

Pramatha Nath Bose (1855–1934)

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Three years ago, I was pleasantly surprised to receive a letter from Dr Chandan Roychoudhuri, Secretary of the Asiatic Society, conveying the decision of the Council of the Society to award the Pramatha Nath Bose Memorial Medal to me for the year 1990. Excepting a vague recollection that P. N. Bose was connected with the discovery of the rich iron ore deposits of Gurumahisani, I knew little about him for his contributions to knowledge. My curiosity to know more about this first Indian to join the Geological Survey of India was aroused and since then I have been able to collect some information about the life and achievements of this remarkable personality. I would like to share this knowledge with the readers of the journal so that they too can come to recognize the merits of this great son of India and his contributions to the advancement of earth science education in this country.

Early life

Pramatha Nath Bose was born on 12th May, 1855, at Gaipur, a village then in the district of Nadia, but now in 24-Paraganas of Bengal, the second child of Taraprasanna Bose and Sashimukhi. Recalling his boyhood days at Gaipur, Pramatha Nath has written 'we had the five best physicians – sunshine, air, water, exercise and diet'.

Pramatha Nath had his early schooling in the *Bangabidyalaya*, the village school, till he was nine years old and then moved to Krishnagar where he came under the influence of the famous Bramho reformer Keshab Chander Sen. He conceived the idea of going to England for higher studies and appeared for the competitive examination to secure the coveted Gilchrist Scholarship instituted in 1887–88 for talented Indian students. He stood first in the examination and secured the scholarship which was tenable for five years.

Stay in England

Pramatha Nath sailed for England in September 1874 and stayed in London for nearly six years. The subjects which he chose for study included chemistry, botany, geology, zoology, physical geography and logic. After his graduation from the London University in 1877, securing the third position in geology, he joined the Royal School of Mines for a short period. He took part in political meetings and started criticizing the acts of government. Officials of the India Office did not like his activities and



wanted to pack him off to India. It is said that the British Government of the day went out of the way to offer him a job in the Geological Survey of India. Bose has recorded 'This was the first case in which the Secretary of State exercised his discretion in favour of an Indian in regard to the appointment in his patronage'.

Marriage with Kamala

Pramatha Nath returned to India in July 1880, a true nationalist and on July 24, 1882, married Kamala, daughter of Ramesh Chander Dutt, a noted Sanskrit scholar. It is interesting to recall that the marriage was attended by many literary celebrities of the day including Bankim Chandra, the author of *Vande Mataram* and the budding poet

Rabindranath Tagore. Rabindranath has recalled in his autobiography (*Jeevan Smruti*) that when Ramesh Chander Dutt came to garland Bankim Chandra, the great novelist took the garland from Dutt's hand and placed it round the neck of the young poet Rabindranath much to the astonishment of those present. Rabindranath later became a pupil of Bose.

Service in the Geological Survey of India

Pramatha Nath joined the Geological Survey of India on 30th July, 1880, i.e. earlier than La Touche (1881) and Middlemiss (1883). He was the first Indian to join the Survey on a graded post and served the Survey for 23 years. The short history of the first hundred years of the Geological Survey records that Bose was the first to introduce into the Survey, the study of micro-sections as an aid to petrological work and the first to give descriptions of micro-sections in Progress Reports. During the period of his service, he carried out geological surveys of the Narmada Valley, of Rewa State, Central India, in the districts of Balaghat, Raipur, Mandla and Bastar, and on the Shillong plateau. He also reported on the manganese deposits of Jabbalpur district, coal in Darjeeling district and copper in Sikkim.

Bose was the first one to record the occurrence of trachyte from the Narmada region. In his classical memoir of 1883, he reported the presence of Lameta and Bagh beds and used them as marker beds for correlating similar sequences in other parts of India. He was the first to identify distinct volcanic centres around Mandaleswar in the Narmada Valley.

