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In Memoriam :

PRAFULLA CHANDRA RAY

BORN: AUGUST 2, 1861. DIED: JUNE 16, 1944.

SIR P. C. RAY, more familiar to his countrymen as ACHARYA PRAFULLA CHANDRA RAY, is no more. He passed away after a short span of illness on Friday, the 16th June at 6-27 P.M. in his own room at the University College of Science and Technology, Calcutta, which was his home for the last 30 years of his life. With him has been severed the last link of the towering personalities of the last generation, who have made Bengal what it is to-day, culturally and intellectually, and who, by general consensus of opinion, stand in the front rank of the Makers of Modern India.

The outstanding feature of his greatness was that he loved his people and was one of them. He never thought of keeping himself above and aloof from the common man. His was a soul that disliked to dwell apart from others. He abhorred the selfish enjoyment of his own greatness, but wanted to share his feelings with all around him —great and small, rich and poor, learned and illiterate. More at home with people in humbler walks of life he used rather to say that he was afraid of great men—men of power, position, wealth and honour. In fact, he did not know how to become great in the modern sense of the word. For, though placed in power he never exercised it, holding a very high position he never felt it, possessed of wealth he never kept it, adorned with honour he could never be induced to enjoy it. Such was his greatness—a rarity by itself, which avoided all taints of vanity, scrupulously shunned all attempts to make a good impression or favourable appearance, and expressed a strong dislike for aristocratic isolation.

Though a chemist by choice, his activities were never confined within the four walls of his laboratory; and his life was far from that of a brooding scientist with an

uneventful routine of study, laboratory and rest. Within a frail and fragile frame he nurtured a virile and sympathetic spirit whose activities were many-sided and embraced almost all spheres of human interest. Intellectual, scientific and industrial regeneration, social reform, economic freedom and political advancement of this country, all made equally strong appeal to him and absorbed as much of his time and service as did his scientific researches and teaching. Above all, in times of distress and suffering, he was the first man in Bengal to respond to the call of humanity—be it a famine, a flood or any other natural visitation. Of him it may be truly said in the words of Emerson, his favourite philosopher, that he was "in this world not to get but to give; not for prosperity but to suffer for the benefit of others like the noble rock-maple tree which in all the villages bleeds for the service of man". His life was one of pure self-immolation that could give all and take nothing, and even receive nothing.

A friend of the poor and lowly he gave away abundantly in charity, often unnoticed and unknown to others, though he never had a large income of his own. His riches, however, consisted in the fewness of his wants as he lived a single and ascetic life of Spartan simplicity. In him were harmoniously blended the lofty ideals of ancient oriental culture with the dynamic and progressive aims of the modern rationalistic western civilization.

Born in a cultured and rich family, his father being a landed proprietor with liberal western education, PRAFULLA CHANDRA imbibed from his very childhood through the latter's influence the principles of rational thinking and the value of disciplinary methods. After his first education in his father's village school up to the age of nine when the family migrated to Calcutta, he joined the Hare School and subsequently the Albert School from which later he passed the Entrance Examination in 1879. During this period a persistent attack of dysentery so shattered his health as to leave a permanent stamp of weakness upon his constitution. He then joined the Metropolitan Institution, now known as Vidyasagar College and also attended lectures on Physics and Chemistry at the Presidency College. The lectures and experiments of Prof. Pedler, at the latter institution stirred his imagination and awakened in him a spirit of enquiry and interest for natural science. In 1882, he prepared for the Gilchrist Scholarship Examination—an All-India Competition—without the knowledge of his friends and relations and was able to secure one scholarship, the other successful competitor being a Parsi gentleman, Bahadurji. This success paved the way to fulfil his long-cherished desire for higher studies in Europe, for at this period there was a serious set-back to his family fortune due to his father running into heavy debts. He joined the University of Edinburgh in 1882 in the Faculty of Science. In Chemistry he came under the influence of Prof. Crum Brown and it became his favourite subject. Alexander Smith

and James Walker were his class-fellows. In 1888 he obtained his D.Sc. degree on a thesis in Inorganic Chemistry and became the recipient of several scholarships in the University.

