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BOOK REVIEW

Animal science and plant science in ancient India & her Conservation ethics by Anita Bagchi, Delhi: B R Publishing Corporation, 2025, ISBN 9789348610652, Pp. 216. Price Rs. 3500/-

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The cultural regeneration of the early twentieth century also resonated in writings on ancient Indian science, beginning with Prafulla Chandra Roy's *History of Hindu Chemistry* (1903) and followed by Brajendranath Seal's *The Positive Sciences of the Ancient Hindus* (1915). The line of research thus initiated led to other important publications; two illustrious examples being Girja Prasanna Majumdar's *Vanaspati*, which discussed the plants and plant life as found in Indian treatises and traditions published by the Calcutta University (1927); and *Upvana-vinoda*, A *Sanskrit Treatise on Arbori-Horticulture*, brought out by the Indian Research Institute, Calcutta (1935). This was followed by B. K. Sarkar's *India in Exact Science: Old and New*, published from the same institute, two years later. The inquisitive spirit extended beyond the metropolis; with one Tarini Charan Bhattacharjee of the far-off Tezpur writing *Ghora Nidan* (1932), which discussed the types of horses, their vices, and cures, possibly the first of its kind in India. The exercise continued into the postcolonial period, leading to active engagement with ancient Indian thought across diverse fields of science.

In this context, Anita Bagchi's work, which seeks to trace the origins and development of animal and plant sciences in ancient India, is a welcome addition to the literature. An outcome of her painstaking research in an area, where few historians had ventured into earlier, she single-handedly pieced together important evidence from sources retrieved from the dusty racks of repositories across India. She begins with a brief but relevant historiographical foray in the introductory chapter, followed by an exercise in the development of agricultural science in ancient India, by way of situating the discussion. In view of the latest researches in the field, one may not agree with some of her observations, such as the beginning of agricultural practice in India, or the non-availability of the evidence of rice in the Indus/Harappa civilisation (pp.9–10), and the repetitive assertion of the "advent of the Aryans"; but that certainly does not neutralise the basic proposition of the book; relatively high level of the development of plant and animal science in ancient India.

The book is divided into six main chapters, beginning with the development of agricultural science (II), development of plant and animal science in India (III & IV) followed by a discussion on the conservation measures (V); with one small chapter on the role of women in conservation practices (VI); other than the introductory and concluding ones.

Early Indian minds, endowed with rationalism and inherent curiosity, sought to objectively analyse the natural phenomena surrounding human life. The author draws attention to the intimate connections ancient Indian civilisation had with its natural environment, particularly how ancient Indians observed plants and sought to understand the inner rationale of plant life in tandem with their conservation experiments. To understand modern concerns about environmental sustainability and animal welfare, the book could serve as a useful entry point for demonstrating the ancient Indian approach to plant science and conservation, which is a crucial part of a coherent cultural knowledge system.

The book provides an overview of ancient Indian knowledge of the sciences of plants and animals, which has received inadequate scholarly attention to date. Attempting to provide a comprehensive picture of this knowledge system, the author draws on a variety of sources, including Sanskrit literature and works in regional languages such as Tamil, Malayalam, Kannada, and Ahom. It argues that knowledge systems from ancient India, such as science and conservation, were a shared inheritance that fostered

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cultural unity across regions. The book emphasises the ethical basis for conservation in ancient India, which was often grounded in spiritual and religious beliefs. It implies that the knowledge derived from ancient Indian research on plant sciences has important ramifications for modern concerns about human health and animal welfare, making it crucial for tackling today's environmental and sustainability issues. It explains early conservation tactics, many of which involved intensive protection of natural resources. It connects conservation to ethical principles of ancient Indian culture, such as universal coexistence and careful attention to non-human life.

The chapter on plant science discusses in detail ancient Indian techniques for seed treatment for different types of plants, the constellation of sowing, and the essential care required when planting different species, including the distance between plants. The author also analyses, based on useful evidence, the layout design and watering methods according to the ecological location of the planting site. Thus, Surapala's *Vṛkṣāyurveda* prescribes that "newly planted trees in arid land should be watered every morning and evening" at least for a fortnight. (p.65) Bagchi tells us that ancient Indian texts such as *Vṛkṣāyurveda*, *Lokopakara* (Kannada), *Kṛṣiparāsara*, *Kṛṣi-Gītā*, and several other local-language sources suggest diverse means of caring for and nourishing plants, including trees, to improve yields (p. 68).

This is followed by a fairly long chapter on animal science; while the focus on cows in the *Ṛgveda* is well known, Bagchi's treatment of non-bovine animals, such as the horse and the elephant, deserves attention. The importance of the elephant as the most effective war machine in earlier periods, right from the late pre-Christian era, could hardly be emphasised; it was also used as a tool of diplomacy, in addition to its role in war. It is quite obvious that elephants were of great value and care to the royal power and administrators of the state; hence, from the art of capturing, domesticating, and treating the elephant, many details emerged in the contemporary literature. The author has used the Sanskrit texts *Hastāyurveda* and *Hastividyārnava*, as well as *Gajaśāstra*, and has also referred to local-language sources such as a Kannada text and *Lokopakara* dealing with animal diseases. For similar techniques regarding horses, the other important war instrument, the author has copiously used texts such as the *Aśvalakṣana* and the *Aśvāyurveda*. The interesting point to note is the existence of a professional group of designated physicians, called the *Aśvavaidaka,* in ancient India.

No less important is the chapter (V) dealing with the attitude toward and measures taken for the conservation of plants and animals in ancient India. From the *Kupyādhyakṣa* (Director of Forests) of the *Arthaśāstra* state to the early twelfth-century Chalukya king Somesvara III's directions in the *Manasollasa*, forest conservation has always remained an important part of state policy, for obvious reasons. The author has ably substantiated this point by ample citations and references from a wide range of multilingual sources. The state drive succeeded in creating awareness down the scale; resulting in people's participation in the conservation drive. What followed was the existence of large tracts of forest coverage all over India.

This is also largely true of animal conservation; thus, a number of Asoka edicts imposed a ban on the slaughter of a wide range of animals (pp. 131–132). The compassionate attitude toward animals is reflected in the interest of many contemporary authors in diverse fields of the animal world; a case in point is Hamsadeva's *Mṛga-pakṣi sāstra*, which deals with "the behavioural aspects of a large number of mammals, rodents, and birds" (pp. 149–150). The next chapter deals with the civilisational role of women right from the era of proto-agricultural practices, including the collection and preservation of seeds, as well as the conservation of plants. Citing Vātsyāyana, the author traces women's link to the cultivation of vegetables used throughout India (p. 155). Supplementary information consists of epigraphic evidence from Bengal regarding "horticultural knowledge of women" (p. 156).

This is a well-researched work, full of valuable references to important sources and historical information, which could be immensely useful to critical researchers in the field of plant and animal sciences in ancient India. The reviewers sincerely hope that future researchers in the field will find Anita Bagchi's book useful for their work.

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