

Science Writing in Medieval Assam

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Abstract

Science writing in the medieval period is an important subject of study for a person engaged in science communication practices in Assam. Though it was not modern science, a set of traditional knowledge amalgamated with some borrowed knowledge from outside Assam during the medieval period had been prevailing in the land. The writings on that knowledge are found in the form of several books on different subjects. The research paper carries out a study of the existing science writings of the medieval period of Assam. The study will help the researchers and practitioners of science communication in Assam with the analysis of those available science writings with their salient features. This paper tries to provide a descriptive account of the science writings before the advent of the British in Assam.

Keywords: Medieval Assam, Science Writing, Ahom Kingdom, Science Communication.

Introduction

In Assam history, the period from 1228 to 1826 is known as the medieval era. In 1228 the first Ahom king Chao-Lung Siu-Ka-Pha established the Ahom Kingdom in Assam. Assam remained as a sovereign state till 1826. On the 24th February of 1826 Assam went to the hands of colonial British according to the treaty of Yandaboo¹. British administration shattered the medieval structure of the Assamese society. Before the advent of British, the Assamese Society was a tribal feudal society. In that medieval Assamese society the growth and development of science was quite remarkable. Numerous books on different scientific subjects were written in that period.

Importance of the study

At a time when science communication is gaining momentum in India, it is important to learn the tradition of science communication in the country since the ancient times. Assam being the one of the North Eastern States of India too had a glorious tradition of Science Communication during the medieval period. Science writing, a branch of science communication had its origin in Assam during the medieval period of Assam history. Anyone who is interested to the subject science communication in Assam should know the history of science writing in medieval Assam.

Objective of the study

The objective of this research paper is to discuss the science writings in the Medieval Assam and their characteristics.

Review of Literature

Bokatial, Dr. Bhadreswar (2000), Ahom Rajsabhar Sahityar Buranji, Purbajyoti Prakashan, Dibrugarh is a book written on the available literature written on the literature available during the reign of Ahom kings. Literature at that time was composed under the patronage of the kings. In the fifth chapter of this book the writer gives an account of the writings on practical knowledge including medicine and technology available at that time. So, a lot of information has been obtained from this book while doing this research. But as the book is dealing with all the available literature of that time, it has not offered any specific description on the science writings in Medieval Assam.

Borpujari, H.K. (Ed) (2007) Comparative History of Assam, Publication Board of Assam, Guwahati-21 is a book of Assam history. In the Vol – II of the book the socio-economic and political condition of Assam in Medieval period is described with authentic references. The noted historians of Assam have contributed to the history with their writings. For the information of historical facts of Assam, this is one of the authentic documents available till date. It gives an idea about the Socio-economic and political condition of Assam along with the information of the books written in the past. So, this can be used as a reference book. But it has not

specifically dealt with the science writings in Medieval Assam. That is why, this study tries to focus on the science writings in medieval Assam only and find out their salient features.

Majumdar, Paramananda (2007) *Asamat Bijnan Sarsar Dhara*, Publication Board, Assam, Guwahati-21 is a book which encompasses the entire tradition of scientific knowledge since its ancient times. There are several references and descriptions about the science writing in Medieval Assam in the book. But it encompasses a vast area, the tradition of scientific knowledge and practices. Therefore, it is not a specific study on the topic 'Science writings in Medieval Assam'. In this paper, it is aimed to focus on the Science writings in the Medieval Assam only.

Rajkumar, Sarbananda (2000) *Itihase Soaura Chashata Bachar*, Banalata, Dibrugarh – 1, is a book of History on the medieval period of Assam. In this book too the description of the literary contributions in Assamese during the Ahom era is found. But being a history book, it does not focus much on science writing in medieval Assam only. So, this book is used as a reference book while conducting the research.

Methodology

The research paper follows the descriptive method to discuss the various aspects related to the science writing in medieval Assam. Data has been collected from both primary and secondary sources. The science writings of that era are treated as the primary sources and the books and articles writing about those writings are considered as secondary sources of data.

