

## BANKIM CHANDRA : FIRST WRITER OF POPULAR SCIENCE IN BENGALI

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### Abstract

Bankim Chandra Chattopadhyaya (1838-19-894), Father of the anthem of Indian independence movement- '*Bande-Mātaram*' and Emperor of Bengali Literature was the first writer of popular science in Bengali. He was keenly interested with the nascent scientific discoveries of his time (second part of the 19<sup>th</sup> century) and was well-acquainted with them. He wrote articles on those themes in Bengali. He did not translate any of those works in Bengali. He also presented some of his innovative ideas about science of the day. This brief article reviews his thoughts on science.

**Key words:** Ānand Math, Antiquity of Man, *Bande Mātaram*, Bangadon Shan, *Dhula*, Protoplasm, *Viśvaparicay*

Bankimchandra Chattopadhyaya (1838-19-894), Emperor of Bengali Literature was the first writer of popular science in Bengali. It was during the second half of the 19 century when he was alive and active. He was a Presidencian (alumnus of Presidency College, Calcutta, Estd. 1817) and also the first graduate of the University of Calcutta (Estd. 1857). He was keenly interested with the scientific discoveries of the time. He also presented some of his innovative ideas about science of the day.

This trend continued. The second important write-up in popular science in Bengali was by Rabindranath Tagore (1861-1941), Nobel Laureate in Literature, 1913, whose booklet- "*Viśvaparicay*" 1937 (Introducing the Universe) is an excellent work. It was dedicated to our eminent scientist- Ācarya Satyendranath Bose (1894-1974), father of Boson in Particle Physics. His aim was to popularize science in vernacular among common people and for this purpose he founded *Bangiya Bijñan Pariṣad* in Calcutta in 1948. Now, many people are doing it. Bankim's tradition continued unabated.

As we all know Bankim is the father of the lyrical song- "*Bandemātaram*" (Hail to Mother), originally written in 1874, later included in his novel- '*Ānandamath*' (Abbey of Bliss) became the national anthem of Indian National Congress (Estb., 1885). He was a beacon of light in various aspects of Bengali literature including writing articles on popular science in Bengali as listed below:

1. '*Āścarya śakratpat*' (Great Solar Eruption)
2. '*Ākāṣe Kaṭā Tārā Āche?*' (Multitudes of Stars).
3. '*Dhūla*' (Dust)
4. '*Gaganparyātan*' (Aerostation )
5. '*Cañcal Jagat*' (The Universe in Motion)
6. '*Katakāl Manuṣya*' (Antiquity of Man)
7. '*Jaibanik*' (Protoplasm)
8. '*Parimān Rahasya*' (Curiosities of Quantity of Measure)
9. '*Candralok*' (The Moon)

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Bankim was interested in popular science education. He used to publish magazine-*Baṅgadarśan*. All these articles were compiled in a book and first published in 1875. There was another edition of the book during his life time.

He was well acquainted with the scientific works of the day. Communication was meager and limited. Resources were very small but he always tried to keep himself up-to-date.

He was influenced in his knowledge of science by the scientists of the day. Among them were the following:

1. Charles Augustus Young (1834-1908)- U.S. astronomer who made the first observation of the flash spectrum of the Sun during the solar eclipses of 1869 and 1870. He studied the Sun extensively, particularly with the spectroscope, and wrote several important books on astronomy, of which the best known was '*General Astronomy*' (1888). In 1879 he made accurate measurement of the diameter of the Mars. He was professor of Astronomy at Princeton University from 1877-1905.
2. Charles Baronet Lyell (1799-1875)- eminent Scottish geologist. Bankim read his book- '*Antiquity of Man*'.
3. Joseph Norman Lockyer (1836-1920)- British astronomer who in 1868 discovered in the sun's atmosphere- a previously unknown element he named helium.
4. Thomas Henry Huxley (1825-1895)- English biologist. Bankim read his book- '*Lay Antiquity of Man*'.

Bankim did not translate their works. But he included in his works the main themes of Tindal's book- '*Dust and Disease*' in his article- "*Dhūla*" (Dust), the movement of the solar system from Gleshor's book, biological matter from Huxley's '*Lay Antiquity of Man*' and story of human origin from Lyell's '*Antiquity of Man*'.

Bankim wrote articles for Bengali readers, students of higher classes known at the time, for lay Bengali readers, students of higher classes and modern educated Bengali women.

In his article on solar explosion he quoted a few interesting data about the solar system:

1. Diameter of earth 7091 milies.
2. The units of earth- if divided into one mile long/one mile broad, one mile high-total number would be nineteen crores sixty six lakhs and twenty six thousand.
3. Weight of the earth- 6,069,000,000,000,000,000 tons (one ton =27 *maunds* in Bengali).

If some body wants to reach the sun by train running 20 miles per hour non-stop, it will take 520 years 6 months and 16 days- it will be his seventeenth generation only who would reach the sun. Aeronotical technology of today was not available- even unthinkable in those days. But Bankim's imagination was spectacular and far-reaching.

Bankim gave details of the stars and galaxy observed through telescope by Frederick William Hersched (1738-1822)- German-born English astronomer.

Herschel was a skilled telescope maker and pioneered the study of binary stars and nebulae. He discovered the planet Uranus in 1781 and infrared solar rays in 1801. He catalogued over 800 double stars and found over 2,500 nebulae. By studying the distribution of stars, Herschel established the basic form of our Galaxy and the Milky Way. Bankim was acquainted with his works.

Bankim was interested in space travel/ travelling in the ideas in his article- '*Gagan Paryāṭan*' (Aerostation-Roaming in the Sky). He gave details of adventure under taken in those days.

The world is not static — it is ever changing. Bankim gave a pen picture of the dynamic world in his article- ‘*Cañcal Jagat*’ (The Universe in Motion).

He gave his ideas about the origin of man in his writing- “*Kata Kāl Mānuṣ*” (How long Man Exists - *Antiquity of Man*).

Bankim was keen to know the elements that create matter. He elaborated his ideas in “*Jaibanik*” (Protoplasm – *The Matter of life*).

He wrote about weights and measures of the Earth, Sun and the Universe in his article- “*Pariman Rahasya*’ (Mystery of Weight). That

included waves and depth of the seas. He wrote about sound and the Moon (*Candralok*)”.

Bankim was the torch bearer of writing of popular science in Bengali. He initiated the process- set the trend and tune- the legacy has continued unabated even today.

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