Humans and Events in Ancient India

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Short summary:

It has been reported in the literature, that the Denisovans lived together with the Neanderthals and Homo sapiens, in the time frame of around 20 ka. Indian mythological texts contain descriptions about different humans, which bear broad resemblance in physical features of ancient humans, as brought out in recent findings. The same have been discussed in the present paper.

Introduction

Estimation of time period of past events is hampered by the rarity of any remains of ancient civilizations. Mythological stories and folklore offer clues about social structures and practices, as well as weather and climate. Narration of celestial events such as solar and lunar eclipses, thunderbolts and rain, apparels of people at different place and time, give some indirect hint towards locations and prevalent situations. Language as such, is not a static entity, and changes with time. The words may get coined in some time frame for a particular purpose and may change their

meaning in due course. Extracting information from ancient literature, therefore, requires deep thinking of context over a large time frame.

Epics contain continuity of events, and may be relied upon for the clues about overall human behavior, tools and weapons, weather, agriculture and interpersonal relations. Ancient Indian literatures can be considered to begin from hymns, which later got consolidated in the form of *Vedas* and subsequently, in the form of *Upanishadas*. The oldest piece of literature having a full account of events centred around a few prominent characters, is epic *Ramayana*, written in *Sanskrit* by the poet *Valmiki*, and is likely to give realistic picture of events of that time. The epic *Mahabharata* includes part of *Upanishadas*, and may be relied upon to dig out prevalent social practices, along with climate, which may, in turn, give a clue about the time frame of events. Authentic information about time of introduction of animals in human activity, is available, and the same has been used for estimation of approximate time period of events.

An overview of timeline of Domestication of Animals and Agriculture

During the last Ice age, i.e. 110 – 12 Thousand years ago (110 ka – 12 ka BP), ice at poles locked water and sea was lower by about 60 meters [1]. Large part of the Earth was covered with Ice Sheets, 3-4 km thick, till around 26 ka BP to 13 ka BP. The Last great Ice Age occurred around 11 ka BP and change in climate is reported by 10.5 ka BP. Horses were tamed by that time and eating horse meat was probably common as depicted in horse hunting scenes [2]. Tamed horses may be used for chariot, but riding requires fully domesticated animals. Chariots have been described in *Ramayana* as well as *Mahabharata*. Camels, reported to have been domesticated around 5 ka BP, have no mention in *Mahabharata*. The present day blue bull (*Nilgai*), could have existed in large numbers around 11ka BP, and hunted widely along with

ancient wild cattle. It appears that cows were just domesticated during *Ramayana* era. It has been reported that the cow was domesticated around 10.5 ka BP, and then again 7 ka BP [3]. It is possible that the horses as well as cows went close to extinction due to adverse climate and scarcity of food, during the said time gap and then reintroduced later. Dog was domesticated around 15 ka BP and then again in 8 ka BP [4]. Cultivation of wheat and barley started 9 ka BP. Mango, which was possibly introduced in 5 ka BP, has neither been described in *Ramayana*, nor *Mahabharata*. These markers, taken from the recent scientific literature, may be used to identify time of occurrence of events described in Indian mythology.

The Three Humans and their Interactions during 20 ka to 10 ka BP

It was believed since long time, that the Homo sapiens, emerged as modern humans, and spread all over the globe. However recent discoveries indicate coexistence of other humans, related to Homo sapiens[5], Neanderthals, and Denisovans [6] . The discovery of Denisovans opened a new dimension to the interaction between societies of that era. Denisovans and Neanderthals were equally strong, and possibly, superior in physique as compared to Homo sapiens. Neanderthals, identified with European region, lived in cold climate, and have been reported to have light skin tone and well built body. Denisovans were sea farers and reportedly, more wide spread [7]. Physical features of the Denisovans have been visualized by DNA analysis, which indicates that they had , a large molar teeth, dark skin, brown hair and brown eyes. They possessed big and robust body, weighing around 100 kg [8]. The different groups engaged in frequent wars, and Homo sapiens slowly assimilated, and overtook all other humans.

Many different types of humans can be identified by their description in Indian mythology, which bear similarities to the humans described in the present day scientific

literature. The word *Devta*, in Indian mythology, is assigned to a person having fair skin and strong body, which closely matches to the Neanderthal man. The physical features of the Denisovans, on the other hand, appear to be similar to the description of *Rakshasa*, who possibly, practiced cannibalism, but slowly adapted new food habits, after coming in contact with other humans. Thus the words *Devta* and *Rakshasa* may have been used in Indian mythology, for Neanderthals and Denisovans, respectively. The word *Brahma* has been used for forefather of the entire human population, or may be, Homo sapiens. With the same logic, the word *Brahmin*, may as well have been used for the descendent of *Brahma*, or Homo sapiens, in general. The intermixing of Homo sapiens, Denisovans and Neanderthals resulted in range of skin hues from fair to dark, and changes in body structure, which reflects amongst present day Indian population[9].

