

Professor P. L. Bhatnagar



Professor Prabhu Lal Bhatnagar was born on August 8, 1912 at Kotah (now Kota), Rajasthan in a highly respectable family which was well known for its philanthropy. He inherited high nationalistic ideals from his parents. He had his education at first in Kotah in Government School, Rampura and Herbert College, and then at Maharaja's College, Jaipur and the University of Allahabad, Allahabad. He topped the list of successful candidates at the B. Sc. Examination of Agra University for the year 1934 getting the highest percentage of marks in Mathematics and Chemistry for which he was awarded the Krishna Kumari Devi Gold Medal by the Agra University and the Maharana Fateh Singh Gold Medal by the Maharaja's College, Jaipur. For his outstanding result at the M.A. and M.Sc. Examinations of Agra University in 1936, he was awarded the Lord North Brook Gold Medal by Maharaja's College, Jaipur. Ignoring the advice of many friends and relatives to appear for the I. C. S. examination which had a great fascination for all young brilliant students at that time, he chose to work with Dr. B. N. Prasad on summability of Fourier and Allied Series. When his work for D. Phil. was nearly complete, he decided to switch over to Astrophysics on the suggestions of Prof. M. N. Saha, F.R.S., who had already earned a great name for our country through his thermal ionization formula. He was attached to Professor A. C. Banerji and both started working together on Astrophysical Problems. Dr. Bhatnagar's excellent work during this period had been referred in books like "Atoms to Stars" by Martin Davidson, "Astrophysics – Vol. II" by Alter and "Recent Advances in Galactic Dynamics" by A. C. Banerji. On the basis of this work he also won the very coveted prize, the E.G. Hill Memorial Prize, for the best research work done in the Faculty of Science, Allahabad University, during the years 1937-39. He obtained D. Phil degree for his thesis 'On the Origin of the Solar System' from Allahabad University.

After he obtained the D. Phil. Degree, he was invited by Shri S. N. Mukherji, the then Principal of St. Stephen's college, University of Delhi, to join the staff. The next sixteen years were spent in the service at Delhi, first as a Lecturer and later as the Head of the Department of Mathematics, St. Stephen's College and recognized reader in Delhi University. It was during this period that Dr. Bhatnagar did some outstanding work, in collaboration with Prof. D. S. Kothari. He produced magnificent research work on the anharmonic pulsations of Cepheid variables in an attempt to explain the skewness of the light curve for these stars. In 1947, he was awarded D. Sc. from Allahabad University for his work

on Astrophysics. In recognition of his work, Dr. Bhatnagar was elected as a Fellow of the National Institute of Science, now Indian National Science Academy in 1950. In 1951 he went to Harvard University, Cambridge, U.S.A. as a Fulbright Scholar for two years. The work done by him on Boltzmann equations during his stay there put him in the front row of Plasma physicists. This work, which now goes by the name BGK (Bhatnagar-Gross-Krook) model for collisions and is cited in almost every modern book on Kinetic Theory.

The Conference of the Indian Mathematical Society held in December, 1953 at Delhi provided Dr. Bhatnagar with an opportunity to bring together the teachers at Delhi. As the local secretary of the Conference he worked day and night for months together. The Mathematics Exhibition organized by him at the Conference is known to be the best exhibition ever since. In January 1956, on the invitation of Indian Institute of Science, Bangalore, he left Delhi to join that institute as the first Professor and Head of the Department of Applied Mathematics. On April 13, 1969 Prof. Bhatnagar was appointed as the Vice-Chancellor of Rajasthan University, Jaipur. For two years he successfully led the destinies of the University but in the process his health and research both suffered, and he decided to come back to the teaching profession once again. On 30th May, 1971, he joined as Senior Professor and Head of the Department of Mathematics at the then newly started Himachal Pradesh University, Shimla.

Due to adverse climate, he ultimately left Shimla on September 30, 1973 to take over as a member of the UPSC, however, this post of at UPSC could not hold Prof. Bhatnagar for long. The researcher in him strongly urged him to break the bonds of officialdom, and he relinquished the membership of the UPSC to take up a new assignment as the first Director of Mehta Research Institute of Mathematics and Mathematical Physics, Allahabad (now renamed as Harish-Chandra Research Institute) on 19th July 1975. He left the entire mathematical community in a state of shock, when he left for his heavenly abode on October 5, 1976.

Dr. Bhatnagar was elected as a Fellow of the Indian Academy of Sciences in 1955. In the year 1962, he was elected as the President of the Mathematics Section of the Indian Science Congress Association. He was elected as the President of the Indian Mathematical Society in 1964, was re-elected in 1965, and for the third time in 1968. In 1968, he was elected as a Fellow of the National Academy of Sciences, India. He was the President of the physical Sciences Section of the National Academy of Sciences for 1969. He was also the President of the Indian Society of Theoretical and Applied Mechanics (ISTAM) for 1971. He had been the President of the Association of Mathematics Teachers of India from 1957 till he breathed his last. He was also the President of Calcutta Mathematical Society and Jadavpur Mathematical Association.

In recognition of his work, Dr. Bhatnagar was awarded Padma Bhushan on January 25, 1963 by the President of India. This is the distinction of the highest order for a scientist.

Prof. Bhatnagar published 139 research papers in International Journals, about 100 popular / semi-popular articles and more than a dozen of books. Twenty nine Ph.D. theses were written under his guidance.

Professor Bhatnagar had worked on several National and International Committees on Mathematics. He was a member of the first U.G.C. Review Committee on Mathematics, Chairman of the Indian National Committee on Mathematics (from April 1968 to September 1971), Chairman of the Indian National Committee for Theoretical and Applied Mechanics

from 1969 to 1972. He led the Indian delegation to the Bi-national Conference on Mathematics Education and Research held at Bangalore from June 4 to 16, 1973.

He had been a member of the Executive Council of International Commission on Mathematical Education, Commissions 27 (variable stars) and 43 (MHD) of International Astronomical Union, a corresponding member of International Commission of Plasma Physics and a member of the Executive Committee of the International Mathematical Union. He had done pioneering work in organizing Olympiads in India.

Professor Bhatnagar will be remembered not merely because he made lasting contributions to mathematical knowledge, not just because he trained veritable army of mathematics teachers and citizens in all walks of life who carry an indelible stamp of his thoroughness, precision and dedication to work, not also because of the numerous honours bestowed on him by the mathematical community and the Government, but more so because of his calm nature, broad smiles, fine sense of humour, his wise counsel unstinted by personal considerations, to hundreds of young students, teachers and researchers who sought it from him over a long period of thirty years, and warmth of his heart that flowed freely for everybody and at all times.