After return to India he was appointed in 1889 Assistant Professor of Chemistry at the Presidency College, Calcutta, where in 1911, a few years before retirement, he became its Senior Professor. Here, in addition to his teaching work, he devoted himself with great enthusiasm to the pursuit of original researches. His colleague, late Sir Jagadis Chandra Bose, in Physics and he in Chemistry were the first Indian teachers to initiate research work in natural science and to inspire young minds with a spirit of enquiry, desire for knowledge and love of truth. Soon he established his reputation as a teacher of exceptional ability and his lectures wielded a great influence upon his students, illustrated as they were not only by numerous experiments but enlivened as well by his original wit, humour, examples from daily life and notably by attractive accounts from the lives of the great masters of science. His animating account of the pilgrimage of Wöhler from Germany to the great Swedish savant Berzelius, where Anna, the kichen maid, served as a laboratory assistant, still rings in many ears. Students from other sections, both of science and arts, were attracted by his lectures and the lecture gallery was always full to the brim. Soon a body of ardent research workers gathered round him forming the nucleus of an Indian School of Chemistry. It is, therefore, no wonder that most of the eminent chemists of India to-day had their first lessons from him. In 1916 he retired from the Government service to join the University College of Science, then newly started, as Palit Professor of Chemistry at the request of that great educationist, the late Sir Asutosh Mookerjee. Here, in a more congenial and free atmosphere his research activities increased manifold and the band of devoted workers continually swelled in numbers. The total number of original papers published from his laboratories at the Presidency College and the University College on a large variety of chemical problems is likely to approach a couple of hundreds. In 1902 he published the first volume of his monumental work, the 'History of Hindu Chemistry' which was followed by the second volume in 1908. The work represents the result of a long and painstaking research extending over 15 years and gives us a glimpse into the achievements of the early Hindus in the domain of positive science. The book was acclaimed by competent critics and judges all over the scientific world as a valuable contribution to the history of science.

Far outweighing his reputation as a teacher and researcher, his service as the founder of a School of Chemistry will ever remain as a conspicuous landmark in the history of our national progress. The inauguration of the Indian Chemical Society in 1924, of which he was the Founder President for the first two terms, constitutes another

instance of his signal service in this line. The Society was started with a handsome donation of Rs. 12,000 from him towards its building fund.

In 1936 he retired from his position as Palit Professor of Chemistry and remained as an Emeritus Professor to the end. Long before this, at the completion of his 60th year in 1921, he wrote to the authorities of the University making a free gift of his salary from that date onward till his retirement. It was also suggested that the money accumulated thereby should be spent for further extension and development of the Department of Chemistry in the University College of Science and Technology. The University has already created two Sir P. C. Ray Research Fellowships in Chemistry to be maintained from the interests of this fund (Rs. 1,30,700). Further, an endowment of Rs. 12,000 was made in 1922 for an annual Research Prize in Chemistry, named Nagarjun Prize after his suggestion. This was followed by a second endowment of Rs. 11,000 in 1936 for a research prize in Zoology and Botany, named as Sir Asutosh Mookerjee Prize.

As a man and as a teacher his relation with his pupils was always very warm and affectionate, transcending the mere natural admiration and respect from the taught and good wishes from the teacher. There was nothing in his private or public life which was not disclosed to his pupils who regarded him as their friend, philosopher and guide. He maintained in its fullest sense the tradition of the ancient Indian Gurus with his charity extended beyond the circle of his pupils to the student community in general and to the maintenance of many schools and colleges in Bengal.

He was sent on deputation to Europe in 1904 by the Government of Bengal. In 1912 he visited England again as a representative of the Calcutta University to the Empire University Congress, and in the same year the Honorary Degree of D.Sc. was conferred on him by the University of Durham. He was also the recipient of similar Honorary Degrees from the Universities of Calcutta, Dacca and Benares. He was made a Companion of the Order of the Indian Empire in 1911 and was knighted after the last World War. In 1920 he was elected General President of the Indian Science Congress. In 1934 he was elected an Honorary Fellow of the London Chemical Society and also that of Deutsche Akademie, München, a little earlier.

At or about 1900, PRAFULLA CHANDRA founded the Bengal Chemical and Pharmaceutical Works which was converted into a limited concern in 1902, when he made a gift of his shares forming a Board of Trustees for conducting a school and promoting other benevolent activities in his native village in the district of Khulna. The Bengal Chemical and Pharmaceutical Works, now so well-known all over India, will ever remain as a glorious legacy to his countrymen and as a standing monument to his memory. He was also connected with a large number of limited companies, such as cotton mills, sugar works, chemical industries, pottery and porcelain industries, book

companies, etc., either as a Director, Promoter or Patron. Almost every industrial enterprise in Bengal had his blessings and encouragement. He never ceased to urge the Bengali youths to take to business and industries, following the example of their hard-working brethren from Marwar. The pre-eminence of Bombay and the activities of Parsis and Gujaratis in this respect were frequently referred to and stressed upon by him. No terms were considered too strong by him with which to condemn the indolence and ease of the Bengalee youths and their insane craze for university degrees.

