

*It is our usual practice to publish only a single review of a book. In this case, in view of current interest in the topic, we have chosen to print two reviews which provide completely different perspectives.*

– Editors

**The Vedic People: Their History and Geography.** Rajesh Kochhar. Orient Longman, Hyderabad, India. 2000. 259 pp. Price: Rs 425.00.

*1st review*

Rajesh Kochhar is a theoretical astrophysicist, but in this engaging book on the history and geography of the Vedic people, he has transcended the barriers of specialities and has attempted to synthesize data from varied sources to get a broader understanding of the prehistoric India. His book is a valiant effort to interpret the historical and geographical content of the *Vedas* and *Puranas*, using evidence from archaeology, natural history, etymology, geomorphology and astronomy. Besides building up a chronology and context of origin and interaction of Vedic people and Harappans, he tries to find out the location and period of *Vedas*, *Ramayana*, *Mahabharata* and their social milieu. His search compels him to question the conventional wisdom on the above subjects. Core of his thesis is built on the extra-Indian origin of the early Indo-Aryans.

Unravelling the prehistoric India, defined by two major traditions, namely Harappan and Aryan, is a painful exercise. The Harappan culture provides ample archaeological evidence, but no literary tradition. Converse is true for the Vedic culture. The problem is compounded by the fact that the Vedic texts are poor documents of human history, which are full of allusions and invocations and do not provide any direct reference to ancient geography and social life. Using the constraints from natural history, namely Aryan's affinity to horses and Soma plant (alkaloidal Ephedra), Kochhar lends credence to the idea of a West Asian ancestry to Indo-Aryans. Another crucial point he makes is that the earlier parts of the *Rigveda* were composed outside the geographical boundaries of the Indian subcontinent, most probably when these people lived around River Helmand in Afghanistan, on their way to India. Kochhar points out that the initial hymns of *Rigveda* are replete with allusions to geographical entities of Afgha-

nistan, rather than geography of north-west India. For example, the Zoroastrian sacred book, *Avesta*, mentions about River Helmand in Afghanistan which resembles the description of River Saraswati in *Rigveda*. This river is called Harahvaiti in *Avesta*, phonetically the same as Saraswati. The Vedic people during their migration eastward to India carried with them their poetry, religious beliefs and also place and river names and reused them while settling in India.

Harappans were the earlier settlers and belonged to the Greater Indus Valley Civilization that shows a cultural continuity extending from 7000 to 2000 BC, and was spread over a wide area around the Indus River, Rann of Kutch (Dholavira), Saurashtra, along the Ghaggar-Hakra channel, parts of Baluchistan (Mehrgarh) and the Makhran Coast. It was during the late Harappan phase (2000 BC) that the Rigvedic people entered the Indian subcontinent. Harappan culture had a slow death, and was ascribed to increasing aridity of the land. Kochhar, however, rules out an Aryan invasion story. As renowned archaeologist Dales would call it, Harappans met their end not with an Aryan bang, but with an Indus expatriate's whimper, a figure of speech he borrowed from T. S. Eliot. Environmental degradation, such as increasing salinity was also said to be the cause of the decline of another great civilization in Mesopotamia. The late Harappan culture finally made way for the Painted Grey Ware (PGW) culture, developed elsewhere in north India and was active between 850 and 400 BC. PGW marks the Iron Age in India, which helped the people to clear the jungle and use the Ganga plain to its fullest potential. PGW period was succeeded by Northern Black Polished Ware (NBPW) period, which is assigned the time bracket of 600–100 BC. This period is considered to herald the Indian historical era. The PGW and NBPW eras saw the amalgamation of Harappan and Aryan traditions.

PGW represented by wheel-made and well-fired pottery with painted designs was excavated from Ahichhatra, Hastinapur, Purana Qila (Indraprastha)

