Prabodh Chandra Sengupta (1876–1962): Historian of Indian Astronomy and Mathematics



1 Introduction

Prabodh Chandra Sengupta, the younger son of Ram Chandra Sengupta, was born in a village near Tangail in Mymensingh district (now in Bangladesh) on 21 June 1876. He had his early education in the Santosh Jahnavi H. E. School and passed the Entrance (Matric) examination with sufficient merit to obtain a scholarship. Subsequently he studied in Calcutta passing the First Arts (Intermediate) examination from the Presidency College, the B. A. examination with first class honours in Mathematics from the General Assembly's Institution, and the M. A. examination in Mathematics from the Presidency College in 1901.



Professor Prabodh Chandra Sengupta (1876–1962)

Gaņita Bhāratī, Vol. 1, (1979), pp. 31-35.

© Springer Nature Singapore Pte Ltd. 2019 K. Ramasubramanian (ed.), *Gaṇitānanda*, https://doi.org/10.1007/978-981-13-1229-8_42 Professor Sengupta entered the educational service under the Government of Bengal in July 1902 and worked as a teacher in various government schools till 1914. Several renowned scholars like M. N. Saha and R. C. Majumdar were his students during their school days in Dacca.

Shortly after passing the B. T. examination, Prof. Sengupta was appointed as a Lecturer in Mathematics at the Chittagong College in 1914. Later on in 1916, he joined the Bethune College, Calcutta, which he served till his retirement from the government service in January 1934. He was made Professor of Mathematics in 1921 under Bengal Educational Service.

2 Research Contributions

Professor Sengupta is best known for his researches and publications in the field of Indian astronomy and chronology which date from 1916 and lasted for a long period of 40 years. He also delivered lectures in Indian Mathematics and Astronomy at the Calcutta University. The arrangement of teaching Indian Astronomy (2 papers) and Indian Mathematics (2 papers) in M. A. Course (Group IV) was there under the University Department of Ancient Indian, History and Culture (see *Journal of Ancient Indian History*, Vol. II, 1968–1969, p. 3).

Besides translating (1927a) the *Āryabhatīyam* of Āryabhata I (born 476 AD). Professor Sengupta gave us his famous translation (1934) and edition (1941) of Brahmagupta's Khandakhādvaka (665 AD). These two parts were dedicated to Sir Ashutosh Mukherjee (1864–1924), the Founder of Research Studies in the University of Calcutta, who had nicely utilized the handsome donation from Maharaja Manindra Chandra Nandy of Cossimbazar for the promotion of researches in the domain of ancient Indian Mathematics and Astronomy. Professor Sengupta got inspiration also from others like Professor Ganesh Prasad (1876-1935), Hardinge Professor of Pure Mathematics, Calcutta University, whose two students, B. Datta (1888–1958) and A. N. Singh (1901–1954), turned out be famous historians of Indian Mathematics. Professor Sengupta's numerous papers on various aspects of ancient Indian Mathematics and Astronomy including comparison with Greek methods are the result of his deep research and labour. His introductions attached to his translation of Khandakhādyaka, to the Calcutta edition (1935) of Burgess's translation of the Suryasiddhānta and to B. Misra's edition of the Siddhāntaśekhara (see [1944/47]) are equally valuable.

By applying the so-called 'astronomical method', Professor Sengupta determined the dates of a number of events and works related to Indian history, culture and civilization and published several papers on the subject. At the suggestion of Professor M. N. Saha, FRS, Professor Sengupta submitted a scheme of research work to the Calcutta University which was duly approved. Mr. Nirmal Chandra Lahiri worked as a research assistant in the scheme which was carried out from 1939 to 1941. The result is the famous work *Ancient Indian Chronology* (Calcutta 1947) which reflects profound knowledge of Astronomy, Mathematics and Sanskrit.

2 Research Contributions

Professor Sengupta was the President of the Technical Sciences Section of the XIIth All-India Oriental Conference (Benares, 1944). His publications continued to come out when he was well over 80 years. He died in Calcutta on 6 August 1962 leaving his widow, five sons and three daughters and grandchildren to mourn his loss. In his passing, India lost a pioneer worker in the field of ancient Indian exact sciences. A very good way to cherish his work and memory will be to bring out in a book form a collection of his numerous papers on Indian Mathematics and Astronomy.

