BIMAN BIHARI DEY

1889-1959

Biman Bihari Dey was born on 1st November 1889 in a small house in Sitaram Ghosh Street in Calcutta. He was the youngest of a family of nine children. His father, Kedarnath Dey, had been employed in a lucrative post in Northern Railways, but gave this up in 1871 in response to a great spiritual call, to become ordained as a missionary in the service of the Nava Vidhan or New Dispensation. Kedarnath Dey was one of the most ardent disciples of the revered leader of the Brahma Samaj, Acharya Keshab Chandra Sen, who gave him the epithet "Santa Sadhak" or Sage of Peace. Kedarnath should indeed have been a man of remarkable character, since he was not afraid of throwing away material comforts and courting a life of voluntary poverty to pursue his religious avocation. His decision plunged the family into privation and hardship which were however, cheerfully borne with a sense of perfect understanding.

When Biman Bihari Dey was only two years old, Kedarnath passed away, placing the family in even greater difficulties. But Kedarnath’s wife was undaunted. She was certainly not in a position to give her children a comfortable life, but she did not fail to see that they all received a sound education or to mould their character on right lines.

Biman Bihari Dey had his early education in the City Collegiate School, Calcutta, from where he passed the Entrance Examination (equivalent to Matriculation) in 1904. He passed the First Examination in Arts from the City College, Calcutta, in 1906. He secured the B.Sc. degree in 1908, from the Presidency College, Calcutta, with honours in both Chemistry and Botany. In 1910, he passed the M.Sc. examination of the Calcutta University with Inorganic Chemistry as the special subject. His student career at the Presidency College, Calcutta, was one of outstanding excellence and was fittingly climaxed by the award of the Mouatt medal and the coveted Premchand Roychand Scholarship.

Biman Bihari Dey studied at Presidency College, Calcutta, when it was at the pinnacle of its glory. Sir P. C. Ray, the father of chemistry in India, was the Professor of Chemistry. Young Dey imbibed in full measure many of the noble qualities of his great teacher, fervent patriotism, hatred of ostentation, childlike simplicity and consuming interest in research. Another professor at Presidency College, Calcutta, who greatly impressed Dey was Professor Sir Jagdish Chandra Bose, who was the Professor of Physics in the College, particularly by the importance the
latter gave to experimental demonstration in illustrating his lectures. During this period young Dey had the benefit of cultivating the intimate friendship of P. Ray and H. K. Sen. These friendships were a source of great strength to him in moments of triumph as well as in tribulation throughout his life.

After completing his studies in the Presidency College, Calcutta, Biman Bihari Dey became a lecturer in Scottish Church College for a year. In August 1911, he proceeded to London and joined the Imperial College of Science and Technology, to work in the laboratories of Sir Jocelyn Field Thorpe. He obtained the Diploma of the Imperial College (D.I.C.) in 1912 and passed the examination for the Associateship of the Institute of Chemistry (A.I.C.) in 1913. On the basis of his thesis on ‘Coumarin condensations’, he was awarded the D.Sc. degree of the University of London in 1915. This was the first occasion on which an Indian (along with his intimate friend, H. K. Sen) was admitted to this high degree from the University of London.

On his return to India in November 1915, Dr. Dey was engaged for some time with researches connected with the chemical industries in Calcutta. In November 1916, he was appointed to the Indian Educational Service in Presidency College, Calcutta, in place of Sir P. C. Ray who had taken up the Palit Professorship in Chemistry at the University College of Science. From here he published a number of papers in conjunction with his students in the Journal of the Chemical Society, London.

In April 1920, Dr. Dey was transferred to Presidency College, Madras, to take the place of Sir John Lionel Simonsen appointed to the Munitions Board. Here he continued as Professor of Chemistry (and towards the end as Principal) until the normal age of retirement from Government Service, for nearly twenty-five years. Generations of students will remember fondly and recall with pride their student days in his department.

The writer had the privilege of sitting in Dr. Dey's lectures during the years 1932-1935 and the memory of these years is still vivid. Dr. Dey took immense pains to see that his lectures were not only understood but also enjoyed. Half-an-hour before his lecture, an assistant would come in and arrange a whole series of lecture apparatus, stands stacked with clean test tubes, reagents and samples of organic chemicals to be discussed in the course of the day's lecture. These items occupied the entire length of the table, which stretched almost from wall to wall in the lecture theatre.

