

BOOK REVIEWS

Indian Alchemy or Rasāyana – In the Light of Asceticism and Geriatrics, by S. Mahdihassan, Motilal Banarasidass Publishers, Delhi, Second Revised Edition, 1991, pp. 124, Price Rs 100.

The book under review is not an exhaustive treatment on Indian alchemy but clearly exposes the inadequacy of the earlier treatments on the subject of alchemy authored by eminent western scholars, such as Holmyard, Taylor, Read, etc. The western scholars attributed the origin of alchemy in the medieval west to the earlier Arab influences, scarcely deliberating on the much earlier Chinese and Indian contributions. Evidently, they did not pay much attention to Acharyya Prafulla Chandra Ray's 1902 and 1909 volumes on *History of Hindu Chemistry*. The revised edition of the book appeared only in 1956.

The history of Indian science has been seriously investigated only after the attainment of independence by India. The present reviewer's treatise *Science in India* was published in 1969. Two year later, the INSA monograph, *A Concise History of Science in India* (1971), was published; this contained a wealth of information, including a special chapter on 'Indian Chemical Practices and Alchemy'. Introducing Debiprasad Chattopadhyaya's *History of Science and Technology in Ancient India – The Beginnings* (1986). Joseph Needham admitted the grave paucity of his (and also our) knowledge on ancient Indian science, and expressed his wonder how new insights on this topic are emerging.

Whereas the INSA publication, referred to earlier, noted that 'the origin of alchemy is indeed obscure', and even vaguely suggested that the Indian alchemy was indebted to the Chinese traditions, Mahdihassan emphatically asserts that the earliest brand of alchemy, anywhere in the world, existed in the Vedic tradition of medicine, later pursued by Charaka and Patanjali (the inventor of the term *rasāyana*). Introducing Mahdihassan's book, the celebrated Iranian scholar Seyyed Hossein Nasr writes: "It is now conceded by most scholars that Indian alchemy has a much more ancient history than imagined until now". Mahdihassan has accomplished his objective of tracing the earliest alchemy to the Indian traditions of asceticism and geriatrics.

The author has highlighted several points, such as (1) the lacunae in the accounts of alchemy provided by the western scholars; (2) the Vedic origin of herbal medicine; (3) the metallic preparations in *rasāyana* as mentioned by Charaka; (4) the alchemic concept of 'elixir of life'; (5) the material (*rasāyana*) and spiritual (*sāmkhya* and *yoga*) means of attaining immortality as expounded by Patanjali; (6) the successive phases of Indo-Greek (300 BC onwards), Indo-Chinese (100 AD) and Indo-Arab (500 AD-) contacts on alchemy, etc.

John Read wrote that *Khem* was the ancient name of Egypt and *al* is the Arabic definite article. Such an etymology of alchemy is plainly unacceptable. Mahdihassan has convincingly established that the etymological origin is to be traced to the Chinese *Kimiya*: *Kim* meaning gold and *Iya* denoting juice.

Yellow mineral gold could be converted to a herbo-aurous preparation by triturating with *Amala* and *Myrobalan* as recommended by Charaka. The reducing substances of the plant convert yellow gold into its *red* colloidal form, providing a blood-like substance. *Rasāyana* also means gold-producing or immortality – producing juice, as understood by the early Greeks of Alexandria, who equated *Rasāyana* as *Chumeia* or ‘vehicle of juice’.

The quality of gold having bright and ‘immortal’ colour interested merchants and kings alike. The present reviewer has pointed out elsewhere how Nagarjuna, a 2nd century alchemist, described the conversion of a base metal like copper to artificial yellow ‘gold’ (actually brass) by alloying with zinc (named *Yaśada*, that which gives fame). But the alchemists’ real objective was not production of gold but attainment of immortality in the medical and spiritual sense. This is proven by the later day shift of emphasis from red colloidal gold to cinnabar or mercuric sulphide, another red blood-like material.

The mercurial alchemy was probably introduced in India through the Chinese contact. The Indian Tāntric tradition of two complementary principles of creation: mercury (Śiva) and sulphur (Pārvati) constituting the elixir of life, viz., mercuric sulphide or cinnabar, was shared by the Chinese, Arabs and Europeans right up to the middle ages.

Apart from clarifying the etymology of alchemy and establishing the Indian primacy and global nature of this tradition, Mahdihassan has successfully contradicted the European scholars’ claim that iatro-chemistry or the nexus between alchemy and medicine was a later-day innovation. Iatro-chemistry no doubt came to Europe at a much later medieval period, but then Europe was merely copying a much earlier tradition evolved by India and China.

Astrology and alchemy have often been described as two ‘fossil sciences’. Mahdihassan rightly retorts that alchemy is a ‘living fossil of culture’. I entirely sympathise with his point of view. Newton is literally worshipped as the father-figure of modern science; but did he not believe in alchemy as well as God manipulating creation of the physical world? If Aristotle can be revered, so can Nagarjuna and Jabir ibn Hayyan be admired. After all, Nagarjuna, the Indian alchemist, was the first in the world to describe the downward distillation of zinc vapour. How can alchemy be summarily dismissed as ancient magic?

More importantly, Mahdihassan demonstrates the concordance of Indian alchemical tradition and Indian philosophy, particularly the traditions of *sāmkhya* and *yoga*,

which are still widely studied all over the world. Some Marxist historians of ancient Indian science have legitimately criticised certain anti-science trends in Indian spiritual philosophy. But Joseph Needham has cautioned them 'against pouring out the baby with the bath water'. Mahdihassan has done his best to protect the baby with tender affection.