In 1929 when the whole country was in a state of convulsion due to the Non-Co-operation Movement led by Mahatma Gandhi, he threw himself heart and soul into its constructive and economic programme. The great pioneer of chemical industries became an ardent advocate of spinning and weaving as a means of ameliorating the appalling poverty in the Indian villages. He himself took to spinning—a practice which he religiously kept up till failing vision intervened. He himself never used anything but Khadi till the end of his life. People often used to call him 'a saint of Science and an apostle of khadi'. A number of his shares in the Bengal Chemical and Pharmaceutical Works, Ltd. (face value Rs. 17,000, at present valued at Rs. 70,000) was made over by him to a Trust in order that the profit therefrom might be utilized for the benefit of poor widows, orphans, as well as for handspinning and production of Khadi.

His services to the country as a social reformer are outstanding. Long before the Congress Movement against untouchability was initiated by Mahatma Gandhi, PRAFULLA CHANDRA by his writings and speeches uncompromisingly fought against this and many other social evils like caste system, child marriage, dowry system, communalism and orthodoxy in general. In caustic, sarcastic and almost vitriolic terms he never ceased to cast his severe strictures upon our decayed and diseased social system which exercises such a baneful effect upon individual and national progress. As early as 1917 he presided over the Indian National Social Conference in Calcutta and exhorted the people to unite and do away with untouchability, as India divided within itself could never attain independence. He was an ardent advocate of Hindu-Muslim unity and the fusion of all communities into one great Indian nation.

As a philanthropist PRAFULLA CHANDRA was ever ready to come to the rescue of suffering humanity. Whenever he appealed for funds, as in the case of Khulna famine (1921) and North-Bengal flood (1922), money came simply pouring in from all parts of India for people had an abiding confidence in him.

In politics, though never actively on the field, he belonged to the advanced school. His well-known remark on a memorable occasion, "Science can afford to wait but Swaraj cannot", gives a measure of his patriotism.

Though a scientist by profession, his love for, and knowledge of, literature and history were much above the average. Rabindranath, Madhusudhan Dutt and

Shakespeare were his favourite poets from which he could quote off-hand from memory at any time. He was also very fond of the works of Emerson and Carlyle. His interest in literature and history was so great that he was often heard to say that he became a chemist by pure accident. In 1932 the first volume of his autobiography "Life and Experiences of a Bengali Chemist" was published. It was dedicated to the youth of India with the hope of stimulating their activities. The second volume of this work was issued a few years later (1935). An idea about the value of the book is best derived from what Prof. Armstrong wrote about it in *Nature*:—

"From beginning to end the message of the book is one of the highest endeavour—pulsating with vitality and intellectual force."

As an educationist he strongly supported the use of the mother tongue as the medium of instructions, without which originality and the habit of independent thinking can never be developed, nor the standard of efficiency in our schools and colleges be raised.

On the completion of his 70th birth-day the Indian Chemical Society presented him a Commemoration Volume which contained contributions from many eminent chemists of India and Europe. A similar Commemoration Volume and an address, on behalf of the Public of Bengal, was presented to him on the same occasion. His 80th birth-day also was celebrated by the public when he received a large number of congratulatory addresses from the Calcutta University and various other educational institutions as well as from many industrial and scientific organizations.

A saint of science, a patriot, a philanthropist and a nation-builder has passed away; a truly noble soul, a kind and compassionate figure has disappeared from our midst. But PRAFULLA CHANDRA was greater than his life or work and has left behind a pattern of character for us and more specially for the student world as pointed out by Gandhiji and so aptly and beautifully delineated some time ago by Rabindranath while presiding over his 70th birth-day celebration:

"It is stated in the *Upanishads* that One said 'I shall be Many'. The beginning of creation is a move towards self-immolation. ACHARYA PRAFULLA CHANDRA has become many in his students and has made his heart alive in the hearts of many. And that could not have been at all possible had he not unreservedly made a gift of himself. The power of creation having its inception in self-sacrifice is a divine power. The glory of this power in the ACHARYA will never be worn out by decrepitude. It will extend further in time through the ever growing intelligence of youthful hearts; by steady perseverance they will win new treasures of knowledge."

He came with a great mission to serve his country and has left an imperishable example, which will serve as a light and inspiration to the present and future generations.