3 Bibliography of P. C. Sengupta

The following abbreviations are used:

| BCMS = | Bulletin of the Calcutta Math. Society. |
|------------------|--|
| JASP[L] = | Journal of the Asiatic Society of Bengal (Letters). Was called Journal |
| | of the Royal Asiatic Society of Bengal earlier. |
| <i>JDL/JDS</i> = | Journal of the Department of Letters/Science (University of Calcutta). |
| YB = | Year Book of the Asiatic Society of Bengal. |
| | |

| A Text-book on Graphs for Schools and Colleges, Albert Library, Dacca. |
|---|
| Papers on Hindu Mathematics and Astronomy, Part I, Cotton Press, Calcutta. |
| 'Parallax in Hindu Astronomy', In the <i>Report</i> of the Indian Association for the Cultivation of Science (Calcutta) for the Year 1916, pp. 15 ff. |
| 'Origin of the Indian Cyclic Method for the Solution of $Nx^2 + 1 = y^2$ ', <i>BCMS</i> 10, pp. 73–80. Reprinted in <i>JDS</i> 2 (1920), 69–76. |
| 'Āryabhaṭa's Method of Determining the Mean Motions of Planets', <i>BCMS</i> 12, 183–188. Reprinted in <i>JDS</i> , 4 (1922), 237–242. |
| 'Time by Altitude in Indian Astronomy', BCMS 18, 25–28. |
| 'The <i>Āryabhaṭīyam</i> (a translation)', JDL 16, Article 6, 1–56. |
| 'Āryabhaṭa, the Father of Indian Epicyclic Astronomy', JDL 18, Article 3, 1–56. |
| 'Date of Composition of the Ramayana', JDL 19, 43. |
| 'Āryabhaṭa's Lost Work', BCMS 22, 115–120. |
| 'Brahmagupta on Interpolation', BCMS 23, 125–128. |
| |

| 456 | Prabodh Chandra Sengupta (1876–1962): Historian of Indian |
|---------------------|--|
| [1931a] | 'Greek and Hindu Methods in Spherical Astronomy', JDL 21, Article 4, 1–25. Also in his [1934], 172–193. |
| [1931b] | 'History of the Infinitesimal Calculus in Ancient and Medieval India', <i>Jahr. Deut. Math-Verein</i> 40, 223–227. |
| [1932] | 'Hindu Luni-Solar Astronomy', BCMS 24, 1–18. Also in his [1934], 154–171. |
| [1932a] | Infinitesimal Calculus in Indian Mathematics: Its Origin and Development', <i>JDL</i> 22, Article 5, 1–17. |
| [1932b] | (An opinion on Sripati's <i>Siddhāntaśekhara</i> and its Calcutta edition). Attached to B. Misra's edition of the work, Part I, p. 522 (Calcutta University). |
| [1934] | The <i>Khaṇḍakhādyaka</i> (of Brahmagupta). A translation with Introduction, Calcutta University, Calcutta. Appendices I, II, III are, respectively, [1932], [1931a], and 'Hindu Epicyclic Theory', pp. 194–200. |
| [1934a] | 'Age of the Brahmanas', Indian Hist. Quart. 10, 533-540. |
| [1935] | Introduction to Calcutta University Edition (by P. Gangooly) of E. Burgess's Translation of the <i>Sūryasiddānta</i> , pp. VII–L. |
| [1937] | 'Hindu Astronomy', <i>In Cultural Heritage of India</i> , Vol. III, pp. 341–377 (Ramakr-ishna Centenary Committee, Calcutta). |
| [1937a] | 'Some Astronomical References from the <i>Mahābhārata</i> and their Significance', <i>JASB</i> (L) (3) 3, 101–119. Also <i>YB</i> , 3, 157–158; and [1947], 1–33. |
| [1938] | 'Bharata Battle Tradition', <i>JASB</i> (L) (3), 4, 393–413. Also <i>YB</i> , 3, 158; and [1947], 34–59. |
| [1938a] | 'Solstice Days in Vedic Literature', <i>Ibid.</i> 415–435. Also YB, 3, 158; and [1947], 155–174. |
| [1938b] | 'Madhu-Vidya or Science of Spring', <i>Ibid.</i> , 435–443. Also YB, 6, 158–159; and [1947], 60–71. |
| [1938c] | 'When Indra Became Maghavan', <i>Ibid</i> , 445–453. Also YB, 6, 150; and [1947], 72–81. |
| [1938d] | (About whether the <i>Mahābhārata</i> references are later interpolations). <i>Science and Culture</i> (of July 1938), 26–29. |
| [1940–41] [1941] | 'Kanishka Era', <i>Indian Culture</i> 7, 457–462. <i>The Khaṇḍakhādyaka</i> by Brahmagupta. Edited with the Commentary of <i>Caturveda</i> <i>Pṛthūdaka</i> , Calcutta University, Calcutta. |
| [1941a] | 'The Solar Eclipse in the <i>Rgveda</i> and the date of Atri', <i>JASB</i> (L) (3), 7, 91–113. Also <i>YB</i> , 8, 165–166; and [1947], 101–131. |
| [1941b] | 'Time Indications in <i>Baudhāyana Srautasūtra</i> ', <i>JASB</i> (L) (3), 7, 207–214. Also YB, 8, 180; and [1947], 198–207. |