and some other places known to be associated with the epic *Mahabharata*. What is intriguing here is that the pottery from these sites is younger than the date assigned to the Bharata battle (around 900 BC). Such pottery was also excavated from Sringaverapura in the Allahabad district, a location associated with the *Ramayana*. The oldest settlement in these areas is dated to be 1050–1000 BC, which is pre-Aryan. Younger pottery, defined by a lustrous surface which gives a metallic ring, called NBPW excavated from Ayodhya, another site mentioned in the *Ramayana*, suggests that this site is younger than the Sringaverapura. This is perplexing because Ayodhya is believed to be founded by Ikshvaku clan, 60 generations before Rama. It is clear that the archaeological findings from these sites do not match the perceived period during which the epics were formulated. In fact archaeology comes up with a curious fact that the *Mahabharata* site is older (PGW) than the *Ramayana* site (NBPW), although *Ramayana* (1600 BC) is considered to be an older epic. Kochhar argues that excavated sites do not represent the actual sites referred in the epics, even though they bear the same names. For example, he suggests that Rama's capital Ayodhya should be searched for along the banks of River Haroyu in south Afghanistan whose present name is Harirud, which he has equated with Rigvedic Sarayu. Regarding *Mahabharata* sites, he suggests that they must be near the Indus River, west of Yamuna. In view of the low-level technology (presumably Copper Age) available at that time, Bharata war itself might not have been a major one-time event, but rather a long lasting skirmish.

Kochhar's complex narrative darts back and forth in time and space. A substantial part of the book is devoted to make the point that River Saraswati, alluded in *Rigveda*, is not the Ghaggar-Hakra channel which may have been more watery than present, but certainly not a giant river, as interpreted to be on the basis of Vedic literature. Kochhar argues that Ghaggar-Hakra, as a river sustained by the waters from Sutlej and

Yamuna may have been defunct much before the advent of Aryans or even the Harappans. Probably it remained as a rainwater-fed perennial stream, which supported population centres (Harappan) on its lower reaches. By about 1700 BC, the lower part of the Ghaggar channel started drying up and consequently the later period Harappans migrated upstream to the Siwalik region. After about 300 years, the Rigvedic people arrived from the north-west and they named the upper course of the Ghaggar as Vinasana Saraswati after Naditama Saraswati (Helmand) with which they were familiar. Kochhar feels that the geological evolution of the Ghaggar needs to be understood in greater detail because in this lies the key to prehistoric India. In this exercise, he suggests that geologists should base their interpretation on their own information rather than making inferences based on mythology. He further argues for systematic excavation studies between the Helmand and the Arghandab in south Afghanistan and a detailed geomorphological study of the Ghaggar to understand its transition from a mighty river to a mere ephemeral stream to its present state. This can be taken up as a joint Indo-Pakistan programme, monitored by an international agency.

This book is well researched and contains many insightful observations. The most appealing feature is the method of analysis in which he even uses astronomical references in ancient texts to constrain the geographical context. This book should be seriously evaluated in the context of recent revivalist tendencies in our society and dubious interpretations of our prehistoric past. As Kochhar points out, 'Reconstruction of the past is an important part of the exercise of nation building. A nation's heritage should be based on hard, scientifically tested facts and not on vague notions born out of cultivated ignorance. History is not the mythology of the dead. A nation should be able to look at its past straight in the eye. Only then can it cope with the present and plan for the future'. Who can disagree with this statement? But, I am sure a sizeable number of scholars in India will disagree with his interpretations, which in fact go much against the traditional viewpoints. I hope Kochhar's book will trigger healthy discussion and set the stage for rigorous studies of

shrouded aspects of India's prehistoric period.

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2nd review

The author of this beautifully produced treatise on Vedic antiquity is an astrophysicist cum historian. Out of a total of eleven sections in the book, the initial five can be termed as introductory, while the last two are of interpretations and conclusions based on the main body consisting of sections 6–9.

The book excels in the matter of presentation and analysis of the evidences from a number of different fields. By raising the issue of 'Rama's Ayodhya', the book has addressed the market and the contemporary society's political atmosphere very well. The description given over the inside cover page as well as a review that appeared in *The Hindu* (16 April 2000) tend to credit the identification of the Rigvedic rivers with that of south Afghanistan exclusively to Kochhar and as such the work stands to gain a lot of praise from those who are not aware of the past works in this field. But the work in fact contains very little that is original and the author's approaches bear an uncanny resemblance to those of S. B. Roy, an established Indologist of the last generation. The following parallels are noteworthy:

*Kochhar vs Roy – Striking parallels of contents*

(1) Lack of material evidence in India that can be associated with the Rigvedic people forms the foundation of section 6 of Kochhar's book entitled *Indo-Iranian Habitat*. Roy's monograph, *Early Aryans of India: (3100–1400 BC)*, (Navrang, New Delhi, 1989), also had the same premise and this is evident from the foreword by J. P. Joshi. Joshi writes: 'The issue basically pertains to the date and authors of the Vedas, especially *Rigveda*, and original

home of the Aryans, *although in archaeological parlance we have nothing in the material remains unearthed so far which could positively be associated with Aryan or the Vedic people.*'

