



Nucleus and Nation: Scientists, International Networks, and Power in India.

Author: Robert S. Anderson; The University of Chicago Press (2010), Pages: 683.
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In one of the most awaited books narrating the story of development of science and technology (S&T) in India in the post-independence era, Robert Anderson's effort is commendable. This book maps not only the history of diverse efforts in the field of nuclear science in India, but also tells the social and political history of evolution of a strong scientific culture in the country. The author has presented a comprehensive sketch of networks of science and scientists in and outside India, and the way they manage the affairs of science. Rather than tracing a linear history of science and technology in India, the book is a thick and rich description of various events that happened at different points of time and their relation with other events in past and future. Anderson's work also makes a relevant contribution by presenting a detailed narrative of history of S&T in India. An account of events which not only gives an insight into those times but is also relevant in today's context in terms of understanding the country's scientific culture.

This book contains twenty-five chapters and at the beginning, the author has clarified the meaning of the words used in the title such as 'nucleus' and 'nation' and justified their relevance. The word nucleus does not only refer to the core of a particle, but also to the scientists who were at the core of development of S&T in India. The first part of the book tells the history of different iconic scientific and non-scientific figures in India and their role in establishing a scientific culture. The book starts with two Indian scientists Meghnad Saha and Shanti Swaroop Bhatnagar and their discussion about the future of S&T in India faraway in London at the beginning of the 20th century. The author goes back in time to understand the social background of these scientists and tells the

story of their struggles and rise as great scientists. Their engagement with Indian as well as foreign scientists and the role of these networks in the development of science in general and nuclear science in particular, is discussed in detail. Further, the author has described the encounters of these scientists with Sir C. V. Raman, which throws light on the competition among scientists for getting hold of different scientific institutions. The narrative also reflects the issues of caste, class, and regionalism among scientists, which can be observed even today. These conflicts somehow proved to be beneficial for the development of S&T in India as it led to establishment of various scientific institutions such as Indian Institute of Science at Bangalore and Tata Institute of Fundamental Research at Bombay and journals like *Current Science*. Even today these institutions are the face of Indian scientific culture.

In the latter part of the book, the author discusses more about day to day functioning of different scientific institutions in India. This section shows that the founders of these institutions have had their influence on governing, funding, and areas of focus of research. For instance, Saha Institute of Nuclear Physics and Tata Institute of Fundamental Research are different despite getting funding from same agency like their founders Saha and Bhabha.

Looking at these narratives, one can figure out that till the time Jawahar Lal Nehru was Prime Minister, these scientists had an upper hand in the country's scientific affairs. However, after Nehru, the scenario changed and politicians started having the last say. They define the state of S&T according to their wishes and ideologies. The role of scientists at the time of Emergency in India and the emergence and politics behind various committees and com-

missions are also discussed at great length in the book. The era of ‘self-reliance’ and its philosophies are also explicitly discussed. However, the main focus is on nuclear energy and related institutions. This book revolves around certain iconic figures in Indian science like Saha, Bhatnagar, Raman, Bhabha, and Sarabhai. However, there are several other scientists and unsung individuals who have contributed to this field in their own unique ways. Many of them have been mentioned as a passing reference, and perhaps, they deserve more attention.

Anderson’s work holds more relevance at a time when India has successfully launched its Chandrayaan and Mangalyaan missions. These and several other achievements in the field of nuclear power and energy can be attributed to the efforts of the scientific community of 20th century India and the West. The language of the book is very lucid and one can easily grasp the ideas and messages communicated by the author. The way author has collected facts and presented narratives from different sources, is a good example of a case study. It also helps in understanding the social and political culture of science and scientists in developing countries like India. This

book is a useful resource for scholars in the field of STS, scientists, policymakers and enthusiasts trying to understand the scientific cultures inside-out in a given society.

Hemant Kumar, Centre for Studies and Research in Science, Technology and Innovation Policy, Central University of Gujarat, Gandhinagar, Gujarat-382030, INDIA.

E-mail: hemant@cug.ac.in

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