



K. R. Krishnaswami

KOLAR RAMAKRISHNAIYA KRISHNASWAMI

(1898–1964)

Elected F.N.I. 1947

KOLAR RAMAKRISHNAIYA KRISHNASWAMI was born on August 14, 1898 in Kangayam, Coimbatore District, Tamilnadu.

He belonged to a family of middle class brahmins who migrated to Mysore State from the districts of Kanchi, Chingleput, North Arcot, Tirupati and Kalahasti. They were scholars in Sanskrit and many were of the priestly class who got several *manyams* (gifts of lands/villages) in Kolar district where they settled down as both scholars and agricultural landlords. His childhood was spent on the banks of the River Cauvery, mostly at Karur in Tiruchirapalli District.

Krishnaswami's father, Ramakrishna Iyer was an officer in the Madras Revenue service and was known for his forthrightness and quick disposal of revenue cases and appeals. He had three sons and three daughters and Dr Krishnaswami was the second of his sons.

EARLY YEARS (1898–1918)

Krishnaswami had all the care of his loving parents and from his childhood was industrious and showed great promise. He stood first in the high school examination where he had a high percentage of marks in Mathematics, Science and English, His parents thought he would be a good engineer/scientist.

However, the cold hand of cruel fate struck the family suddenly in 1912 and Mr Ramakrishnaiya passed away at the age of 52. The stricken family had to leave Tiruchirapalli and move over to Bangalore and later to Mysore under the care of their uncle K. Venkataswami Iyer who was an officer in the Mysore Educational Service.

After finishing high school, Krishnaswami joined the Central College, Bangalore. Chemistry was his special subject and he did well in it standing first both in his theory and practical papers scoring as high as 90% in theory and 100% in his practical examinations.

The question of higher studies or specialisation was remote during those days as facilities did not exist.

PROFESSIONAL CAREER (1918–1960)

After graduation in 1918 from Mysore University, he was offered a job as a Lecturer in the Vani Vilas Institute (a girls' school). He took up the job in a serene manner with hopes of switching over to research.



At that time, Mysore was just beginning to start industries and one of the most important was the Sandalwood Oil Industry. He joined the Sandalwood Oil Factory as a chemist where he helped standardise the method of distillation and other processes thus establishing it as one of Mysore's pioneer industries and as a good foreign exchange-earner. His work was noticed and recognition came from the Indian Institute of Science, Bangalore, where one of the professors praised the enterprising qualities of this young chemist. In 1921, he was appointed assistant to Dr H. E. Watson in the Inorganic Chemistry Department where he carried out important work involving chemical analysis and also laboratory scale industrial operation concerning the utilisation of various raw materials. His work became the bed-rock for the starting of several industries in the State such as lac, soaps and glycerine, iron and steel, manganese and chrome, cement, paper, phosphate and fertilizers.

He was instrumental in establishing the dichromate factory at Belagola and the factory at Chickbanavar for the manufacture of copper sulphate and nitrates. He urged setting up a carbide plant and was responsible for the present utilisation of Chitradurga and Ingaldal copper. He was also a Metallurgical Consultant to the Kolar Gold Mines for a considerable time.

His association with Dr Watson had a tremendous influence on him. Dr Watson was very meticulous and fastidious in his work.

During this period the work in the Department of Inorganic Chemistry consisted of analysis of samples of ores and minerals like iron, manganese, chromite and others. There was also consultancy work for various industrial concerns. It was at this time that Dr Krishnaswami's interests took deep root-industrial chemistry, with a scientific attitude, carrying with it the rigour and emphasis on quality so assiduously practised by Dr Watson.

A turning point came in Dr Krishnaswami's career in 1928 when after seven years of fundamental research in this country, he was able, through the generosity and good offices of a friend of the family, to proceed to U. K. He left India in March, 1928 for London, for his doctorate.

Krishnaswami joined the London University and worked under Professor Donnan, and was awarded the Doctorate after 2½ years of research for his thesis on the 'Re-determination of the atomic weight of Tantalum' (a rare earth).