Dr. Dey had a talent for selecting striking experiments to illustrate his lectures. He was a gifted story-teller and knew how to build up and sustain interest in the young student audience. No one could forget his thrilling account of W. H. Perkin's discovery of Mauve and the birth of the dyestuff industry or his account of Ehrlich's work on chemotherapy. His English diction was excellent. He made a profound impression on his young students and many among them who occupy high places in
the profession of chemistry today undoubtedly owe their success to the spark kindled in them by the great teacher.

These years at Presidency College, Madras, were the most productive years of Dr. Dey as a research chemist. Sir J. L. Simonsen had earlier started research in Organic Chemistry in the Chemistry Department, but he did not stay long enough to create a strong school of chemistry. It was left to Dr. Dey to build up a vigorous tradition of research. During about thirty years in this department, he and his students produced a stream of publications, so that Presidency College came to be recognised as a leading centre of research in Organic Chemistry in India.

Dr. Dey was fond of working with his own hands. He had his personal laboratory in the department where with the help of an assistant he would engage himself whenever he was free from his other duties. In one corner of the laboratory, he had a small cubicle, barely four feet square, where he did his reading and writing during the day. In the adjacent laboratory, the final year Chemistry Honours students and the research students carried out their work. Dr. Dey would stride into this laboratory every day in the morning and in the afternoon. He would stop at every student's table and find out what he or she was doing. Very often he would demonstrate to the students how a particular test was to be done. He took a delight in carrying out crystallisations on the products obtained by the research students and derived a child-like pleasure in examining beautiful crystals of organic compounds. Some of the cleverer ones among his research students often succeeded in sending him away pleased by displaying nicely crystalline substances in watch glasses on their working table.

In the earlier years, Dr. Dey concentrated on the chemistry of coumarins. His work in this field has helped to add substantially to the knowledge of this ring system, as borne out by the many references to his work in the chapter on 'Coumarins' in the Elderfield series on Heterocyclic compounds. He also carried out in the early period a series of studies on the reactivity of the halogen atom on the aromatic nucleus, in the presence of a variety of negative substituents.

The writer had the privilege of initiating Dr. Dey's studies on the isoquinoline ring system in 1934. During the next ten years, Dr. Dey and his students contributed more than fifteen papers on this interesting heterocyclic system, present in many alkaloids and biologically active compounds. His investigations on the chemistry of narcotine and cotarnine had commenced earlier than 1934, but extended for many years along with his synthetic work on isoquinolines.

The chemistry of plant products also had a fascination for Dr. Dey. Notable contributions in this field were the isolation of thevetin, a cardiac glycoside from *Thevetia nerifolia*, of the alkaloid heydotine from *Heydotia auricularia*, of toddaline, toddalinine and toddalolactone from *Todadora aculeata*. The structure of toddalolactone, a coumarin derivative was fully
elucidated. It must be remembered that all of Dr. Dey’s work on plant constituents was carried out long before the introduction of physical methods and tools and of techniques like chromatography, which have revolutionised investigations in the field of Natural Products Chemistry.

During 1927-1928, Dr. Dey was deputed to Germany for studying biochemistry. He spent the time mostly in Berlin and Dahlem, working with Pringsheim, Warburg, Lindner and Weidenhagen. He also travelled in Europe extensively during this period, visiting many of the leading centres of research. One could trace his interest in biochemistry to the stimulus received during this period in Germany. Dr. Dey carried out some interesting work on ‘Peroxidases’ in collaboration with some of his students.

A notable contribution during his service as Professor of Chemistry was the production of the book “A Laboratory Manual of Organic Chemistry” in collaboration with his friend and colleague, Professor M. V. Sitaraman. This book is even today rated highly as a textbook for instruction in practical organic chemistry in most Indian Universities and received high praise from several leading international journals.

His early association with Professor Sir P. C. Ray had given Dr. Dey a strong practical outlook. He did not believe that study and research in chemistry had fulfilled their purpose if they provided intellectual amusement. He fervently desired that chemistry should be applied to practical ends in India as in the advanced Western countries. He received ample scope for giving a practical outlet to his knowledge of chemistry during the years of the second world war. He supplied scores of stains for use in biological analysis to the army, by carrying out the purification of commercial dyes to the requisite extent. He supplied tens of thousands of ampoules of pituitrin to hospitals, by processing pituitary glands obtained from the slaughter house in Madras.