Note the emphasis added by the present author. Even though Kochhar's thesis begins with the identification of the Indo-Iranian habitat in Afghanistan under section 6 by the identification of Vedic Soma with the Avestan Haoma, the crux of his arguments is to resolve the paradoxes that have come to light between the archaeological evidences and the literary tradition. In the words of Kochhar: 'There is no material culture in India that can be explicitly associated with the Rigvedic people. As for the post-Rigvedic period of the Brahmanas and Sutras, there is unanimity in associating it with the Painted Grey Ware (PGW). There is, however, nothing at the PGW sites that can be explicitly associated with the literary texts or vice versa. In fact these sites come nowhere near their picture painted by the epic. The *Mahabharata's* Hastinapura is the famed capital of the Kurus. The archaeologist's Hastinapur is a small village where people lived in huts and bred cattle...'

(2) Kochhar's theory of three-phase Aryan invasion is only a 'creative modification of the details' of the original Hoernle's theory used by Roy to propose the existence of non-Rigvedic and Rigvedic Aryans. Instead of expressing his indebtedness to Hoernle, Kochhar says in his notes that the hypothesis is untenable (p. 234). This is not correct. Hoernle's hypothesis originated in 1880 – at a time when no archaeological evidence was available and as such he cannot be expected to be correct in details such as the place of settlements of the successive groups of invaders or migrants. Kochhar in fact has only modified the concept to explain the archaeological evidence that has come to surface in recent times. Roy on the other hand, gave full credit to Hoernle and Grierson and called the successive invaders as 'Asuras' or Alpine Aryans who arrived on the borders of Punjab in c. 3100 BC and the 'Devas' or Nordic Aryan Rigvedins who appeared in Afghanistan in c. 2100 BC. *Kochhar's theory in section 9, summarized on p. 192 contains the same idea modified to fit the latest archaeological findings. Kochhar owed an acknowledgement to*

Roy, especially because of the fact that it was Roy who proposed earlier the arrival of a group of pre-Rigvedic Aryans who authored the Harappan civilization from 2750 BC onwards.

(3) There is nothing new in the concepts such as Central Asian origin of different Aryan tribes, linguistic resemblance between *Rigveda* and *Avesta*, Greater Iranian home, etc. On the contrary, Kochhar's work claims originality for the borrowed ideas under modification and as a whole conveys the impression that the book contains a hitherto unknown hypothesis. See, for example, the description given over the inside cover page:

- Was the *Rigveda* composed in Afghanistan?
- Was the Ghaggar River once the mighty Sarasvati of the *Rigveda*?
- Were the Rigvedic people and the Harappans the same?
- Was Rama's Ayodhya in India?

In *The Vedic People*, well-known astrophysicist Rajesh Kochhar provides answers to these quintessential questions of ancient Indian history. Drawing upon and synthesizing data from a wide variety of fields – linguistics and literature, natural history, archaeology, history of technology, geomorphology and astronomy – Kochhar presents a bold hypothesis, which seeks to resolve several paradoxes that have plagued the professional historian and archaeologist alike. Arguing that a major part of the *Rigveda* was composed in south Afghanistan (after c. 1700 BC) before the Rigvedic people entered the Punjab plain and well before they moved east of the Ganga River...'. .

Undoubtedly, the book conveys the impression that it is Kochhar who has discovered the origin of *Rigveda* in Afghanistan, identified the Rigvedic rivers with those of Afghanistan, it is Kochhar who has fixed the Vedic chronology to be c. 1700 – c. 1400 BC, it is Kochhar who has for the first time synthesized the evidence of the Puranic genealogy, archaeology, astronomy and literary tradition to carve out a reliable picture of Vedic antiquity, etc. In all this Kochhar's book has a striking resemblance to Roy's analysis.