Most of the time in London, he stayed in the Parliament Hills area and had occasion to meet several persons who distinguished themselves in many diverse fields. Among these, mention may be made of Paul Robeson, Dudley Senanayake, Harold Macmillan and V. K. Krishna Menon.

After he was awarded the Doctorate by the University of London, Krishnaswami went to Germany and worked in the laboratories there for a few months before returning to India in August, 1930.

On his return from England, Krishnaswami was offered the post of the Professor of Chemistry at the University of Madras but he preferred to continue his association with the Indian Institute of Science and work under his guru, Dr Watson. He was appointed lecturer in the General Chemistry Department. Three of Krishnaswami's earliest students were Sunawala, Dave and Giri.



Dr Watson resigned in 1954 and went back to the London University to become the Professor of Chemical Engineering at the University College (1934–51). From 1934 until 1938 when Sir J. C. Ghosh was Director of the Institute and also Head of the Department of General Chemistry, no one was appointed in the place of Dr Watson, but the work was looked after by Dr Krishnaswami and his old colleague, Dr S. K. Kulkarni Jatkari. It was during this period that Dr Krishnaswami's bias towards industry grew and developed.

He had contacts with many industries and industrialists. Being highly practical, he frequently visited as a consultant, the various industrial units in and around Bangalore—Sandal Oil factories at Kuppam, Kolar Gold Fields; Mysore Chrome Leather Co; Mysore Spun Silk Mills at Channapatna; Mysore chromite at Arsikere; Manganese Mines at Sandur; Mysore Chemicals and Fertilizers at Vanaspati and Refined Oil Mills at Daevanagere; Mettur Chemicals Ltd; Mysore Govt. Soap Factory; Buckingham and Carnatic Mills; Ogale Glass Works; etc. He was associated with the Seshasayees' South Indian Gold Prospecting Co., in Wynaad (Nilgiri Dist.) and the Bombay Mint Scheme. He did field prospecting for gold, survey and sampling of phosphatic nodules in Tiruchirapalli District in 1930's and 1940's and a 2-month survey of sulphur deposits in Quetta (Baluchistan) in 1944. During 1942–44, he carried out investigations for, among other things, the recovery of precious metals from mint dross, sulphur from Baluchistan sulphur ore, production of strontium carbonate for signal flares from celestite mineral from Trichinopoly and gold from pyrite gold ore of Wynaad.

In the midst of all these industrial activities (and an equally hectic social and club life), he served as an Examiner to many of the Universities in India—among them may be mentioned Andhra, Annamalai, Calcutta, Madras, Mysore and Nagpur. He helped in placing a number of his students in suitable positions in Industry, University, Government Departments and in other Institutions.

IN BIHAR (1945–51)

After the Second World War, the Bihar Government was on the lookout for a suitable person to help in the industrial development of the state. Dr Krishnaswami was chosen and went to Bihar as Industrial Chemist in 1945. Soon after he joined, he was placed in charge of the newly formed Post War Reconstruction Board, Government of Bihar, covering all types of industries, minerals and metals, lac, leather textiles, ceramic and fertilizers etc.

He prepared a project report on Bihar Spun Silk Mills now in production at Bhagalpur and a number of feasibility reports on prospective industries such as ceramics, porcelainware, glassware, bone meal and chemicals. He drew up reports for several new and large scale projects utilising the raw materials abundantly available in the State. He arranged for drawing up specifications for the plant and machinery, secured quotations for them from foreign firms and furnished the Bihar Government with financial estimates of capital requirement and returns expected. He carried out a survey of the raw material resources and proposed industries that could be started with reasonable chances of success. These proposals were then



subjected to an examination by a high power committee that included Sir Jahangir Gandhi, Mr K. C. Mahindra and Sir Lala Sriram as members. The work carried out by Dr Krishnaswami in promoting industrial growth of the State was greatly appreciated by the Government of Bihar.

