

## A Scientist who cared

Blink, Saturday 26<sup>th</sup>, 2020.

<https://www.thehindubusinessline.com/blink/explore/mn-saha-a-scientist-who-cared/article32693417.ece>

Academics are usually supposed to be denizens of that rarified place called the ivory tower- a place where they work on their intellectual pursuits disengaged and disconnected from the practical, quotidian concerns of ordinary folk. And nothing is a bigger anathema to academics than engagement with the dirty world of “politics”. Yet, there have been some who not only excelled in their academic vocation but also been acutely concerned and actively engaged with the problems of everyday life. M.N. Saha exemplifies this for me. And that is what makes him such a fascinating personality.

A world-class scientist, a nationalist and socialist, a deep thinker as well as an institution builder who was not afraid to take on those in power, Meghnad Saha was born in an extremely poor family in rural Bengal in 1893. He completed his initial education in Dhaka and then moved to Presidency College, Calcutta where his teachers included J.C. Bose. He started teaching at Calcutta, later moved to Allahabad University coming back to Calcutta as the Palit Professor in 1938. Apart from his seminal work in astrophysics, which forms the bedrock of modern astrophysics, he also wrote a widely read textbook on thermodynamics and is credited with (along with his classmate S.N. Bose) of producing the first translation of Einstein’s papers on relativity from German.

However, it is not his scientific brilliance which is unusual- there were many among his contemporaries who were also excellent scientists. It was Saha’s commitment and engagement with public life in all domains that for me is the most interesting aspect of his career.

In 1923, when Bengal was ravaged by massive floods, Saha was actively involved in organizing relief for the victims. However, the scientist in him was not content with just distributing relief material- he wanted to enquire into why floods were causing so much damage in recent years. Overflowing rivers had always been treated as a boon for agriculture but now they were causing devastation in terms of loss of property and lives to disease. Investigating the causes of this shift, he found that the growth of the railways was primarily responsible for the destruction. The embankments for the

railway lines had blocked the natural drainage channels and hence water which would have ordinarily drained away naturally, now had nowhere to go. This experience stayed with him and it was he who in 1943 proposed an integrated plan for management of the Damodar river valley along the lines of the Tennessee Valley Authority in the USA. It would be interesting to see how he would have reacted to some of the human suffering as well as ecological havoc wreaked by large multipurpose hydro projects like those in the Damodar valley in the last few decades.

In 1935, he founded the Indian Science News Association for the dissemination of science and scientific ideas among the public. The Association brought out a journal, "Science and Culture" which is still going strong after 6 decades. He wrote more than 200 articles on many diverse topics in the journal- the use of science and technology for national development, industrialization, nuclear energy, river management, centralized planning, and the politics of the atomic bomb and the reform of the Calendar. In fact, in 1952, he chaired a committee which unified the tens of different calendars hitherto in use into the uniform Saka calendar which has been the official calendar of the government since then.

Saha, like many of his contemporaries, was very impressed with the success of Soviet planning in pulling up an incredibly backward country to a scientific and technological power in a few decades since the revolution. He believed in large scale, centrally planned industrialization and vociferously opposed the proponents of village industries during the debates in the Indian National Congress. Whether the final shape state-led industrialization took in the subsequent decades was what he had wanted would be one of the things one would like to have asked him.

In the years leading up to independence, Congress was charting out plans for the development of various sectors including nuclear energy in independent India. Saha was of the opinion that we need to first develop the industrial and human resource base before we create a centralized organization for the development of nuclear energy. His plan was to strengthen the university system to produce the scientific manpower before undertaking the project of nuclear energy. This is what led to his now famous disagreement with Nehru who was more inclined to go along with the suave, Oxbridge educated Homi Bhabha than with the rustic, outspoken and down to earth Saha.

Bhabha advocated an immediate fray into the development of nuclear energy. This decision to locate the site of scientific research away from the university system had many consequences some of which we are still living with.

Saha's disagreement with Nehru on this and many other issues led him to jump into active politics. He stood for elections in 1952 as an independent candidate and won from North-West Calcutta. Incidentally, he had to take a royalty advance of Rs 5000/- from his publishers to fight the election. He participated actively in the debates in the Parliament till his untimely death in 1956.

The poor boy from rural Bengal, who had to occasionally swim across flooded rivers to get to school, rising to the pinnacle of scientific glory is by itself fascinating. In Saha's case, this was not enough- his deep rooted concern for the ordinary person and his passion for a rational and scientific approach towards problems facing a newly independent nation were central to his personality. It was not that he thought of politics in the broadest sense as an addendum to his scientific work. For him finding the causes of flooding in rural Bengal was as important as finding the composition of the solar atmosphere. And he excelled in both.

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