



Adutti



ARUN KUMAR DUTTA

(1903-1988)

Elected Fellow 1945

INTRODUCTION

PROFESSOR ARUN KUMAR DUTTA, DSc, was an eminent teacher in physics and a distinguished research scientist. Administrative services could not attract him and he preferred teaching as a career and research as a profession. His research works were mainly on molecular spectroscopy, ultrasonics and nuclear physics. He was a man of high moral character.

BIRTH AND FAMILY

Professor Arun Kumar Dutta was born in Bhowanipore, Calcutta on 20th January in the year 1903. His mother was Labanya Prova Dutta whose ancestral place was in Taki in East Bengal, but members of her family were mostly in south Calcutta even at that time. His father Bhupal Kumar Dutta, MA belonged to a renowned family of Dacca, Bikrampur (now in Bangladesh) and worked as Manager, Balihar State, till his last days. He expired before his two sons—Arun Kumar Dutta and Arup Kumar Dutta—became financially established. The Dutta's had a large property and a palatial house in their village in Teotia. But by 1945 the property was neglected and most of the members of the family left the village and got established elsewhere. By 1947 the ancestral property lost its significance due to partition of Bengal and was generally forgotten.

EDUCATIONAL AND PROFESSIONAL CAREER

Professor Arun Kumar Dutta completed his schooling from Kishori Lal Jubilee School, Dacca in the year 1919 when he was sixteen years of age. He lost some months of his college days as he joined the non-cooperation movement against the British for some period of time. In 1923 he passed his BSc (Hons) with First Class from Dacca Hall. At that time he got a scholarship of Rs 16/- per month for post graduate studies in Physics. In 1925 he passed his MSc in Physics coming First Class First in the University. Dacca University awarded him a prize of Rs. 100. It was his good fortune that he was a bright student of Physics and could come in close contact with such famous scientists as Dr Satyen Bose, Dr Meghnad Saha, Dr Jagadish Chandra Bose and Prasanta Chandra Mahalanobis, Dr CV Raman and other brilliant educationists in Bengal. Their influence, guidance and devotion to the cause of scientific education



and research motivated Dutta to exalting heights. After his MSc examination, Arun Kumar Dutta worked as Assistant Lecturer and Research Scholar in Dacca University. After that he worked in Midnapore College, West Bengal as Assistant Professor for a short while. He travelled far off and joined Khalsa College in Amritsar as a Lecturer in Physics. He was always fond of travelling and this assignment far away from his native place, remained a cherished memory in his mind. But, within four months of taking up this assignment he had to resign and come back as his father suffered a heart attack and he was needed by his family. His father expired after another fatal attack and he had to look after his bereaved mother and younger brother who was studying medicine in Calcutta.

Professor Dutta took post of a Lecturer in Benaras Hindu University against leave vacancy. From Benaras he contacted Professor Meghnad Saha in Allahabad and expressed his desire to get DSc under him. In spite of his liabilities, he was keen to do research work and pursue higher studies under Dr Saha. So he stayed in Allahabad and persuaded Dr Saha to agree to take him to work under his guidance. Dr Saha agreed and helped him to find a place for him to stay with his mother. From then onwards Professor Saha had always been an adviser and was like a Godfather to this brilliant student of physics. In 1933 Sri Arun Kumar Dutta got his DSc degree in molecular spectroscopy under the guidance of Dr Meghnad Shah. After Dr Dutta's mother expired, he helped his younger brother to complete his MBBS from his small income.

From 1933 to 1936 Professor Arun Kumar Dutta worked in Bose Research Institute, Calcutta as Research Fellow. In 1936 he married Smt. Juthika Dutta. She was only seventeen when she was married to this highly educated man. Her father Raibahadur BK Das, then District Magistrate, was himself a brilliant scholar of Mathematics and was a great admirer of his son-in law's scholastic achievement even though financially he was still not established.

