their virtues and failings.

Stories from *Mahābhārata* have been borrowed by all the Indian languages and have entered the folklore and moulded the lives and conduct of people belonging to all classes all over India.

Kṛṣṇa, the Great Teacher

In the hands of the numerous minor poets who followed *Vyāsa*, the heroic legend of *Kṛṣṇa* has taken various forms and undergone extraordinary extensions. *Bhāgavata* and *Viṣṇu Purāna* sought to convert him as a divine being endowed with supernatural powers and in the hands of Jayadeva, the beloved poet of Bengal, *Kṛṣṇa* became a champion of love with all its amorous attractions. *Radha* was introduced along with numerous *gopikas*, to make the legend more popular. In this plethora of legends and amorous exploits, the essential part played by *Kṛṣṇa*, the great teacher, has been glossed over. The essence of what is practised as the *Hindu Dharma* was preached by *Kṛṣṇa* and has survived in the form of the *Bhagavad Gita*. *Gita* was not expounded to *Arjuna* at one stretch at the commencement of the *Mahābhārata* war. The verses are of the nature of advices given from time to time to a friend to lead a wise and purposeful life. The essence of *Kṛṣṇa's* teachings, which forms the core of *Hindu Dharma*, is simple living and high thinking, the absence of money power and aggressiveness, and a conception of life as a series of experiences and actions past and present which will be integrated into a future essentially dependent on our past and present thoughts and future actions. The emphasis is on service rendered in a spirit of disinterestedness and the teachings emphasized not a common creed but a common quest which offers the best promise for a world seeking religious concord. This scheme of life as expounded in the *Gita* has sustained Hindu society through its chequered history.

Suggested Research Programme for the Quaternary Geologists

This message is of great relevance today, where even the most affluent and technological societies live in an atmosphere of terror, not much different from those living in caves and forest covered mountain tops. *Kṛṣṇa* appears as the first great teacher who expounded this all embracing doctrine in a lucid way understood by everyone. The findings of Iyengar earlier referred to point to the life time of *Kṛṣṇa* to have possibly extended from 1543-1443 BC. Other evidence mainly arachaeological and geological have yet to be gathered to lend support to the inferences based on astronomy. Our readers should not react to this suggestion as one more instance of politicisation and ideological slanting of ancient history. The suggestion is put forward in all transparency and sincerity pleading for an application of modern scientific tools and critical analysis of data through scientific debate.

Reverence for the past is a necessary element of our patriotism and elucidation of this past history, especially the last 5000 years, must therefore form an important item of ongoing research. Geologists engaged in Quaternary studies, have an important role to play in establishing the historic details of the life and time of *Kṛṣṇa*, the first among the great teachers and figures in the spiritual history of mankind.