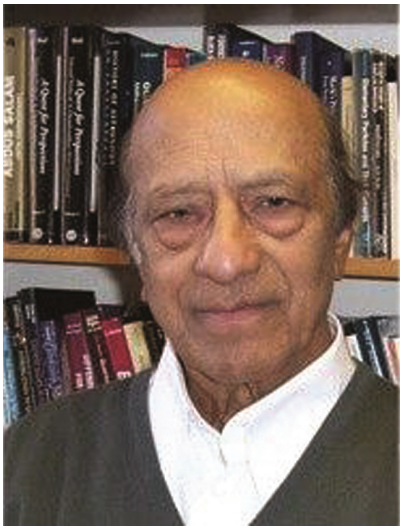
Kameshwar Wali (1927–2022)

Kameshwar Wali passed away on 14 January 2022 at the age of 94, leaving behind a wealth of work ranging from high-energy physics to the recent history of Indian science. As Wali believed in solid work rather than publicity, his name is not well known as it deserves to be. This note presents a partial view of this remarkable personality.

Kameshwar C. (Chanabasappa) Wali was born in Bijapur, Karnataka in 1927, one of seven children of a civil servant in the British Colonial system. He did his undergraduate studies at the Raja Lakhamagouda Science Institute in Belgaum affiliated to Bombay University. After acquiring B.Sc. degree with distinction in 1948, he was appointed there as lecturer in physics. In 1950, Wali continued graduate studies at Banaras Hindu University (BHU), Varanasi. He received his M.Sc. degree in physics in 1952 and was appointed lecturer in the Science College at BHU. While teaching there, he studied for M.A. (mathematics) and completed the course in 1954, winning the Chancellor Gold Medal, the highest honour of the University. To pursue his interest in theoretical physics, Wali proceeded to USA in 1955, for his Ph.D. at the University of Wisconsin, Madison. By then he was married to Kashi Kulkarni, a fellow student at BHU and had three daughters, who joined him in the United States, where he continued his long, distinguished career mainly at the Syracuse University (SU).

Right from his early postdoctoral work, Wali was an active researcher in high-energy particle physics. In a rapidly evolving field of research, he kept pace with the leading developments. Thus his work spans nearly six decades. He shared with his colleagues and students the excitement of research.

Not satisfied, however, with pursuing solely his own research, Wali became interested in the history of science and was invited to become a founding member of the Forum on the History of Physics within the American Physical Society (APS). Fascinated by the history of the white dwarf and the Chandrasekhar limit, he interacted with Nobel laureate Chandrasekhar to document details of the episode. This led to the publication of the seminal article (Chandrasekhar versus Eddington – an unanticipated confrontation), which he followed up by writing the book called *Chandra*, which is a biography of S. Chandrasekhar published in 1991 by the University of Chicago Press, USA. It has been warmly received by the international public and scientific readership and translated into French, Chinese and Kannada, and continues to be widely disseminated. These writings by Wali provided great visibility for Chandrasekhar, a highly private and modest man, who remains a giant in the world of science. Indeed, the Chandrasekhar story has inspired many Indian scientists to persevere in pursuit of a career in science, no matter the obstacles. Even two decades after the publication of the biography, Wali kept receiving letters of admiration and appreciation for this literary work.



Continuing in this vein, Wali was involved in bringing to light the contributions of two other great men of science of India of the 20th century: Satyendra Nath Bose and Jagdish Chandra Bose. History tells us that in 1924, S. N. Bose (1894–1974), then a relatively unknown young man, wrote to Albert Einstein forwarding his paper claiming that he had solved the Planck law for blackbody radiation without recourse to classical electrodynamics. Bose requested that if Einstein considered the work to be important, he could arrange its publication in *Zeitschrift fur Physik*, as Bose did not know German well. Einstein did think it was important, and he translated the paper himself and got it published. The interaction between Bose and Einstein led to the birth of the new quantum statistics which became known as Bose–Einstein statistics. In 2005, at the special session of the APS meeting celebrating the centenary of Einstein's miracle year 1905, Wali was invited to present the history of the Bose–Einstein statistics. That resulted in his article for *Physics Today* in 2006 titled 'The man behind the statistics' followed by an edited annotated volume of the papers of Bose published by World Scientific, Singapore in 2009. The book brings the much needed visibility to the full range of Bose's work, including his collaboration with Einstein. Although the Bose–Einstein statistics is well known, the man himself was little known outside India. In India, he was often confused with the famous 19th century scientist, J. C. Bose (1858–1937), whose legacy as the founder of experimental physics, a poet and philosopher, and popularizer of science is perhaps unparalleled. Wali documented his incredible achievements in an invited talk on the occasion of the celebration of his 150th birth anniversary in Kolkata.

Wali not only made significant theoretical contributions to the field of high-energy particle physics, but he was also interested in the applications of physics beyond the textbook. He was attracted by the question: what makes a good violin good? He wrote articles in physics journals and had studied the violins made in Cremona, Italy, the hometown of the famous violin maker Stradivari. Wali was a Member of APS, recipient of the India Chapter award of the Society as well as the SU Chancellor Citation for exceptional academic achievement.

Wali has made invaluable contributions to Indian science, both through his own research and through his pioneering archival work on the history of towering figures of India. He has also mentored many young Indian physicists who went to study in the US. Most importantly, his writings about Indian-born scientists have made the early contributions of India to science internationally known. An indication of how highly he was regarded in his field, SU has established an annual Kameshwar Wali Lecture in his honour. Distinguished academics have spoken in the Wali Lecture Series.

Wali has made threefold contributions: (i) research in high-energy particle physics; (ii) teaching and motivating many bright students to research in fundamental physics, and (iii) writing about the pioneering work of early Indian scientists.

Wali through his researches has made Indian academics (teachers and students) aware of the contributions of early Indian scientists, thereby improving the awareness of their heritage.

On a personal note, I had the pleasure and privilege of knowing Wali from my school days at BHU. He usually visited India every year and had interaction with Indian scientists. He was ever interested in knowing, learning something new and as such he was a student at heart. I had attended some of his general talks which were entertaining and informative. Perhaps I should also mention that he spent a few months every year in Paris, where he had an apartment. I had enjoyed chats with him in Paris too!

Back home, both Kashi and Kamesh were a hospitable couple, especially for visiting scientists. My wife and I enjoyed their warm hospitality at *Chez Wali* (Wali House), where we discussed Chandra, Bose, our BHU days and of course Indian cricket.

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