What is Science Writing?

Robert Gannon in the Introduction of his book 'Best Science Writings' said,

"Science writing is often confused with technical writing and scientific writing. It is neither. The difference lies mostly in the audience. The technical writer prepares "technical" material – reports, memos, brochures - for a captive audience that needs the data: a client, a colleague, an organization. A scientific writer preparing scientific papers, writes for readers who want the information – many of whom are in the discipline and must keep abreast of what's happening.

But the science writer (or science journalist) addresses the lay public. This job is much more complicated. The science writer must make complex theories and systems clear to a large, diverse readership, and must do so with the utmost clarity, accuracy and excitement. He or she must win the hold the attention of readers who don't need the information, are easily bored and demand to be convinced that what the writer has to say is worthy of their continuing attention. Bored readers quickly flip to other articles.

So the science writer's most difficult task is to make the story interesting. This is done with pleasing styles, colourful anecdotes, sparkling quotes, clever descriptions and other devices that dramatize the information."²

Duke University in North Carolina in its official website also defines it as, "Science writing is

writing about science for the popular media. The audience is much more general -- anyone with an interest in science."³

From the definitions some characteristics of Science writings may be summed up. These are as follows:

1. Science writing is a connection between scientific knowledge and common people.
2. Aim of scientists is precision, but the aim of science writers is simplicity
3. 'Science's human application', is the goal of science writing.
4. These inform people about facts to enrich knowledge of the common people.

Subject-wise division of Science Writings in Medieval Assam

Mathematics

In medieval Assam primary mathematics was a core subject taught in the then schools, locally known as 'Tool' or 'Chatuspathi'. Bakul Kayastha, a scholar in the court of King Narayana translated a portion known as 'Leelawati' of Bhaskaracharyya's second book 'sidhanta Siromoni'. Now another book of Bakul Kayastha is available in Assam. It is 'Kitawat manjari'. In this book he writes about how to keep records of various items of royal treasury, to add, deduct, multiply and subtract, to measure the area of land etc. Influenced by the book of Bakul Kayastha, the Christian Missionary Eliza Brown in 1845 wrote a book entitled 'Ganitar Kitap'.

Eliza Brown with assistance of her husband Nathan Brown wrote and published a book entitled 'Ganitar Kitap'.

Kabiratna Dwija, another Assamese mathematician translated the 'Leelawati' of Bhaskaracharyya in which equation of algebra and rules of taking roots are included. Another writer Kashinath wrote 'Onkor Arjya'. Churamoni Diwja wrote a book entitled 'Churamoni' where he mentioned Bakul Kayastha as his teacher.

In ancient and medieval Assam, mathematics was practiced by the Kayastha community. They were at home in record keeping and taking measurements of the land etc. Therefore a trend in mathematics in Assam was prevailing in medieval period which was known as 'Kaitheli Onka'

Astrology

Before the systematic study of astronomy, in Assam there prevailed the practice of Astrology in ancient and medieval period. The temples like Nabagraha in Guwahati and Surya Temple in Goalpara were the places from where the movements of the planets and heavenly bodies were observed at that time. The ancient name of Guwahati, the capital city of Assam was 'Pragjyotishpur', meaning the town of the East to study astronomy.

There are number of books on astrology in Assam. 'Kamrupiya Nibandhaniya Khandasadhyā', was first book on astrology in Assam. It was written in 7th Century which discusses the rules of worshipping the planets. Damodar Bipra wrote 'Jyotish Sar Sangrah' in 14th Century AD. Several Daibagyas were appointed by the Ahom and Koch kings to count the Days in a year. A daibagya in the court of king

Biswasingha named Sribar, wrote one such book entitled 'Rashi Jora Grantha'.