- [1942] 'The Gupta Era', JASB L (3), 8, 41–57. Also YB, 8, 179–80, and [1947], 244–262.
- [1944] 'Hindu Astronomy', *Science and Culture*, 9, 522–526.
- [1944/47] (With N. C. Lahiri): Introduction (dated 1944) to B. Misra's Edition of Siddhāntaśekhara Part II (Calcutta, 1947), pp. VII–XLI.
- [1945] 'Astronomical Time Indications in Kalidāsa', *JASB* (L) (3), 11, 14–23. Also *YB*, 11, 109–110; and [1947], 263–278.
- [1945/48] H. Sastri's A Descriptive Catalogue of Sanskrit Manuscripts in the Collection of the Royal Asiatic Society of Bengal, Vol. 10 (Jyotisa); revised and edited by Sengupta, 2 Parts, Calcutta.
- [1947] Ancient Indian Chronology, Calcutta University, Calcutta.
- [1949] 'On the Meaning of the *Kali-ahargana* as to the Date of *Yuktibhāṣa* (Special Note). *JASB* (Science) (3), 15, 12–13.
- [1950] 'Researches in Ancient Indian Chronology', JASB (L) (3), 16, 1–13.
- [1950/53] 'Date of Bharata War: 'A Rejoinder', J. Ganganatha Jha Res. Inst. 8 (1950–51), 203–214; and 10 (1952–53), 21–38.
- [1951] 'The Danavas in Mahābhārata', JASB (L) (3), 17, 177–185.
- [1952] 'Note on Dr. N. Sen's Criticism of a Chapter in *Ancient Indian Chronology*', *JASB* (L), (3), 18, 7.
- [1954] 'A Note on Bhismastami or the Anniversary of Bhisma's Expiry', JASB (L), (3), 20, 39–41. Also YB, 20, 182.
- [1955] A Short Note on Khana's Time', JASB (L), (3), 21, 59–61. Also YB, 22, 226.
- [1955a] 'Shifting of the Date of the Bharata Battle from 2449 B.C: A Possibility?' *Science and Culture* 21, 5–8.
- [1956] 'The Historicity of the Mahābhārata on the Basis of Astronomical Data', JASB (L), (3), 22, 75–84.

Note: Prof. Sengupta also authored numerous contributions on Indian chronology in Bengali which appeared in Bengali periodicals like *Sri Bharati, Bharatavarsa*, etc.

Acknowledgements I am grateful to Dr. P. C. Sengupta, M. B., D. Phil, son of Professor P. C. Sengupta, for supplying valuable information and material for the present article.