

DR. ATMA RAM- A PERSONAL TRIBUTE

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Dr. Atma Ram former Director General (D.G.) of Council of Scientific and Industrial Research (CSIR), Government of India (GOI) from 1966-71 was one of the leading scientists of India.¹ Very little biographical information or material is available on him and so I thought of writing it based upon my interactions with him.

Dr. Atma Ram was born on 12 October 1908 in a small village of Pilana, Dist. Bijnor, U.P. and died on 6 February 1983 in Delhi. He was 74 years of age at the time of his death.

Coming from a very poor family, Dr. Atma Ram had to struggle continuously to get educated. He would give tuitions and do all sorts of odd jobs to pay for his fees but his formidable intellectual ability and will power made him get a Doctor of Science (D.Sc.) degree from Allahabad University in 1936 under a prominent chemist Dr. N.R. Dhar – a great achievement in those days. Dr. Atma Ram was also a protégé of Dr. Meghnad Saha, another professor at Allahabad University.²

After getting his degree Dr. Atma Ram had to struggle really hard to get a decent job. He gave many interviews and was rejected by most of the companies till he was finally accepted as a research assistant in a newly formed government organization Industrial Research Bureau (IRB), which in early 1940s morphed into Board of Scientific and Industrial Research (BSIR) headed by Dr. Shanti Swaroop Bhatnagar.³ However very early it was realized that for effective functioning of this type of research organization it should be an autonomous body and hence Council of Scientific and Industrial Research (CSIR) was established

in 1942 with Sir Ramaswamy Mudaliar as the Founder President and Dr. S. S. Bhatnagar as the Director General.

At IRB, Dr. Bhatnagar was impressed by Atma Ram's originality and hard work while working on developing indigenous fire extinguisher foam for war efforts and thus held him in high esteem.⁵



Dr. Atma Ram

After the CSIR was setup in early 1940s Dr. Bhatnagar together with Sir Ramaswamy Mudaliar and Dr. Meghnad Saha set in motion the process of establishing Industrial research laboratories all over the country.

Consequently following five National laboratories were planned: National Physical Laboratory (NPL), National Chemical Laboratory (NCL), National Metallurgical Laboratory (NML), Fuel Research Station and Central Glass and Ceramic Research Institute. Dr. Atma Ram was

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appointed as secretary of the committee for setting up Glass and Ceramic Institute. The job required him to survey the raw material needed for the industry and find out the problems associated with glass and ceramic industry.⁴

Dr. Atma Ram toured the country and visited all the major glass and ceramic industry and centers and compiled a report. This comprehensive report which gave the direction of R&D in glass and technology field including a detailed plan on manpower, budget and expenditure required for the Institute was the first such report on any CSIR laboratory. It was appreciated and highly recommended by Dr. Meghnad Saha as the model report for all future CSIR laboratories.⁵ This therefore set the tone and the framework of setting future laboratory and hence Dr. Atma Ram can be rightly called as someone who helped lay the foundation of CSIR.

Because of his work in planning of Glass and Ceramic Research Institute, both Dr. Bhatnagar and Dr. Saha felt that Atma Ram should head it. Thus Atma Ram became the founder Director of Central Glass and Ceramic Research Institute (CGCRI), Kolkata— one of the first CSIR laboratories whose foundation stone was laid in 1945 and inaugurated in 1950.¹ He pioneered the innovations in glass and ceramic technologies and was the developer of optical glass (used for defense purposes) in India. He not only developed the technology of optical glass but also set up its production in CGCRI. He had 36 patents in glass, ceramic and mica industries and nearly 100 technical papers in various national and international journals.⁶

Besides his pioneering work in glass and ceramics, Dr. Atma Ram also developed foam for fire extinguishers; mica-based paints and insulating bricks; foam glass insulator; chemical porcelain; railway signal glasses; glass electrodes for pH meters and spark plugs; and the substitution of imported selenium with copper to produce the ruby red glass which was one of the popular items of bangle making industry of Firozabad in UP. His whole focus in R&D was to solve the problems of industry and the society.

For his pioneering work in glass and ceramic technology he was the recipient of first Shanti Swarup Bhatnagar Medal (1959); Padma Shri (1959); Hon Fellow of Society of Glass Technology, Sheffield (1966), Hon-Doctorate from Lenin Soviet Technological Institute, Leningrad (1967), among others. He was the President of Indian Science Congress (1968) and Indian National Science Academy (1969-70).⁶

Dr. Atma Ram was intimately associated with Indian Science News Association and the journal *Science and*

Culture for a long time. He was one of the editorial collaborators of *Science and Culture* and became a member of the Council of ISNA in 1953. He became President of ISNA during 1965-66, and served as Vice-President thereafter.

Dr. Atma Ram was brother-in-law of my father Jagdish Rajvanshi who had gone to jail during the Quit India movement in the 1940s and was an important member of Uttar Pradesh (UP) Congress working committee (CWC). He had introduced Dr. Atma Ram to Shri. C. B. Gupta (CBG) during early 1950s. CBG later on became Chief Minister of UP three times. Dr. Atma Ram's political connections started with his friendship with Shri. C. B. Gupta.