In 1947, he was elevated as the Director of Industries of the State of Bihar. In this capacity, he was responsible for the implementation of a large number of industrial projects and was closely associated with the Sindri Fertiliser factory. He was solely responsible for the setting up of : (i) Super phosphate factory at Sindri; and (ii) High Tension Insulation Factory at Ranchi, as he took up the entire planning and carried out the execution of these two factories. He was instrumental in starting the State Industrial Research Laboratory, which was very close to his heart.

He was also closely and actively associated with the progress of education in Bihar. He was the Member Secretary of the State Technical Education Committee set up by the Government of Bihar for fostering the cause of technical education in the State. Under his leadership and guidance, the College of (Bugihuring) Engineering (now called the Bihar Institute of Technology, Sindri, District Dhanbad) was set up. He also ensured that this Institution got off to good start by putting it on sound lines, administrative and technical. He was also a member of the Jails Reform Committee and was on the Board of Railways.

He was deputed by the State (1949-50) to visit U. K., France and Germany to place orders for the plant and machinery required for the new industries in the State. He also represented the State at several Conferences convened by the Union Industries Ministry for discussions in connection with the proposed Industrial Policy which was debated and finally passed by Parliament in April 1948.

The incessant tours he undertook as Director of Industries, Bihar and the heavy load of work he took on himself affected his regular habits and thus his health. He carried out most of the file-work at home in the nights as meetings, interviews and frequent inspection tours took up a lot of his time. The consequent strain was too much for him and his health suffered. He left Bihar and came to Bangalore where he was offered a Senior Professorship as Head of the Department of General Chemistry at the I.I.Sc. He took up the post in 1952 and continued till March 1961.

LAST YEARS (1961-64)

After retiring from the Institute in 1961, he was Consultant to M/s. Essen & Co., Bangalore and Italab (private) Limited, Bombay reputed Industrialists and Analytical Chemists, respectively.

By this time, his health was failing and his movements were greatly restricted. However, his mind continued to be sharp and alert as ever.

On the eve of his death in the early hours of that Sunday, June 28, 1964, he had detailed discussions, he dictated lengthy note on "Laboratory Techniques of Gold Assaying."



ASSOCIATIONS WITH INSTITUTIONS

Dr Krishnaswamy was :

Fellow of the Royal Institute of Chemistry of Great Britain and Ireland (F.R.I.C.);

Fellow of the National Institute of Sciences (F.N.I.) of India;

Fellow of the Indian Academy of Sciences (F.A.Sc.);

Member of the Metallurgical and Geological Institute of India (M.M.G.I.);

President of the Royal Institute of Chemistry, London (Deccan Section)

President of the Association of Scientific Works of India,

Bangalore Branch — 1956-57 & 1957-58

Member, Atomic Energy Commission (Chemical Advisory
Committee) — 1958-59 & 1959-60

Member, Executive Committee, Current Science Association 1958-59 & 1959-60

Member, Ores and Raw Materials Committee, Indian
Standards Institution — 1958-59 & 1959-60

PERSONAL ATTRIBUTES

Tall and broad of shoulder, Krishnaswami had a well-proportioned and impressive figure. He believed in being well and properly dressed at all times. His honesty and integrity were unquestionable and with his ability and diligence he could have amassed a fortune as consultant and technical adviser to many industrial firms in the country. He spurned all offers of easy money and set a high example of personal honesty and rectitude.

Krishnaswami's interests were wide and varied. He designed, erected and worked a pilot plant at the Indian Institute of Science for the production of superphosphate from the phosphatic nodules of Tiruchirapalli (1942-44). In a similar manner, he erected a factory for production of sodium dichromate in Belagola near Mysore. In both these, he did practically everything from designing, through construction and fabrication, to working the plant. He set great store by doing things himself. He was a perfectionist and was reluctant to accept what was not up to his highly rigorous standards.

Krishnaswami was loyal and generous and elicited love and affection from his students.

K. R. SESHADRI

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