

Wujastyk, Dominik (ed.), *Mathematics and Medicine in Sanskrit*. Papers of the 12th World Sanskrit Conference. Vol. 7. Delhi: Motilal Banarsidass, 2009. Viii+208 pp. ISBN 978-81-208-3246-6.

The editor explains in his introduction that the collection of papers in this volume are but a selection of the total papers presented at the conference and represent a typical cross-section of scholarship in a field of Indian studies, which includes the history of Indian science. A unique feature of this volume is its multi-disciplinary

approach and methodology that combines fundamental Indological skills with those of what he calls ‘disciplinary neighbours.’ In other words, authors combine knowledge of Sanskrit philology and Indian codicology with knowledge of mathematics, geometry, medical botany, social history, religious studies, anthropology, and trans-cultural psychiatry. Given the rather precarious position of Indology and Sanskrit studies in the modern-day university, he says that the multi-disciplinary approach illustrated in this volume “has the potential to bring the fruits of Sanskrit studies to a contemporary audience far beyond Indology, and conversely to act as an invitation to thinkers outside Sanskrit studies to consider seriously how Sanskrit cultural studies can contribute to a richer view of global history” (3).

After the late K. V. Sharma’s introductory essay on “Sanskrit and Science: A New Area of Study,” which advocates the study of ancient Indian science in terms of modern science, the eight essays in this collection are divided into two broad topics: Mathematics with three essays and Medicine with five. Neither topic is covered in its entirety, but is represented by different themes and methodological approaches.

Mathematics

A. K. Bag’s “Solution of Second Degree Indeterminate Equations in Sanskrit Texts,” is a rather technical article that aims at explaining the solutions offered by Brahmagupta (c. A.D. 628) to algebraic equations involving 2nd degree or squared indeterminates.

Jean Michel Delire’s “Chronological Inferences from a Comparison Between Commentaries on Different *Śulbasūtras*” is principally a study of Dvārakānātha’s *Śulbadīpikā*, a commentary on the *Baudhāyana Śulbasūtra* and Sundararāja’s commentary on the *Āpastamba Śulbasūtra*. The article ends with an appendix which entails a critical edition, transliteration, and translation of the commentaries of Veṅkateśvara and Dvārakānātha on *Baudhāyana Śulbasūtra* 1.60. Delire’s study offers two important conclusions: 1. it confirms that R.C. Gupta’s earlier conclusion that Dvārakānātha copied from Sundararāja; and 2. it corrects the date

offered by Pingree for Dvārakānātha's *terminus post quem* to the second half of the fifteenth century A.D.

Agathe Keller's "Bhāskara I's Geometrical Diagrams in the *Āryabhaṭīyabhāṣya*" focuses on the uses of diagrams in the seventh century commentary of Bhāskara I, specifically on the *gaṇita* or mathematical section (chapter 2) of the *Āryabhaṭīya*, and includes an appendix on "Bhāskara's descriptions of the construction of tri-laterals and quadrilaterals." The diagrams, states Keller, "were common objects of Bhāskara's mathematical practice. They were used in a matter-of-fact way, mostly in the 'setting-down' part of solved examples. As such their functions is (*sic*) not explicitly given by the commentator ... In the manuscripts, diagrams are representations of working objects, not the working objects themselves" (97–98).

Medicine

G. Jan Meulenbeld's "Some Neglected Aspects of Ayurveda or the Illusion of a Consistent Theory" is a contribution to one of the author's favourite topics of interest in the history of Indian medicine, i.e., the genesis of the *tridoṣa*-theory of medical aetiology and the way in which it came to prevail in āyurvedic medicine. Contrary to the accepted idea that the theory was already established at the time of the classical medical treatises, Meulenbeld demonstrates that by a close reading of the *Carakasamhitā*, *Bhelasamhitā*, and *Suśrutasamhitā* that evidence of the theory's development can be found, indicating that it was still in the stage of evolution when these texts were compiled. Dagmar Benner's "Saṃskāras in Vāgbhaṭa's *Aṣṭāṅgahṛdayasaṃhitā: garbhādhānā, ṛtusamgamana, puṃsavana*" examines the description of essentially religious rituals in a medical book, concluding with an appendix which entails the text of *Aṣṭāṅgahṛdayasaṃhitā Śārīrasthāna 1.17–43*. Most of the descriptions of these religious rituals that occur in the medical texts correspond to those found in the *Vaikhānasagṛhyasūtra*, which in one form or another was probably its source, pointing to a possible connection between Vāgbhaṭa and the Brahmanic tradition of the Vai-khānasas. Based on her research the author offers two main observations: 1. the context for the description of the *saṃskāras* in

Vāgbhaṭa's treatise is not one which is specifically concerned with disease and cure, but is nonetheless medical by virtue of its placement in a medical book. Therefore, she states, it is "not always possible to clearly and sharply distinguish ritual and medicine;" 2. it is not always the case that the rituals are modified to fit a medical context, suggesting that a strict procedure of medicalising extraneous material was not always followed. The last point reflects yet another example of what this reviewer earlier termed the Brahmanic veneer of classical Indian medicine.

Dominik Wujastyk's "Contrasting Examples of Ayurvedic Creativity Around 1700" is a contribution stemming from his participation in Sheldon Pollock's project on "Sanskrit Knowledge Systems on the Eve of Colonialism." It examines three different medical works from the sixteenth and seventeenth centuries in order to get an idea of the trends and possible innovations in medical thinking that could have taken place just before the British period in India. These medical texts are Lolimbarāja's *Vaidyajīvanam*, Vīreśvara's *Rogārogavāda*, and Ṭḍaramalla's *Āyurvedasaukhyam*. The author has not been able to determine definite trends and innovations, but has shown clearly that the three works are very different and very individual.

Antti Pakashlahti's "Terminology of Spirit Illness: An Empirical Study of a Living Healing Tradition" is essentially an exhaustive anthropological study that focuses on a "quantitative and qualitative analysis of spirit terms employed in the illness and treatment discourse of the Balaji healers with their patients. The aim is to examine how spirit terms actually operate, function or 'live' in concrete real-life settings and processes of clinical practice" (156). The data were collected on annual two to four week visits to the Balaji shrines of Rajasthan from 1993-2001. The author shows that spirit illness is a "culturally relevant conceptualization" of mental and emotional problems that could be defined as psychiatric disorders in Western medicine terminology (187). Although the study offers interesting and important contributions to the language of spirit healing and its terminology, it would have been useful had the author compared his findings with what occurs in sections on *bhūtavidyā* and *unmāda* in the medicinal treatises, since these parts represent some of the least

“āyurvedic” parts of the medical books. Although this is the only essay that does not use Sanskrit philology as its essential methodological approach, it has a fundamental linguistic emphasis that focuses on specific words and expressions and their meanings and usage in a religio-medical context.

Finally, Tsutomu Yamashita’s “Some Notes on the *Bheḍa(la)samhitā*” is the result of a re-examination of this medical treatise’s sole surviving manuscript in Telugu script. In addition to showing the importance of the *Bheḍa(la)samhitā* to the study of early Indian medical history, the author has suggested that the probable date of the manuscript to be between 1684 and 1711 and has revealed special features which, among others, point to it as vital link between the *Carakasamhitā* and the *Suśrutasamhitā*.

The scope and methodological approach brought forth in this collection of essays illustrate a possible future viable trend and direction for Sanskrit and Indological studies which have Indian science and medicine as their points of departure. For this reason, the book is recommended to serious students of Sanskrit and Indology.

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