Several books of astrology were written in both Sanskrit and Assamese during the reign of King Narnarayana. 'Grahan Koumudi' and 'Siddhanta Koumudi' were written by the teacher of Narnarayan and Chilarai, Pitambar Siddhantabagish. 'Jyotirmuktawali' written by Banshibadan Sarma, 'Samayamrit' written by Mathuradas Bidyalankar, 'Adbhut Sar' written by Mahadev Sarma and 'Sambatsar Ganana' written by Krishnadeva Mishra were some other books of that period. Kabiraj Chakrabarty wrote a Sanskrit book in 1643, on astrology entitled 'Din Kiranawali'. 'Bhaswati', his a translated work attributed to him which was originally written by Pandit Satyananda in Sanskrit. Lakhmipati Sarma wrote one more book in Sanskrit language namely 'Jyotirmala' in 1691.

Medical Science

In the medieval Assam one noted scholar of the Brajjana sect of Buddhism wrote a book on medicine entitled 'Jogshatak'. Another scholar of 14th – 15th century was Chakrapani Dutta.

'Rajbaidya' a physician was appointed by the the Konch kings. According to Darang Rajbanshawali, King Biswasingha himself had extensive knowledge of medical science.

Ananga Kabiraj wrote 'Baidyakalpataru' during the Ahom rule. It was written under the patronage of Swargadeu Lakshmingha (1769-80). In 1850, Brajanath Sarma wrote another book entitled 'Baidya Saroddhar'. 'Chikitcha Sanghita' by Sridamodar and 'Baidyakalpadruma', 'Nidan Sangrah' and 'Chikitsarnav' by unknown author were some other books on medicine written during the rule of Ahom kings.

Veterinary Science

The most remarkable book on veterinary science was 'Hastibidyanav' written by Kukumar Borkath under the patronage of queen Madambika, wife of Swargadeu Sivasingha in the 18th century in Assam. The basis of this book was the Sanskrit book entitled 'Gajendra Chintamani'. Another book written by Sagarkhari Daibagya in 18th century was 'Ghora Nidan' on the subject of caring the horses and the treatment of their diseases. His successor Suryyakhari Daibagya wrote another book on the same subject namely 'Ashwa Nidan'.

Barriers in the development of science in ancient Assam

Social System was not favorable

In the medieval era, people of Assam were mainly dependent on nature. They did not attempt to control the natural forces in the scientific way. Due to the geographical location of the place foreigners hesitated to come to the land who could have brought the new scientific knowledge with them.

The caste system in Assam too posed a hurdle in the study of science. It created a gap between theory and practice of science. The people of high cast knew the theories. But they were indifferent of the practice of those theories due to their superiority complex. On the other hand, people from the low caste were lack of theoretical knowledge. So,

they failed to go for a holistic approach in this direction even they did the entire practical works. For example, people from the high caste had the knowledge of medical science. But they seldom cut animals. So, they did not have proper idea of anatomy. Without practical knowledge, their skills and knowledge remained imperfect. On the other hand low caste people are accustomed to cut the bodies of birds and animals for meat. Unfortunately, the theoretical knowledge was absent in them. So, medical science could not grow properly in that time.

Bhakti Movement in Assam

Another reason for which scientific mentality did not grow up in Assam in the medieval period was Bhakti Movement. Because, the Neo-Vaishnavite religion ignored the very existence of the physical world. It also did not give emphasis on reason. The only aim of that religion is to attain 'mukhy' (salvation) through the 'Naam'(hymns to the almighty). So, the prerequisite of scientific temperament was ignored in the society dominated by the Bhakti Dharma. Therefore, people lived in an atmosphere prepared by religion in which free thinking was almost impossible in the medieval Assam.

Conclusion

From the above analysis, it is obvious that in spite of the challenges and limitations, in medieval Assam, a considerable number of science writings appeared in the form of books. Though the books were hand written on the bark of Sanchi Tree, in most cases numerous copies were done from the original ones. So, the process of science communication in its early form was prevailing with those science writings in Assam during the medieval period.

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