My earliest memories of Dr. Atma Ram were from mid 1950s when he used to come to Lucknow enroute either to Delhi or Kolkata and always stayed with us in our house in Hazratganj. He would also use his Lucknow visits to meet Shri. C. B. Gupta.

Very often the CSIR directors of Lucknow labs would ask him why he preferred to stay in a small and old house of ours. He would always reply that he would rather stay in his brother's house than in a CSIR Guest House. He also told them that he liked the simple homemade food that my mother cooked and preferred it any day to the Guest House food. He was a very humble and simple man.

He was a tee totaller and a pure vegetarian. In fact he told me of an amusing incident. He was invited by the French Government in late 1960s to visit the world's largest solar furnace in Odeillo, France.⁷ During the reception in his honor he was offered hard liquor in a hollowed water melon! He thought it was some kind of fruit juice and then realized that it was hard liquor and so refused to have it. In all official functions abroad he used to toast his hosts with water.

All his life he suffered from asthma attacks. He got this ailment after his car accident in Germany in late 1940s in which he also lost his one eye. The heavy dosages of allopathic medicines given during his two month hospital stay in Europe affected his lungs. Thus he always carried a bronchodilator which he used many times in a day. As a young child I was very fascinated by that and was curious as to why he would be pumping air in his mouth! Because of his ailment he also developed an aversion to allopathic drugs and became a great admirer and practitioner of homeopathic medicines.⁵

Besides practicing homeopathy Dr. Atma Ram was adept in yoga. I was very impressed with his mastery of

sheershasan (head stand); *mayur asan* (peacock pose) and *nauli* (stomach churning). These yogic exercises helped him keep a check on his asthma problems.

My first really meaningful discussion with him happened in 1972 in Delhi when I had gone to attend the marriage of one of his nephews. I had finished my B.Tech from IIT Kanpur in that year and was feeling dejected since I could not get scholarship to any U.S. university for my higher studies.

He sat down with me and told me that probably providence has planned better things for me in future and whatever has happened is probably for the good. And then he narrated his own experience of how he had gone to give an interview for a chemist in a Sugar Institute in Kanpur and waited in hot June sun under a tree for his number to be called. But the call never came and after waiting for 3-4 hours he was told to go home since the Institute had already selected somebody. He said that he felt extremely dejected but had he gotten that job he would still be a chemist in that Institute. Providence had planned better things for him.

That was a remarkable and a powerful lesson for me because my whole life also changed when I went to USA after doing my M.Tech. Not only did I work under a pioneer solar energy expert but also met my wife in the University of Florida.⁸ Since then I have also believed in that philosophy.

Dr. Atma Ram narrated to me many such events where he felt that providence played a part in guiding his destiny. He was not a religious man who believed in rituals but always believed in higher powers who guided the destiny of men and nations.

Apparently his tenure as DG CSIR was marked with controversies.⁹ I was a student in IIT Kanpur during the time when he was DG of CSIR (1966-1971) and so never knew about them but became aware of this aspect only when I started writing this tribute.

There were pros and cons to this controversy depending on whom one believed. However I will try to speculate on some possible causes. Because of his deep friendship with C. B. Gupta I think he got closely associated with Cong (O) during the time of Congress split by Indira Gandhi in 1969. Cong (O) camp had C.B. Gupta, Nijalingappa, Morarji Desai among others. That could have been one of the causes of friction between Dr. Atma Ram and some of Mrs. Gandhi's followers who were inimical to him.

Another reason could be that Dr. Atma Ram, being a Gandhian and an honest person, was very particular about misuse of government funds by scientists. An example of this was when he took over as DG CSIR in Delhi he was aghast to find the office of DG decorated as a palace by his predecessor; with very expensive carpets, paintings and other decorations. He promptly sent all of them to the Rashtrapati Bhawan since they were the property of Government of India!

It is quite possible that the controversies that erupted during his tenure as DG of CSIR might have originated from this outlook of his. The vested interests that he attacked then grouped together and might have raised the temperature. Besides, he had differences of opinion with atomic scientists like Vikram Sarabhai, Homi Bhabha, Raja Ramanna who came to exert tremendous influence on the political establishment and probably wanted total control of CSIR.¹⁰

He rightly suggested at that time (and he was far ahead of his times) to import technologies from developed countries and then Indianize them. India was going through an extreme socialist phase during those years and some members of the scientific ruling elite (Sarabhai and Ramanna being the most prominent among them) might not have liked this line of thinking. Thus the combination of forces outlined above might be the reason for the controversies during his CSIR tenure as DG.

After his retirement from CSIR in 1971, he was the advisor and on board of various companies. And when Morarji Desai became the Prime Minister in 1977 he immediately made Dr. Atma Ram the Chairman of National Council on Science and Technology (NCST) and gave him a Cabinet rank post. In that position he was the principal scientific advisor to the Prime Minister and the Science and Technology czar of India.