(4) *Rigveda* and Afghanistan: Both the authors have criticized Keith for the

exclusion of Afghanistan from the *Vedic Index*. In the words of Roy (p. 21 of his monograph):

'The modern history of ancient India (The Cambridge History of India) took its present shape and finish by 1910 AD mainly under A. B. Keith who also wrote a *Vedic Index*. Keith (and Macdonnell) depended mostly upon the later Vedic texts for the preparation of their *Vedic Index*, but somehow it is taken that the *Vedic Index* gives the picture of the early *Rigveda* – an impression which is perhaps not quite correct. For instance, western Afghanistan has been deliberately obliterated from the *Vedic Index* and is almost non-existent there. This happened mainly because Keith did not believe that the pre-invasion hymns must necessarily belong to Afghanistan and therefore he altogether excluded the Afghan Sarasvati (Harahvaiti) and Afghan Sarayu (Harayu) from his early Rigvedic geography, obviously on the presumption that no hymn of the *Rigveda* was composed before invasion – a presumption which is perhaps now open to serious doubt as shown by Barrow.'

Roy's words clearly suggest that the 'Afghan origin of *Rigveda*' or 'the identification of Afghan rivers with Sarasvati and Sarayu' are not at all new ideas as is being presented by Kochhar and it had existed since long back. Like Roy, Kochhar has also criticized Keith (p. 13) for excluding the geography of Afghanistan from the *Vedic Index*. See what Kochhar speaks on the identification of the Afghan rivers with Sarasvati and Sarayu:

'We have argued that the river names Sarayu and Sarasvati, that occur in both the *Rigveda* and *Avesta*, refer to the rivers in Afghanistan. Sarayu is the same river, Hari-rud, in both cases, whereas the name Sarasvati applied to the Helmand in the *Rigveda* is transferred to its tributary, the Arghandab, in the *Avesta*. The district of seven rivers, Saptasindhava, is the same in the two texts and refers to the region occupied by rivers like the Farah-rud....'

(5) In sharp contrast to Kochhar, see the approach of Roy in the identification of the Rigvedic rivers (pp. 29–30). To quote:

'Keith knew that the River Parushni was important, because the most important

battle of *Rigveda* was fought there. This was possible for his scholarship to unfathom by a study of the *Rigveda* alone, and his scholastic acumen made no mistake about the singular importance of the battle of the ten kings on Parushni in the history of the *Rigveda*.

'However Keith did not know that Harappa (*Hariyupia*), the most important city of the time, was situated on its south bank – perhaps within a stone's throw from the battle field. Indeed, he did not even know that such a first class city existed anywhere at all at the time... . We are neither more learned, nor more wise, than Keith. Only we know of a crucial fact of which he was not aware, but which was of the essence... . In the Cambridge History of India, Keith says on the same page (p. 71): 'On the names in the *Rigveda*, those of the rivers alone permit of easy and certain identification. The Aryan occupation of Afghanistan is proved by the mention of Kubha (Kabul), Krumu (Kurram), Suvastu (Swat or with fair dwellings) and Gomati (Gumal).

'Going further, therefore, one may assert on the same parity of reasoning, that the rivers Sarasvati (Harahvaiti) and Sarayu (Harayu), mentioned profusely in the early *Rigveda* mean and indicate the identical (and homonymous) rivers Harahvaiti and Harayu also of Afghanistan, because the Aryan occupation of Afghanistan is already 'proved'. To the obvious parity of names (the pairs being mere transliterations) leading to the identity of the rivers of the same area, Keith would not agree. He would merely say in his widely read *Vedic Index* and elsewhere, that these rivers were purely Indian Sarasvati being the Hakra of Haryana – Rajasthan, while Sarayu was the Sarayu of eastern UP, being that area where the Rigvedins had not gone at the time at all... .'

I have provided this long quotation to illustrate the fact that the identification of the Rigvedic rivers with those of Afghanistan is not a new subject at all and even a decade before Roy did not attempt to take credit for any such discovery. His book (pp. 30–31) has detailed discussion on the topic giving due acknowledgement to past authors in an exemplary manner. He sums up the matter as follows: 'In sum, the early Rigvedic Sarasvati and Sarayu rivers have been identified in this monograph

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with the rivers Harahvaiti and Harayu of the west Afghanistan, and all the necessary consequences of that fact are sought to be rigorously worked out in all its detailed ramifications. Just as it would be necessary to study the seven rivers of Pakistan for studying the *later Rigveda*, similarly, it would be essential to study the lands and rivers of Afghanistan itself for tracing the geography and history of the *early Rigveda*.

