



Timothy W. Schaefer, Director, Strategic Atomic Research Center between 1950-1952. He has been primarily responsible for the planning and implementation of the peaceful use of nuclear technology.

'Dr. Homi Bhabha Memorial Lecture' Series

Chairman and Members of the Managing Committee of the Institution of Engineers (India), Bombay Centre, take great pride in instituting a memorial lecture series in honour of Late Dr. Homi Jehangir Bhabha, as a token of their affection and in recognition of the outstanding contributions made by him to science and Technology in this country, particularly in the field of India's Atomic Energy programme and Industrial development. Through this lecture series, the sponsoring Institution is paying its humble homage and perpetuating the memory of a genius who was at the same time an outstanding scientist, administrator and lover of art, and an Institution builder. The Inaugural Lecture in this series is being given by Padma Vibhushan Dr. Homi N. Sethna, Chairman Atomic Energy Commission and Secretary to the Government of India, on the topic, "Approaches To The Future".

Dr. Homi N. Sethna

Chairman, Atomic Energy Commission, and Secretary to the Govt, of India in the Department of Atomic Energy.

Dr. Sethna has been one of the principal architects of India's Nuclear Energy Programme. Born on August 24, 1923, he had his early education at St. Xavier's College and the Department of Chemical Technology Bombay and University of Michigan, U.S.A. He has been recipient of the LL. D., Honoris Causa, of Bombay University and D. Sc., Honoris Causa, of Karnatak, Marathwada, and Roorkee University, and I. I. T. Powai. Doctor of Technology, Honoris Causa Jawaharlal Nehru Technological University, Hyderabad. Fellow of the Academy of Sciences, Fellow of the Institute of Engineers, (India); and Fellow of the Indian National Science Academy and First President of Maharashtra Academy of Sciences. At the International level, Member, U. N. Scientific Advisory Committee, Member, Scientific Advisory Committee of IAEA and many other U.N. assignments. Chairman, Indian Rare Earths Limited, Chairman, Electronics Corporation of India and Chairman, Tata Memorial Centre.

He was awarded Padma Shri in 1959 for outstanding work in Engineering Sciences, S. S. Bhatnagar Memorial award in 1960, Padma Bhushan in 1966, Padma Vibhushan in 1975, Sesquicentennial award of University of Michigan in 1967 for "Knowledge, Wisdom & Courage to Serve", was awarded the Sir Walter Puckey Prize for the year 1971, for outstanding contributions to Production Engineering, and Sir William Jones Memorial Medal.

His major accomplishments have been, complete responsibility for construction of the Rare Earth Plant at Alwaye, Thorium plant at Trombay, Uranium metal plant at Trombay, the construction of Uranium Mill at Jaduguda, Project management of the Canada India-Reactor in the formative years; the most major assignment being the setting up of the Plutonium Plant at Tromby. He was the Director, Bhabha Atomic Research Centre between 1966-1972, He has been primarily responsible for the planning and implementation of the peaceful uses of Nuclear Technology.

In Remembrance

Dr. Homi J. Bhabha

Dr. Homi Bhabha had been the prime architect of India's Atomic Energy Programme, and was responsible for placing India in the front ranks, in the field of Nuclear science and Technology, amongst the most advanced countries in the world.

In the words of the Prime Minister, Mrs. Indira Gandhi, "India will long cherish Homi Bhabha's memory, for he was deeply involved in her destiny and in the processes of changing the texture and quality of her society", The history of the development of Nuclear Physics and of the harnessing of Atomic Energy in India, is the history of Dr. Bhabha's personal work and achievement. It is to India's immense benefit that Dr. Bhabha was one of those few great men, who had the gift of building up and inspiring others and endowing them with a spirit of self reliance.

Dr. Homi Bhabha always felt that the progress of science in general, and Nuclear Technology in particular owed a great debt to Pandit Jawaharlal Nehru. In his own words, "I think it only appropriate that I should recall at this stage, the immense debt that Indian science and scientists owe to Jawaharlal Nehru Science was an essential, indeed basic, component of the India which he sought and worked so hard to build. He saw the essential role of science in its historical perspective, not only in transforming the material environment, but in transforming man."

Dr. Bhabha had believed in a new method of building men and institutions, which he termed as "Growing Science". He also felt that the lack of proper appreciation on the part of administration, of the requirements of scientists and technologists was primarily responsible for slow progress. He said, "the administration of scientific research and development is an even more subtle affair than the administration of industrial enterprises. I am convinced that it cannot be done on the basis of borrowed knowledge, It must necessarily be done, as in the technologically advanced countries, by scientists and technologists themselves." The whole philosophy of Dr. Bhabha is clearly summarised in an invited lecture on the subject of "Science and the Problems of Development", which he gave before the International Council of Scientific Union on January 7, 1966, in Bombay, just 17 days before his tragic death in an air crash.

Sir John Cockcroft says about him, "there is no doubt that the achievements of the high standards in science in a few centres can be of the greatest importance in the development of a nation, by providing a goal to which other Institutions can work. Human progress has always depended on the achievement of a few individuals of outstanding ability and creativeness. Dr. Homi Bhabha was one of these."