Table I

Ancient Humans in Indian Subcontinent

S No	Scientific name	Nearest match in Epic	Remarks
1	Homo erectus	*Vaanara or Hanuman*	Early Humans, Hunter gathers, lived in caves, could communicate with homo sapiens.
2	Homo ergaster	*Rinchh*, or *Jambawanta*	Very hairy humans similar to *Vaanara*, but a bit physically stronger
3	Neanderthal	*Devata, Sura, Deva Sankar*	Fair skinned, tall, handsome and intelligent people. Lived nomadic life. Similar to *Devta*, lived in hills and highland,

			hunters, physically more robust, wore animal skin
4	Denisovan,	*Rakshasa, Asura or Nishachara*	Lived in warmer regions , did hunting in the night. Intelligent, possibly cannibals, good seafarers.
5	Homo Sapiens.	*Brahmin , Bhudeva*	New intelligent humans, used bows and arrows, wore animal hide, used animal meat, fruits and roots as food.

Human population in Ancient India

Ancient Indian mythological texts contain description of several types of humans, apart from the three above. There is a strong possibility of other humans, like Homo Ergaster and Homo Erectus, who might also have co-existed in the above period [10]. These different humans, who could have existed around 10 ka BP, communicated with each other and interbred [11]. In fact the term *Sankar,* as used in ancient literature, probably refers to interbred. *Sankar* was also the name given to a race, similar to Neanderthals, inhabiting high mountains, well adapted to cold regions, and possessed superior physical attributes. It has been described that legendary *Rama*, was a skilled archer, had dark skin colour, and possessed strong and long arms. Different persons, within the same family, having a range of skin hues, have also been described in *Ramayana*, pointing towards mixing of different humans.

Ramayana Era

During the period before *Ramayana* era, possibly near the *Vedic* period, the term *Brahmin* has been used almost universally, for the human population[12] . Later on another term, *Manav,* understood as descendents of legendary *Manu*, has been used for humans, in place of

Brahmin. This may indicate use of the title *Manav*, for mixed population of Homo sapiens, Denisovans and Neanderthals. One may try to decipher the description of various other humans described in *Ramayana* [9]. The titles given in the epic to various humans, as matched to the closest groups, have been given in Table I. Descriptors are, however, purely empirical and have been chosen by intuitive logic. The titles, surnames and other details of lineage, still used in Indian population at many places do hint towards past mixing of population. The terms *Vaanara* as well as *Rinchh*, as used in *Ramayana*, denote humans which belonged to pre Homo sapiens group, rather than apes, as commonly understood, and co-existed in that era along with Homo sapiens [10]. The term *Vaanara* or *Hanuman* has possibly been used for Homo erectus group and *Rinchh* or *Jambwanta* for Homo ergaster, or vice versa. These humans possessed limited skill, lived in mountain caves, used primitive tools, but could interact with the Homo sapiens. The newer humans had learnt use of bow and arrow, and were in a better position to win in war. *Vaanara* or *Hanuman*, possibly, got decimated in *Ramayana* era war, and subsequently became extinct. The other humans, *Rinchh* or *Jambawanta*, also dwindled in number in due course. It is likely that steep fall in temperature coupled with tectonic activities changed the climate, which hastened the pace of their extinction. However the Homo sapiens were supposedly smarter, and could adapt to live under adverse conditions, over the period of a few hundred years. As the surroundings became warmer with time, growth of new civilization picked up pace, with a new set of people.

Human life during Ramayana period

It was a pristine environment and agriculture was probably still not very common as there is no mention of grains as such. Therefore, the *Ramayana* era could be before widespread use of food grains. Oil was known, may be castor oil, used for medicine and burning in lamps. Hunting

was common, animal meat was the staple diet and fur skin was available as a byproduct. Animals hunted most often were wild boars, tigers and antelopes. Animal skin with fur was widely used for keeping body warm as well as a spread for floor to guard against cold. Blue bull was very common in Gangetic plain, and hunted extensively, to save crops and plants. The golden deer was scarce, and therefore would have been an exciting object. A cock has been described in *Ramayana*, indicating its antiquity to 8 ka BP, however, there is no mention of any bird as food. The roots and tubers have been described in *Ramayana* along with berries and jungle fruit without any name.