He took leave for two years between 15th May, 1895, and 15th May, 1897, mainly to write and see through the press his monumental work *A History of Hindu Civilization under British Rule* published in three beautifully bound volumes. Much later (in 1921) he wrote another book *National Education and Modern Progress*.

Resignation from the Survey

In normal circumstance, Pramatha Nath Bose, being the seniormost among the officers had to be promoted as Director of the Survey. However this did not happen. Bose has recorded – 'Indians are required to run a race with one of the swiftest peoples of the modern world on paths hitherto unknown to them but familiar to their foreign competitors'. The British government of the day was reluctant to put an Indian at the head of the prestigious Geological Survey. It held the view that it was suicidal for the Europeans to admit that natives can do anything better than themselves and that they should claim to be superior in everything and only allow natives to take a secondary or subordinate post. Holding such a view the Government of India, instead of promoting Bose appointed Thomas Holland, who had joined the Survey much later, as the new Director. Bose in protest tendered his resignation and retired from service on 1 December 1903, when he was only 48 years and still had seven more years of service. This was a bold step to take during those days and required great deal of moral courage.

Service to the iron and steel industry

The loss to the Survey was a gain to the Mayurbhanj State which immediately appointed Bose as State Geologist. This gave an opportunity to him to examine in greater detail the iron ore occurrences which he had spotted in his earlier surveys. Convinced of the richness and extent of the deposit at Gurumahisani and other nearby places in Singhbhum district, he got in touch with J. N. Tata, the great industrialist and was able to persuade him to shift the site of the steel plant which he intended to locate near Dalli-Rajhara to Sakchi (present Jamshedpur). One would have normally taken full credit for so great a discovery but not so Bose. His modesty made him say that he was only instrumental in bringing to light what had long been known to the indigenous smelters. Bose negotiated with the Maharaja of Mayurbhanj State and secured for the Tata's, a mining lease over an extent of 20 sq. miles on favourable terms. Bose had a prophetic vision and firmly believed that the firm of Tata's would

before long come to be reckoned as one of the great steel producers of the world.

Bose was thus instrumental in ushering in and nurturing the iron and steel industry in India. In recognition of the services rendered to the house of Tatas, a bust of Pramatha Nath Bose was erected at Jamshedpur which was unveiled by Lewis Fermor, Director of the Geological Survey of India on 13th March, 1938.

Bose was also in the forefront of the swadeshi movement which rocked Bengal in the early years of the 20th century. He was instrumental in starting the Bengal Technical Institute in July 1906, and functioned as its Honorary Principal. A princely legacy left by Rash Behari Ghosh, enabled the Institute to shift its location to Jadavpur near Calcutta and the name was changed to the College of Engineering and Technology, Jadavpur, in 1929 and later became the Jadavpur University. Bose advocated imparting technical education based on western methods but adapted to our national needs. In his rectoral address (1914) he said

'We talk loudly of national progress but are oblivious of the elementary principles of such progress that a nation has to work out its own salvation by its own effort, and that the more help we take beyond a certain limit the more helpless we become.'

These words have great relevance today when intensive efforts are being made to borrow money and know-how from other countries. There can be no substitute for hard work and self-reliance.

A perusal of Bose's private letters to members of his family reveal his emotional and affectionate qualities surcharged with strong national spirit. He emphasized again and again the importance of plain living and high thinking, activated by a self-sacrificing missionary zeal, not only in religious practices, but also in social, educational and industrial fields. He was convinced about the superiority of Indian culture and exhorted his countrymen to cultivate it assiduously and not blindly copy the customs and mannerisms of the West. He deprecated the sense of inferiority which affected his countrymen and strongly urged them to feel proud of their own past.

Ranchi Ashram

Pramath Nath purchased 21 bighas of land in Ranchi in 1907 and started building a large house. He settled down to farming and the Ranchi house became an attraction to his artistic friends. His house, reverberated with music and song and the merry prattle of children and grandchildren, especially during the Pooja holidays.