At this point Professor Arun Kumar Dutta went to Berlin as a Post-Doctoral Fellow. He was there for about 2 years. He worked in the Kaiser Wilhelm Institute Berlin under its Director, Professor Debye. He also got an opportunity to work under Dr Niels Bohr and many other famous scientists. While in Berlin he picked up German language very well.

On return from Germany he joined back Bose Research Institute, Calcutta and worked there from 1938 to 1941. During this period he became the proud father of two daughters. Later he had a son.

In 1941 Professor Dutta joined the Physics Department of University of Delhi and worked there till 1944. In 1944 he was called to his Almamater, Dacca University.



He worked in the University of Dacca as Reader from 1944 to 1948. At that time Professor Satyen Bose was the Head and the guiding force of the Department. In 1945 Professor Dutta was elected a Fellow of the National Institute of Sciences of India.

The violence and communal disturbance in 1947 disturbed him tremendously. Even though he was offered a higher post he resigned after the partition of Bengal and came to Calcutta as a Lecturer, a lower post with lesser salary.

After this he moved to Orissa. He joined the Utkal University and worked as Mayurbhanj Professor of Physics from 1951 to 1961. While he was in this University, he presided over the Physics Section of the Indian Science Congress in 1959.

During the last few years of his career, Dr Dutta returned to University of Calcutta. From 1961 to 1968 he was Palit Professor of Physics and then Head of the Department of Physics. He was elected a Council Member of the National Institute of Sciences of India for the period 1963 to 1966. In 1965 he was invited by the then Chairman of the Union Public Service Commission, late Shri BN Jha, to work as a member of the Union Public Service Commission. This he declined on account of his pre-occupation with research work as Palit Professor.

At around this time he completed his book "Electrodynamics and Relativistic Mechanics", which was published by the MacMillan Company of India Limited. During the initial stages of his life he had authored a few books of science in Bengali language.

In 1966, Sri Vishnu Sahai, the then Governor of Assam invited Dr Dutta to accept Vice-Chancellorship of Dibrugarh University. He declined this offer because he preferred teaching and research.

Professor Dutta published a large number of research papers in reputed journals. At first he carried out work on molecular spectroscopy and ultrasonics. Under Professor P Debye he worked on supersonics, specially in water to get information about the existence or non-existence of dispersion effects. This required very careful measurements and Professor Debye was highly pleased with Dr Dutta's ability for experimental work. Professor MN Saha motivated him to carry out research in nuclear physics. He believed that a periodic character exists in the binding energies of nuclei and wanted to develop a mass formula. Professor Dutta felt the need for research in solid state physics and he introduced solid state physics as a special paper in post-graduate course of Calcutta University in the year 1961.

Professor Dutta has made significant contributions in the study of molecular motion in fluids and internal dispersion and absorption of elastic and optical waves.



The absorption coefficient of these waves gives a constant value which is generally a multiple of Stoke's calculated value. The multiplier varies from infinity to few thousands. Moreover, there is a diffuse broadening of the Debye diffraction pattern lines produced by the wave field. Professor Dutta deduced relations for the sound wave velocity on the basis of molecular motion which agrees fairly well with the experimental results.

After retirement, from 1969 to 1971 Professor Dutta worked as a Member of the Advisory Board in the *Viva-Voce* examination of the candidates for Engineering Examination under the auspices of the UPSC. Even during this period he did not leave research and published a paper in *Physical Review*.

He also worked as a nominated member of the Council of Bose Research Institute during 1972-75. From around this time his health started deteriorating. He had a cerebral attack.

He made a nice, cozy little Bungalow in Tollygunge, designed by his elder son-in-law. He lived the last eighteen years of his life in this house. He was very affectionate and was very attached to the members of his family.

His ailing wife Smt Juthika Dutta passed away in 1986. Professor Dutta was a broken heart. In 1988 on 20th of August, Professor Arun Kumar Dutta passed away peacefully leaving the rest of the family to mourn his death.

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D BANERJEE
Sir Rashbehari Ghosh Professor
Department of Physics
Calcutta University
Calcutta

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