The five years he spent in Bangalore from 1940 - 45 were important years in Homi's life in many ways. This was the period when he found his mission in life. He became aware of the role he could play in the development of India. It was during this period that he was elected a Fellow of the Royal Society of London, at an early age of 31, and also received in 1942, the Adams Prize. He received many awards and honours throughout his life, but he always had particular pride and affection towards these two.

Dr. Bhabha's far-range planning and prophetic ability to look into the future can be gauged from a letter which he wrote to Sir Sorab Saklatvala, Chairman of the Sir Dorab Tata Trust, making him a formal proposal for the setting up of an Institution.

The letter also indicates the basic guide lines, which defined his way of functioning throughout his life. The proposal was for the setting up of the Tata Institute of Fundamental Research, which he considered, "an embryo from which I hope to build up, in the course of time, a school of Physics comparable with the best anywhere." "Moreover when Nuclear Energy has been successfully applied for power production, in say, a couple of decades from now, India will not have to look abroad for its experts, but will find them ready at hand."

It may be remembered that this letter was written in Bangalore in 1944, a year before Hiroshima; when the work on the atom bomb was being carried out with the greatest secrecy in U. S. He further goes to say, and which clearly indicates his dedication to the role he was

to play in India, "I had the idea that after the war, I would accept the job in a good university in Europe or America, because universities like Cambridge and Princeton provide an atmosphere, which no place in India provides at the moment. But in the last 2 years, I have come more and more to the view, that, Provided proper appreciation and financial Support are forthcoming, it is one's duty to stay in one's own country, and build up schools comparable with those that other countries are fortunate in possessing."

He had decided for himself that his fullest devotion and deepest commitments would be for India. He succeeded in building Tata Institute of Fundamental Research which he fondly called, "the cradle of the Indian Atomic Energy Programme", He further patterned it as he was very fond of putting, in the words of the President of the Kaiser-Wilhelm Society, "the Kaiser Withelm Society, shall not first build an institute for research and then seek out the suitable man, but shall first pick up an outstanding man and than build an institute for him." Homi Bhabha implemented this dictum faithfully in all the organisations that he built up. The other principle he followed assiduously was that "financial support from Government need not, however, entail Government control." In all of the organisations which came within the perview of the Atomic Energy Commission, Homi Bhabha blazed a new trail and set up new patterns of administration in the recruitment of personnel, for giving advanced increments and promotions, for financing and for financial checks, in each case assigning the highest priority to the scientific objective and the attainment of this-with administration playing only the role of a supporting system.

Homi Bhabha was willing to stake his entire reputation to achieve the most difficult tasks, and to accomplish these, he set up completely new traditions in administration, attitudes, and relationships between men. He believed in a landscaping which took into account what already existed. His aim was not to bulldoze all that existed and plant Science and Technology as a shining imported item and to create a uniform faceless society-but to grow science indigeniously as a way of life, in the midst of all that was good and great from the past, a screinice which would bear the imprint of the traditions, the culture and natural gifts of the Indian people. This is clearly demonstrated by the remarkable juntaposition of Bhabha Atomic Research Centre at Trombay and Elephanta caves across the Sea and the Kalpakkam Nuclear Power Stations in Madras and the adjacent famous temples of Mahabalipuram, each looking out into the Bay of Bengal. Those who know Homi will not be surprised.

On the question of application of Nuclear Technology Dr. Bhabha was committed to its peaceful applications. He however warned the United Nations on 24th August 1964, in a speech on "Nuclear Disarmament": "The explosion of a nuclear device by China is a signal that there is no time to be lost. Neither the United Nations nor the great powers have yet succeeded in creating a climate favourable to countries which have the capability of making atomic weapons, but have voluntarily refrained from doing so. Steps must be taken to create such a climate as early as possible."

There were remarkable similarities between Nehru and Bhabha. Both were intellectuals with aristo cratic family backgrounds, products, of Cambridge, who had spent long years in the West, and as a result, had absorbed deeply the finest aspects of the culture and traditions of the west and yet each was an Indian Both had a remarkable sense for all that was beautiful; Homi found, joy in music, painting, flowers, gardens and architecture, Jawaharlal with the rose in his buttonhole, with his love for the mountains, for poetry. Each was deeply committed to India and its future and had great confidence in the emergence of a great and powerful India. Both had strong faith in the power of Science and Technology as an instrument for economic and social change. And it was no wonder that Homi found in Jawaharlal his most ardent and powerful supporter.

Homi succeeded in enthusing those who worked around him with the same spirit of dedication in national endeavour which motivated him, enthused them to maintain the highest standards of sceintific integrity, and to set standards of quality in all that they did This viable, self-generating group of trained personnal, the scarcest commodity in a developing nation, products of Homi Bhabha's inspiring and warm leadership, are his richest legacy to India, which has indeed been fortunate in having such a son.

Homi Bhabha was one of the great experiences in the life of this country and in this sense he will never die unless Science itself ceases to exist.