The book under review is not without defects; as a matter of fact there are a few glaring ones. The treatise is far from exhaustive even though the second edition, published after a gap of 14 years, is claimed to be 'revised'. The author may be requested to expand his theme in the third edition much beyond his meagre 124 small pages and render full justice to Nagarjuna and the illustrious authors of the *Rasaśāstra* texts, the outstanding heroes of Indian alchemy. Their commitment to experimental skill and accurate observation should be discussed vividly. Lack of such details in the present book makes one sad. It is surprising that a scholar of Mahdihassan's stature has not cared to append in his book detailed references. There is not even an index of subjects! How could the reputed publisher let this pass?

Despite the obvious defects, the book merits serious attention of the discerning scholars if not the general reading public at large.

Arun Kumar Biswas
Indian Institute of Technology
Kanpur

History of Medicine in India, edited by Priya Vrat Sharma, Indian National Science Academy, New Delhi, 1992, pp. xi+527. Price Rs 350. US\$ 120.00.

The book has 14 chapters. The first five chapters cover pre-vedic, vedic and post-vedic tradition. Chapter six deals cursorily with Buddhist and Jain medical literature. Chapter nine deals with medical practitioners and the literature. This chapter covers various divisions of Ayurveda. Chapter ten deals with the basic concepts of Ayurveda, pharmacology, pharmacy, preventive and social medicine, obstetrics and gynaecology. Chapter twelve covers Siddha system and chapter thirteen, Indian medicine in Tibet, Arabo-Persian culture area, and Indian medicine *vis-a-vis* world medicine. The last chapter gives a résumé of Indian medicine through the ages. This is followed by a detailed bibliography and an index.

A large number of authors (20) have contributed various chapters or sub-chapters of the book. They have degrees in Sanskrit, Ayurveda, with the exception of one who has degree in modern medicine and one in pharmacy; others do not appear to have any formal training in modern medicine. This is reflected in their treatment of the themes. The latter is within the framework of Ayurvedic thought and practice. The book has identified a number of diseases, herbs and methods of treatment in different periods covered. However, in the absence of a glossary, the meaning of many terms, taken from ancient texts, understanding of the disease or knowledge of the plants is

not fully realised and understood by a person who is not conversant with Sanskrit and the Indian tradition of medicine.

There are a number of statements which should not have been made. At least they should have been substantiated. For example:

“Physicians were the twin Aswins whose marvellous medical and surgical feats described in the R̥gveda indicate the position of healing art in those olden days. They were also experts in plastic surgery, transplantation of organs...”(p.13). The problem of plastic surgery and more so the transplant of organs requires knowledge in a number of areas and an expertise which has been developed as a result of development of modern medical as well as allied sciences in a number of fields.

Similarly, on p. 79 a statement is made:

“The importance of vitamins were recognised as sprouts of barley containing vitamin E are said to be good for strength, reproduction and progeny”. Vitamins are a modern discovery and their recognition, isolation and role cannot be attributed to the ancients. The use of barley sprouts does not really mean a knowledge of vitamin E.

Medicine of every period is part of the socio-cultural framework of a society at a period of time. This is evident in modern medicine as well as in the mass production of drugs. The various chapters of the book do bring out implicitly these dimensions, such as:

“Certain oblations are offered to get a male child” p.72.

“Congenital abnormalities may occur due to use of cow’s flesh” p. 73.

“The woman during menstrual period was considered as untouchable and students were advised not to talk to her” p.76.

A chapter on social and cultural dimension of medicine would have brought out the nature of taboos and prejudices prevalent during different periods and give us a better understanding of preponderance of social philosophy on the theory and practice of medicine. Dr. P.V. Sharma in a brief paragraph does touch upon it, but the reference is cursory.

The book has a wealth of information. In fact, it is a source book of literature on medicine, including the herbs and plants used in the treatment of various diseases, but it does not give us an idea of the evolution of medicine in India. Dr Sharma has tried to fill the gap in the last chapter, a résumé, but it is too cursory. Further, it is neither comparative in the text of comparative developments nor analytical enough to bring out the strong and weak points of the theory and practice of medicine in India.

In the last but one chapter, Dr Sharma compares the development of medicine in different culture areas. He says:

“India was never aloof and isolated from other countries of the world and naturally it may be presumed that the process of interaction was operating among such countries”. p.485.

Though in a chapter the impact of Indian medical science and practice on Tibetan and Arab-Persian medicine is indicated, nowhere in the book, in the treatment of the subject the impacts of ideas and practices from outside India are indicated. A reading of the text gives an idea that medicine in India developed totally indigenously without any influence from outside. The literature on the basis of which the theme is developed is exclusively religious texts or medical treatises. Such a treatment also brings to surface a major lacuna of the book – a discussion of the Unani system of medicine in India. Its leaving out indicates that the authors do not consider it part of the Indian medical system. Though the Unani system came from outside, it interacted with the Ayurvedic and Siddha systems; it even incorporated various tribal practices, and developed in India in a remarkable way. Though it died down in the countries of its origin and early development, it flourished in India and continues to be one of the major systems of medicine in India.

The book is a step in developing a proper history of medicine in India, and it may serve as a basis of comparative and analytical studies to come.

A. Rahman
Former Director,
National Institute of Science,
Technology and Development Studies,
New Delhi