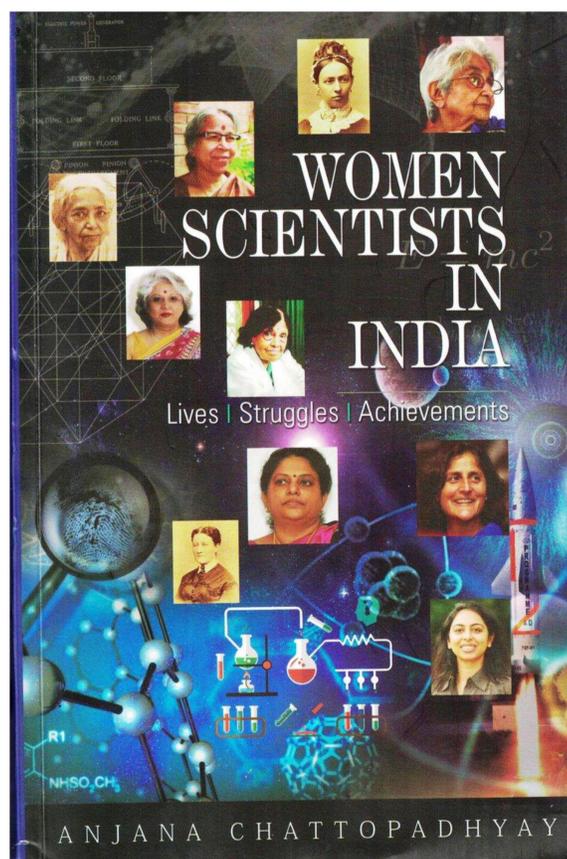


Achievements and Struggles of Women Scientists in India



Women Scientists in India: Lives, Struggles and Achievements,

By

Anjana Chattopadhyay, National Book Trust, New Delhi, 2018, 492 pages, paperback, ISBN: 9788123781440.

Recently the Google Arts and Culture portal added an online collection titled “Women Scientists of India”^[1] to pay tribute to seventeen women Fellows of the Indian Academy of Sciences (IASc) who have passed away. While this collection was obtained from the IASc publication “Lilavati’s Daughters”,^[2] another publication comes to our mind depicting the lives and achievements of Indian women scientists, namely, “Scientifically Yours: Selected Indian Women Scientists”.^[3] In “Lilavati’s Daughters” the women scientists presented their memoirs and narrated how did they overcome socio-cultural barriers to

pursue their scientific or academic career. The western education they received during their schooling and graduate studies led to a definite career pathway, which was a rarity during the late nineteenth and early twentieth centuries. However, things got improved after India’s independence due to the establishment of various colleges for the women or creating space for women students in the general degree colleges and universities. Women’s entry in the science stream was also ensured a sustained supply of human resources which would teach science subjects in schools, colleges and universities. Some of them got absorbed into the scientific laboratories built around the university systems, national laboratories and private sectors. However, medical practitioners received higher societal recognition, as they provided humanitarian services to the womenfolk in the erstwhile conservative society. The key scientists while overcoming gender bias in the twentieth centu-

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ry, handhold the younger generations to make them noticed in the scientific domain. Both the books gave the space for autobiographical details of individual women scientists.

In the book titled “Women Scientists in India: Lives, Struggles and Achievements”, author Anjana Chattopadhyay has painstakingly collected information of individual scientists from different sources, including the citation plaques of different awards they received and the obituaries published in different periodicals. The women recipients of India’s highest civilian awards, i.e., Padma awards, have been included in this book in two different categories, viz., Medicine and Science and Engineering. In the Introduction chapter, the author provides a statistical analysis of the achievements of women scientists in different national awards. During 1954–2013, 36 women received Padma awards in Medicine category, achieving only 7.6% overall share out of 468 awardees. During the same period, 14 women received Padma awards in Science and Engineering category, achieving only 3.1% overall share out of 443 awardees. The author further compares the situation to the Nobel Prize awardees. Only 18 (3%) recipients were women out of 599 awardees during 1901–2017 in three fields of science (physiology, chemistry and physics).

Chattopadhyay further highlights the female awardees of the Shanti Swarup Bhatnagar Prize (SSBP) for Science and Technology, given annually by the Council of Scientific and Industrial Research (CSIR) for outstanding research. From 1958 until 2018, only 16 (2.99%) women researchers could achieve the status of the SSBP Awardees out of 535 Awardees. Three of them were conferred the prestigious Padma Awards in their later life, namely professors Asima Chatterjee (Padma Bhushan), Archana Sharma (Padma Bhushan) and Indira Nath (Padma Shri), while Sanghamitra Bandyopadhyay (SSBP in 2010) was conferred the prestigious Infosys Prize in 2017. The Introduction Chapter then notes the first female graduates in India in different fields of science, who excelled in their later life. In 1886, Kadambini Ganguly and Anandibai Joshi became the first medical graduates, while Kadambini studied in India and Anandibai studied in the USA. That was the beginning of women’s participation in the practice of medicine. The Table II (p. 7–8) highlights eleven Indian achievers in medical education during 1886–1916, while five of them received a medical degree from India. But for postgraduate study other women had to leave India and get admission abroad.

In terms of leadership roles played by the women scientists, Asima became the first woman President of the Indian Science Congress Association (ISCA), while Sneha Bhargava became the first woman director in the All India Institute of Medical Sciences (AIIMS) and Satyavati G. Vedanti became the first woman Director General in the Indian Council of Medical Research (ICMR). The book also includes biographies of India’s pioneer woman biotech-entrepreneur Kiran Mazumdar-Shaw; present Deputy Director General of the World Health Organization (WHO) Soumya Swaminathan; first Indian woman Fellow of the Third World Academy of Sciences (TWAS, Italy) Bimla Buti; first woman member of Indian Antarctic Expedition (1983) Sudipta Sengupta; first woman Fellow of IASc (1935) and Indian National Science Academy (1957) EK Janaki Ammal; Padma Vibhushan awardees physician Captain Laxmi Sahgal (also a freedom fighter) and cardiologist Sivaramakrishna Iyer Padmavati; and many other pioneers in their respective fields.

The author compiles a useful Appendix (p. 461–471) on contributions of foreign missionary women doctors in India, listing 26 women physicians, who provided the humanitarian services in India during late 19th and early 20th centuries. Index III (p. 479–492) gives a ready reckoner on outstanding achievements of 77 women scientists and physicians. With a plethora of information made available, this book will undoubtedly inspire young students to become active STEM (Science, technology, engineering and mathematics) researchers in their respective fields. The book’s attempt to portray women’s participation in STEM research in India will also help our understanding of the socio-cultural barriers and challenges women face while choosing a career of scientific research. The lives and achievements recorded in a single volume are very praiseworthy. However, the author should consider expanding this volume for the inclusion of the young achievers.

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