In 1974 I was selected as one of Government of India national scholar to pursue my Ph.D. in solar energy in U.S.A. under the solar energy pioneer Dr. Erich Farber.¹¹ Dr. Atma Ram was very happy with this development and took tremendous interest in my career.

From U.S.A. I used to regularly send him letters telling him about the solar energy work being carried out in U.S. Solar energy was a hot topic in those days and because of my association with Dr. Farber I was exposed to lots of interesting developments in solar thermal technologies and thus would report to him on them regularly. He appreciated those letters and information.

Unknown to me he had gotten a cabinet note passed to set up a Solar Energy Research Institute of India. Unfortunately Morarji Desai government fell in 1979 and Dr. Atma Ram immediately resigned and that was the end of Solar Energy Research Institute of India. Only in 2013 a National Solar Energy Institute was established in India. I was told that Dr. Atma Ram's cabinet note made in late 1970s played an important role in its setting up.¹²

Dr. Atma Ram was very much influenced by Mahatma Gandhi. I guess most people of that generation were. Also because he came from a very poor family he understood the power of simple living and high thinking principle of Gandhiji. And in the Gandhian tradition he always wanted the science and technology to be used for Indian masses in rural areas (a theme he promoted vigorously through NCST) and was thus more rooted to the earth than the scientific establishment that came to dominate Indian scene later on. I also think that he was probably the first proponent of use of S&T for rural areas – a theme that was echoed by various Prime Ministers and major leaders of India later on.

His simple living is also reflected in this example. In January 1978 I had come to Delhi from USA to attend the International Solar Energy Conference which was held in Vigyan Bhawan – a venue close to his Central Vista house. He was the patron of the conference. So every day during lunch time I would come with him to his house for lunch. After lunch he would sleep on a barren wooden cot (charpai) which was put in the sun in his court yard with only a pillow under his head. For a cabinet member of Morarji Desai this was Gandhian living at its best. He told me that he did not want to forget his village roots. He would also jokingly tell me that he is absorbing my solar energy!

He was never perturbed by any controversy and always had a detached outlook towards life and believed in Gita's philosophy of *Karma Yoga*. Quite a number of people I talked to later on also noticed this aspect of his personality. He was a very approachable person and many a times science reporters or others would meet him either at his office or at his house without any prior appointments.

Though Jawaharlal Nehru, our first Prime Minister, was impressed with the optical glass work of Dr. Atma Ram and had visited CGCRI quite a few times with Dr. Bhatnagar, there was a difference of opinion between Atma Ram and Nehru. He always felt that Nehru gave too much importance to Atomic Energy establishment. In fact he told me of an episode where Atma Ram and Meghnad Saha in

early 1940s spent quite a lot of time in developing S&T policy for India and Nehru saw it for 15 minutes and left. Atma Ram told me that he and Saha felt very much let down since they felt Nehru did not appreciate the efforts that they had put in making the plan.¹³

In late 1970s Prime Minister Morarji Desai appointed Dr. Atma Ram as Chairman of fact finding committee to look into the affairs of Atomic Energy. Since Morarji Desai had very little trust in Atomic Energy establishment he wanted his trusted scientific advisor to find out about the goings on.

Dr. Atma Ram told me that he had a meeting with Dr. Ramanna and Dr. Homi Sethna together with all big honchos of BARC. In the meeting he asked Dr. Sethna how much heavy water did India have. He quoted a figure which was immediately disputed by Dr. Ramanna who quoted another figure which was 10 times bigger. An argument ensued between Sethna and Ramanna and even after 1 hour when it was not resolved Dr. Atma Ram closed the meeting requesting Sethna and Ramanna to resolve the issue and inform him accordingly.

Dr. Atma Ram told me that he came back to Delhi and tendered his resignation as the head of fact-finding committee and told the Prime Minister that when Atomic Energy people cannot even decide about this simple issue then how do we trust them with bigger things?

Anytime I went to Delhi I would go and see him in his Maharani Bagh house. We used to discuss various issues about how S&T should be utilized for rural India and so he was very happy to know that in my small rural town NGO. I would try to solve them with the best tools of Science and Technology.¹⁴

He was a very practical man and used to tell me that anytime I come to Delhi to meet government officials I should tell them that in Delhi I stay with Dr. Atma Ram. He told me that in Delhi culture it is important whom you know and not who you are!

Unfortunately he did not live long enough after my return from US to India in late 1981. He died in early 1983 in his sleep – a mark of a great soul. My last meeting with him was in November 1982. After dinner with him in his house in Maharani Bagh his driver dropped me at my aunt's place in Green Park. But before that he got down at the residence of Director of All Indian Institute of Medical Sciences (AIIMS). When I asked him why he was meeting the Director he replied that friendship with such people comes handy during medical emergency!

His death at such an early age was therefore a great loss to me personally and to the Indian science and technology community.

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