# Debi Prosad Burma (1925–2005)

Debi Prosad Burma, a pioneer of modern molecular biology, with particular reference to structure and function of ribosome, passed away on 4 February 2005 at Kolkata after a brief illness.

Born in Burdwan in 1925, his early education was also in his hometown. He passed the matriculation examination in 1941 and the M Sc examination in chemistry in 1947 from the University College of Science, Kolkata. He started his research career in Bose Institute, Kolkata under D. M. Bose, the then Director of the institute. His doctoral work was on paper chromatography, when the subject was in its infancy. He established a new technique of chromatography using starch of filter paper and demonstrated that starch was not just an inert material. At that stage there was none to advise him except his postgraduate teacher of physical chemistry, S. K. Mukherjee, who later became the Director of Bose Institute and Vice-Chancellor of Calcutta University. After completing his Ph D, Burma first went to Canada (1954–55) with a Fellowship of National Research Council of Canada, and then moved to the laboratory of R. H. Burris at the University of Wisconsin, Madison, USA, where he worked (1955–57) on the mechanism of nitrogen fixation in *Azotobacter vinelandii*. The next year he joined the laboratory of B. L. Horecker at the National Institutes of Health, USA. Within six months, he purified and characterized L-ribulose kinase and L-ribulose-5-phosphate-epimerase, the two enzymes involved in L-arabinose metabolism. In 1957, Burma came back to India and joined the Bose Institute, where he worked for three years (1957–60) on the pentose phosphate pathway in plants and cell-free protein synthesis in microorganisms. In January 1960, he again went to USA to work with Severo Ochoa, Nobel Laureate, at the New York University, School of Medicine. He worked on DNA-dependent RNA synthesis. This was indeed a milestone of his landing in molecular biology and development of the concept of structure–function relationship of ribosome, which was his life-blood later. In 1961, at an invitation from B. C. Guha, Burma joined the newly created Department of Biochemistry at Calcutta University as a Reader. However, a unique arrangement was made between Guha and Bose in that Burma would take classes in the Biochemistry Department, but would retain his laboratory and continue his research at the Bose

Institute. Unfortunately, Guha expired suddenly on 20 March 1962. Thereafter, the mutual arrangement of having double assignments failed and finally Burma had to leave both the University of Calcutta and the Bose Institute. At that critical juncture, an offer came from Banaras Hindu University (BHU) and in October 1964 Burma joined BHU as professor and Head of the Department of Biochemistry and Biophysics in the College of Medical Science. In BHU, his primary research interest was structure–function relationship of ribosome, in which he made seminal contributions. Burma and his group provided evidence for the first time that RNA–RNA interaction is responsible for the association of 30s and 50s ribosomes to form 70s ribosomes. Burma and his group demonstrated that loose couple 70s ribosomes are not artefacts. The two populations can be interconverted both *in vitro* and *in vivo*. His pioneering work laid an important foundation for much of the RNA research in India. Burma retired in 1985, after which he worked up to age of 70 years as Emeritus scientist of CSIR in the Molecular Biology Unit of BHU, founded jointly by him and his wife Maharani. Finally, he returned to Kolkata and settled there for the rest of his life.

Burma was a voracious reader. He kept himself abreast not only in the field of ribosomology, but also in various fields of biology, especially molecular biology, immunology and biotechnology. He was a founder member of the Guha Research Conference and member of the Immunology Forum and Indian Biophysical Society. He received the following awards: J. C. Bose Medal of Indian National Science Academy; B. C. Roy Memorial Award of Medical Council of India, Hari Om Ashram Award of the University Grants Commission, Amulya Ratan Medal of Calcutta University, J. C. Ray Medal of Indian Institute of Chemical Biology and Life-time Award of Bose Institute. He was a Fellow of a number of academies such as Indian National Science Academy, New Delhi; National Academy of Sciences, Allahabad; Indian Academy of Sciences, Bangalore; National Academy of Medical Sciences, Delhi and International Academy of Medical Sciences, Delhi. During the last phase of his life, he wrote two books: *Music of Life*, published by Vigyan Prasar and *Bose Institute, Ribosome and Myself*, published by Bose Institute.

With his death the country has lost an erudite scholar, an excellent teacher, a born scientist and one of the main architects of Indian biochemistry, molecular biology and ribosomology. The vacuum created by his death will be hard to fill.

I. B. CHATTERJEE

*Dr B. C. Guha Centre for Genetic Engineering and Biotechnology, Calcutta University College of Science, Kolkata 700 019, India*
*e-mail: ibc123@rediffmail.com*

Edited and published by P. Balaram, Current Science Association, Bangalore 560 080.
Typeset by WINTECS Typesetters (Ph: 2332 7311), Bangalore 560 021 and Printed at Lotus Printers, Bangalore (Ph: 2320 9909)