During the years 1940-1953, he had two important schemes operating under his supervision in the laboratory of Presidency College, Madras, under the auspices of the Council of Scientific & Industrial Research. One of these was on ‘Gland Products’ under which processes were developed for the production of insulin, thyroxine, adrenaline and pituitrin, from slaughter house wastes. Another was on the ‘Electrolytic reduction of nitro compounds’, which led to the development of electrolytic processes for the production of important dyestuff intermediates like benzidine, tolidine, dianisidine, p-aminophenol, 2,4-diaminophenol, etc.

Dr. Dey officiated as Principal of Presidency College, Madras, in 1938 and as permanent Principal of the College during 1943-1944, and his talents as an administrator received full scope. He saw the great difficulty experienced by women students from moffusil towns in finding suitable accommodation in Madras City. As a result of his efforts, the Madras Government sanctioned the construction of a hostel. A magnificent structure costing over fourteen lakhs and capable of housing two hundred
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women students was opened by President Rajendra Prasad, and Dr. Dey, though not in service at the time, had the satisfaction of being a witness to the realisation of his plans.

In 1944, he retired from Government service but was reappointed for two years as Director of Public Instruction of Madras State. He instituted many reforms in the educational system of the State, whose beneficial effects are felt even now. His work as Director of Public Instruction was appreciated by his colleagues for its vigour, generous impulses and absolute fairplay.

Even after retirement from Government Service in 1946, Dr. Dey's services were fully utilised. He served as the Director of the Biochemistry Department of the Madras University during 1948-1950. In 1953, he was appointed the first Director of the Central Electrochemical Research Institute at Karaikudi. He held this post till 1957. During this difficult formative period, his zeal and pioneering spirit enabled him to surmount many odds and build up the Institute as a fine centre for Electrochemical Research in India.

It is relevant to mention some details about Dr. Dey's personal life and characteristics. He married in May 1920, Miss Amiya Ghosh, daughter of Mr. J. C. Ghosh, Advocate, Nagpur. Mrs. Dey was a lady of great charm, gentle disposition and extreme kindliness. Of their four children, the youngest, a daughter, passed away in 1942, causing the parents great mental anguish. Dr. Dey was very fond of his children, but he was also very strict. He disliked ostentation and extravagance of every type and expected his children to live up to his high ideals of simple living and high thinking. He had a great love of literature and philosophy and was widely read in the classics both in English and in Sanskrit. The death of his wife, a most noble lady and a true companion to him in every sense, in 1948 was a grievous blow from which he never recovered.

Dr. Dey had a personality that commanded respect and awe from his colleagues and students. He was not afraid of acting strictly according to his lights, even if it meant losing popularity. He did not have any talent for concealing his emotions and pleasure or displeasure would show up in his face, according to circumstances, almost as in a child. He hated all types of manoeuvring and was never afraid of speaking out his mind even if this meant losing the favours of the powers-that-be. Inspite of this, many honours came his way throughout his life. Dr. Dey was a Fellow of the Royal Institute of Chemistry and a member of its Advisory Board. He was a Foundation Fellow of the National Institute of Sciences of India and a Member of its Council for several terms. He presided over the Chemistry Section of the Indian Science Congress in 1926. He was a member of the Council of Scientific & Industrial Research and Chairman of its Chemical Research Committee for several years. He was also Chairman of the Heavy Chemicals and Dyestuffs Committee of the C.S.I.R. During the
second world war, he was Adviser to the Government of Madras and the South Indian States for anti-gas warfare.

He played an important part in the affairs of the Madras University being a member of the Academic Council and the Senate for many years and also of its Syndicate for a time. As Chairman of the Board of Studies in Chemistry of the Madras University, he played an important part in improving standards of teaching and examination in the University. Many of the leading universities in India had the privilege of receiving his advice and help. He served as a member of the Enquiry Committee of the Calcutta University in 1954 and also as Chairman of the Secondary Education Commission of the West Bengal Government in the same year. He was a Founder member and President of the Bengali Association, Madras, and also President of the South Indian Brahmo Samaj over a period of many years. He was elected President of the Indian Chemical Society during 1943-1944 and took a keen interest in its activities throughout his life.

Dr. Dey passed away peacefully on the night of 18th January 1959, deeply mourned by all who had the privilege of knowing him. No one can deny that he had made a profound impact on chemistry in India. He was one of the great pioneers who established and cultivated the tradition of research in Indian Universities. He ranks high among the great builders of modern India, by his inspiring work as a teacher and his contributions as a research scientist of the highest calibre.

T. R. GOVINDACHARI

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