It is therefore apparent that the work of Kochhar at the best qualifies only to be referred as an extension of the earlier works. Unfortunately Kochhar has not made a sufficient expression of his indebtedness to authors like Roy. Roy's work is undoubtedly a forerunner research in the same field of the history and geography of Vedic people. In fact we can find the seeds of almost all the arguments of Kochhar in the different works of Roy. Central Asian origin, ancient cultures on the banks of Afghan rivers like swat, different Sarasvatis of the early and later *Rigveda*, collation of the puranic/genealogical, astronomical, archaeological, PGW/NBPW, and linguistic evidences, etc., all can be found in the monographs of Roy. Kochhar's work is apparently an update with a far more sophisticated get up and attire designed to impart the impression of an independent work.

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**Water in Kumaon: Ecology, Value and Rights.** Gopal K. Kakodi, K.S.R. Murthy and Kireet Kumar (eds). G.B. Pant Institute of Himalayan Environment and Development, Kosi-Katarmal, Almora 263 643. 2000. 256 pages. Price not mentioned.

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This is a very useful book produced by the collaboration among the Institute

of Economic Growth, New Delhi, the Centre for Multi-Disciplinary Development Research, Dharwad and the G.B. Pant Institute of Himalayan Environment and Development, Almora; a wide umbrella of respectable research institutions. It contains data regarding the central Himalayan water problems, which may be useful for students and for development planners in the new state of Uttaranchal, with perhaps some relevance for the neighbouring state of Himachal Pradesh and also for ICIMOD, Nepal. It may also be useful to NGOs in the region. The maps could have been as clear as the charts and tables. They are too faint.

Before an extensive analysis of the water problems, the first two chapters are of a general nature, dealing with methodology, objectives and the development profile of Kumaon. In these, two major fallacies compel attention. They are figures of forest cover and population densities. Plainsmen have been using the wrong yardsticks to calculate population densities the world over, namely density in total land area. As a result, they come to the wrong conclusion that the hills are less densely populated than the plains. In the context of the fact that in the old state of Uttar Pradesh (before its division), over 60% of the land area was cultivated in the plains and less than 15% in the hills, this common measure is fallacious. People cannot live on vast areas of ice, snow, glaciers and deserts. A truer comparative measure is population per square unit of cultivated land and forests, as forests are 'support' systems for rural communities. When will scientific researchers adopt this more realistic measure, which the reviewer has been pointing out for 20 years? Demographic data should be realistic for development and land use purposes. More so, as the authors of Chapter 2 invite 'major land use and population management policy interventions'.

The second unrealistic fallacy is the long mistaken confusion between forest lands (as per Forest Department sources from 33 to 53%) and actual forest cover, which is far less after 100 years of deforestation. Based on satellite imagery, a study done by Kumaon University in the early 80s showed that good forest cover (i.e. over 60% canopy) in

Nainital district was only about 5% (J. S. Singh), against the 'total forest cover' of 52% for the district in 1995. Even 'dense forest' in the table amounts to 43%!

Such figures need careful satellite imagery confirmation, or else all conclusions and plans may be fallacious.

In Chapter 3, the tables of rainfall data are shockingly discontinuous in this scientific age. In nine locations of table 3.2, only one is complete from 1970 to 1992, and one till 1983; the rest terminate between 1973 and 1982. Similar discontinuities are seen in tables 3.3 and 3.4. In table 3.3, data for 6 out of 7 stations cease after 1983. Researchers must ensure continuity and accuracy of rainfall data, if they are to be of scientific use. This leads to doubts regarding the accuracy of river water discharge figures also. Are Indian researchers working with unreliable data, without serious questioning and rectifying them if headed, especially when they are served by inefficient, unreliable, unchecked, low-level data collection agencies of governments?

Perhaps, the most useful chapter on which to base future policies and plans is on a dynamic model for the Gaula Catchment. The detailed study of one catchment highlights the major single threat to the water resources of the hills – more than 50% drying up of hill springs – a medium-term ecological disaster threatening the next generation. More so, if rainfall is diminishing simultaneously, it beckons a major water crisis.

In Chapter 6 on socio-economic profiles and water management, what one seriously misses is an analytical study of investments made by Jal Nigam and Jal Sanstha, and its results; except for a passing mention of government taps without water! The majority of villagers were prepared to pay for reliable water supply. The authors rightly point to Article 243b of the Constitution – ignored and dormant – about the rights of the people to basic resources, including water, ignored primarily by government agencies themselves. This and the next chapter on water rights could be useful for future local water management plans, jointly between government and local bodies, especially