

HISTORY OF ANCIENT INDIAN (VEDIC) MATHEMATICS*

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Preliminary Remarks and Introduction :

75 years later than the founding of this great University of Calcutta and 75 years earlier than now, the university itself published a very remarkable book on Vedic mathematics which is the theme of the present oration in a broad sense. The book is titled *The Science of the Sulba* (1932) and is devoted to the Vedic science of geometry which is technically called by the name śulba. The excellent monograph¹ contains the lectures delivered by the veteran scholar Dr. Bibhutibhusan Datta (1888-1958) who had obtained the D.Sc. degree in Mixed (i.e. Applied Mathematics) from this University in 1921 but who resigned the professorship and renounced the world to become known as Swami Vidyaranya².

Datta delivered the invited lectures in deference to the wishes of his teacher Dr. Ganesh Prasad (the Rashbehari Ghosh Professor of Calcutta University) who himself was a historian of mathematics. In fact, B. Datta and A. N. Singh, both student of G. Prasad, are the joint authors of the famous *History of Hindu Mathematics* which is still a standard book³ on the subject. Actually this book when first published had only two parts (Lahore, 1935 and 1938) and the third part could be published only posthumously in a series of articles. Datta was a great historian of Indian mathematics and a prolific writer. He was the first Indian to be elected as the Corresponding Member of the International Academy of the History of Science (Paris). His learned work proved to be very inspiring to other scholars in the field of ancient and medieval Indian mathematics.

In the world scenario, the 50th death anniversary of George Sarton (1884-1956) has been just celebrated a few

months ago. He was the pioneer discipline-builder of the new field—the History of Science (in general and worldwide). As early as in 1912, he founded and supported *ISIS*, an international journal of History of Science which was later adopted by the History of Science Society founded in 1924 (Isis is the name of an Egyptian goddess). Sarton's monumental *Introduction to the History of Science* (3 volumes in 5 parts, Baltimore, 1927-1948) is still useful.

In this era of science and technology, it is paramount to reflect the unity and universality of science. The study of History of Science not only provides the humane and humanity side of the sciences but also serves as a bridge between humanist and scientist in general. 'History makes a man wise' is a well known saying. Historical knowledge of any subject will certainly increase our understanding of the subject and broaden our outlook.

Sarton's view was that scientists themselves should undertake study and research in History of Science. This is specially desirable in case of History of Mathematical Sciences. History of Mathematics is a dynamic subject. Before 1930, it was mostly the glory of the Greeks. After that, the picture changed by the findings in Babylonian mathematics. Eurocentrism is also challenged by researches in Arabic, Chinese and Indian mathematics, and many new dimensions to history of mathematics have been added. Streams of science in different civilizations flowed, like rivers, into the ocean of modern science.

Some Problems Concerning History and Historiography of Indian Mathematical Sciences

Chronology is the backbone of history. For ancient India, the problem of a sound chronology continues to be a serious matter. An important point to keep in mind in this regard is that the date of a historical event and that of a work which records that event may be widely apart in time. The difficulty is that writers often give chronology without caring for critical coherency, internal consistency,

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