In his retirement at Ranchi, Bose kept himself active, communicating his views on various matters of current interest regularly to the noted periodicals of that period – *The Modern Review of Calcutta*, *The Indian Review of Madras*, *The Calcutta Review*, *Prabuddha Bharatha* and the *Amrit Bazar Patrika*.

He was not particularly enamoured of the achievements made by the West in Science and Technology. He felt that this had only helped the promotion of militarism and forged fresh fetters on the weaker peoples. In all the development he witnessed around him he found much science no doubt, but hardly any consideration for human welfare. There was much learning but wisdom was lacking. He pleaded for rescuing humanity from the morass of militarism, malevolence, greed, selfishness and vice. His biographer, Jogesh Chandra Bagal, states that 'Service of the Motherland was the mission of his life and his pen was wielded in her cause to the last'.

Last days

Pramatha Nath enjoyed good health. He had not much faith in western medicine and never consulted a doctor. He was hopeful of completing his eightieth year and looked forward to having a grand celebration on that day. However, this was not to be. After a brief illness he passed away on the 27th April, 1934, at the ripe age of 79. The last rites were performed on the banks of the Subarnarekha river. *Amrit Bazar Patrika*, mourning his death wrote:

... at one time he was a Pucca Saheb and blind admirer of everything western. But gradually the awakening came and the Pucca Saheb became an Indian in the truest sense of the term. It was a maxim with him that if India has to attain real freedom, she must follow the great culture evolved by the *Rishis* of old and what he believed, he not only

preached and translated into practice himself.'

Connection with the Asiatic Society

The association of Pramatha Nath with the Asiatic Society extended as far back as 1883. Taking an active part in the affairs of the Society for over fifty years he wrote a monograph surveying the development of scientific research in India during the hundred year period between 1784 and 1884.

The Society instituted a Pramatha Nath Bose Memorial Medal for recognizing conspicuously important contributions to geology, with special reference to Asia. The award is triennial, the first award being made in 1950. Many eminent geologists including West, Auden, Krishnan, L. Rama Rao, Pichamuthu and Gansser have been the recipients of this award in earlier years.

'Let us pay tribute to this pioneer scientist and geologist of India, from

whose work so much good has resulted.' In these words Pandit Nehru, the first Prime Minister of India, praised Pramatha Nath Bose and his services to the country. Let us not forget our early benefactors.

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PHYSICAL RESEARCH LABORATORY AHMEDABAD 380 009

The Physical Research Laboratory makes four awards called 'Shri Hari Om Ashram Prerit Dr Vikram Sarabhai Research Awards', every two years from funds kindly provided by Pujya Shri Mota of Hari Om Ashram of Nadiad. These awards will be made to Indian scientists, who are below 45 years of age, on 1 January 1997 for original work in the following fields:

1. Space Sciences (including Astronomy, Astrophysics, Planetary and Atmospheric Sciences).
2. Space Applications (in the areas of Meteorology, Hydrology, Remote Sensing and related ground truths).
3. Electronics, Informatics, Telematics and Automation.
4. Systems Analysis or Management including non-linear, non-equilibrium systems in natural and social sciences and technology.

Although the overall work of the candidates would be taken into account, the work done in India would be given prime consideration.

The candidate should have to his credit at least one or more of the following achievements:

1. Significant achievement in scientific research.
2. Important and successful adaptation of new technology.
3. Planning, development and implementation of systems in the context of science and technology.

The selection for the year 1997 will be completed by January 1998 and the awards presented on 12 August 1998.

The last date for receiving nominations is **15 September 1997**. Sponsors are requested to send a two-page note (12 copies) summarizing the contributions and achievements of the sponsored candidate together with his/her biodata, complete list of publications (with the names of the authors in the order in which they appear in the publications), reprints of five most important publications during the last five years (6 copies) in a cover marked 'confidential', addressed to the **Director, Physical Research Laboratory, Navrangpura, Ahmedabad 380 009**.

More detailed information will be asked for by the Selection Committee, if considered necessary.