Climate during Ramayana era

Ayodhya was a rather cold place during *Ramayana* era. The society had just advanced from hunter gatherer stage and agriculture was not yet common. Domestication of cow was not also widely practiced, and dog has not yet been domesticated. People predominantly used animal skin, to wear as well as to sleep on. The tiger skin, a choice of elite, was available aplenty. Clothes made of natural fiber were termed as divine, as it must have been very scarce. The region south of Vindhyas, was covered with thick forest. Sea level was lower than today and the chain of tiny islands, between India and Sri Lanka was filled up with tree branches and stones to create a bund [13]. The word *Himalaya* has, probably been used as a name for any high land where snow is present. The temperatures might have been 6^0 C lower than at present, and accordingly the snow line, at a lower level. The mountains in south, *Mahendragiri* and *Nilagiri*, may have had snow, year around. Horseback riding has no mention in Ramayana, which indicates that the horses were at the stage of taming but not full domestication. Horse was used as sacrificial animal as the term *Ashwamedh Yagna* implies. Society in Sri Lanka at that time, was better developed with well laid out city and ample knowledge of shellac, which could be used for

torches along with vegetable oils, and arrows with burning tip. Oxygen levels in the atmosphere would have been higher than at present, and that might have enabled humans to perform physical feats, at lower ambient temperatures, which may not be feasible in today's climate. The above points indicate that the *Ramayana* era could have existed around 9 ka BP.

A few years after the war, a strong earthquake occurred at Ayodhya, resulting in loss of life. Soon after the earthquake a deluge came down the river *Sarayu,* and surviving population of Ayodhya got swept away in the flash floods. It might have been a disaster of such a magnitude, that the whole population perished, with hardly few people left to tell the tale. The debris brought by the river along with the floodwater got deposited at Ayodhya, which is probably, indicated by presence of several river islands north of present day Faizabad. Ayodhya could not have regained its past glory for long time, possibly, due to worsening cold.

Events in between the Ramayana and the Mahabharata era

The journey of *Bharata* from *Kaikaya Desh*, the present day Punjab, to Ayodhya has been described by poet *Valmiki*, where crossing of two rivers *Saraswati* and *Ganga* has been elaborated [14]. However there is no mention of river *Yamuna*. It implies that the river *Yamuna* did not exist in its present form, during the *Ramayana* era. This leads to the possibility that river *Yamuna* got formed as a result of tectonic changes, which occurred after *Ramayana* period.

The land west of present day Delhi, got lifted up and river *Saraswati* was deprived of water from *Yamuna*. The area of present day Rajasthan, started getting converted into desert. The remnants of river *Saraswati* became pools saturated with toxic gases. River *Yamuna*, changed its course to flow towards south east.

The occurrence of 8.2 ka event during Holocene period gave a big blow to the then civilizations [15]. The widespread melting of ice in higher latitudes resulted in lowering of temperature. Release of ice load resulted in earth quakes and sudden large flow of water in rivers. The deluge which occurred around 8.2 ka BP, destroyed much of the civilizations. By analogy, it could be termed as a marker for end of *Ramayana* era as well.

The river *Yamuna* has been described in *Mahabharata* as a big river, which used to swell and subside unpredictably. It appears that river *Yamuna* was still in its formative stage, which could be the cause of such irregular flow. Towards the end of *Mahabharata* era, Dwarka sank into sea, possibly due to high intensity earthquake. Population increased, food grains went scarce and conflicts arose. Wheat probably had not entered the agricultural practice by that time. There is a mention of *Jambawanta* in *Mahabharata*, who, obviously would not the same person as of *Ramayana* era, but individual from the same race. These people also dwindled fast during *Mahabharata* era and went extinct.

Mahabharata Era

The gap between *Ramayana* and *Mahabharata* era could estimated by animal domestication time as markers. The *Mahabharata e*ra could possibly be around 7 ka BP [16]. By this time, temperature had risen, and the region became more habitable for humans. Cows were very likely, re-domesticated in 8 ka BP, just after recovery from 8.2 ka BP event. Dog has been described as pet in Mahabharata indicating that domestication of dog had taken place by that time. Animal husbandry became well established occupation, agriculture was introduced and rice was available. However drying of lakes and formation of pools, indicate severe drought. The temperature was slowly increasing after the long cold spell, habitats came up, and cloth might have been available. As the temperature was higher, fur skins were not necessary for protection,

and the same have not been described. The large cattle population had detrimental impact on the environment and over grazing changed the vegetation cover of the area. The earthquakes and monsoon fluctuations cast their impact on the geography as well as climate.

Conclusion

Human population before the *Ramayana* era appears to be rather quite different from the one which lived during *Ramayana* period. The descriptions in *Ramayana* point towards possibility of occurrence of severe Earthquake and consequential lake burst, which wiped out a large part of the then population near present day Ayodhya. It appears that 8.2 ka event occurred in between *Ramayana* and *Mahabharata* era. The descriptions in *Mahabharata* indicate change of course of rivers and slowly drying climate. These discussions point towards further studies in this direction.

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