

As a physicist, Brockhouse always emphasized on the novelty of doing physics to understand nature. For him, these investigations were a pleasure, and were not for professional advancement. I remember a conversation between Lewis, then the Vice-President for R&D at Chalk River, with Brockhouse and me in 1957. Lewis suggested that in view of the important results that we had got on germanium, Brockhouse write a paper for the Second Conference on Peaceful Applications of Atomic Energy in Geneva in 1958. His consideration was that there were many papers from Brookhaven and Oak Ridge on the subject. Brockhouse very bluntly explained that it would be more appropriate for him to contribute and participate in conferences, which are focused on the physics, and so he would prefer to attend the APS meetings rather than the Geneva Conference, and he stuck to this stand. While there was tremendous opportunity for many studies in neutron crystallography, magnetic structures and nuclear physics, in the early fifties, he stuck to innovating techniques for neutron inelastic scattering, which made Chalk River the pioneering centre

in this field. In the late fifties and early sixties, Chalk River bloomed, with several scientists from the UK, Italy, Japan and other nations participating in the experiments, and in contributing to new theories about excitations in condensed matter physics. A number of international conferences followed, of which one was held in Bombay in 1964.

After having initiated notable research at Chalk River, Brockhouse took up a professorship in physics at McMaster University, which had a relatively small flux nuclear reactor. He trained a number of graduate students, the earlier ones now occupying important chairs in places like MIT, NIST, etc. In McMaster, he looked for, and succeeded in applying this technique for the first time in many other areas, especially in alloys and impurities in crystals. The correlations of Bert's studies with results using other techniques like infrared absorption and Raman scattering, led to developments connected with the behaviour of free electrons in metals. For example, he showed how the Fermi surface in metals gets reflected in the phonon dispersion relations, which are now known as Kohn anomalies.

In later years, he looked at physics in an overall perspective. Especially he wondered how innovations in physics could change energy production and consumption and conservation. As he got older, he concerned himself with philosophy. No doubt those who have interacted with him remember him not only for his physics and innovation, but also as a kind and generous human being, concerned with the welfare in every country. I remember the long discussions I have had with him on the development of India, especially in areas of science and economy. He was a true believer in democracy, and respected science from leftist countries even during the peak of the Cold War. He was excited when he would get letters from China at a time when contacts were difficult and abnormal.

In his passing away the scientific community has lost a very original thinker who at heart was international, and I have lost a mentor and a friend.

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## V. P. Agrawal

Ved Prakash Agrawal passed away on 10 August 2003 after brief illness at Ganga Ram Hospital, New Delhi.

Agrawal obtained M.Sc. in Zoology from Agra College, Agra and Ph.D. from University of London under the supervision of J. E. Smith. Agrawal's research career started in London and extended over five decades in the country. His work in zoology began in London with the study of digestive physiology of crustaceans. On return to India, he joined as Head, Department of Zoology at D.A.V. College, Muzaffarnagar. This college enjoyed a high reputation specially in science in those days and attracted teachers and students from far and wide. His commitment to the college (now affiliated to Ch Charan Singh University, Meerut) and leadership shaped a small place into an active centre of research in zoology. He supervised more than 50 doctoral projects and published more than 200 research papers in reputed journals on fish morphology, digestive physiology, biochemistry, histochemistry and toxicology. He was a Fellow of the Zoological Society, London, Linnean Society London, National Academy of Sciences and several other societies. The Zoologi-

cal Society of India honoured him with the Dr B. C. Guha Memorial gold medal.

In spite of administrative responsibilities when he became the Principal of DAV College, Agrawal continued his research work and supervised Ph.D.



students. He organized several symposia and seminars in the College not only in Zoology but in other subjects as well. The hallmark of his contribution in the development of Biological Sciences in the country was the creation of the Society of Biosciences in 1986 with its headquarters at Muzaffarnagar. S. Z. Qasim served as the President of this Society for more than a decade. Organization of

symposia/seminars under the auspices of this Society at several Institutes/Universities became one of his regular activities even after his retirement in 1986. He guided the publication of *Advances in Biosciences* as its Editor-in-Chief until his death.

Agrawal was offered higher positions by other Universities but he preferred to serve the D.A.V. College. He established fruitful collaboration with Delaware State College (now a University), Dover, USA. Norman H. Dill, Professor of Biological Sciences and Agriculture and Natural Resources at Delaware College visited his laboratories several times and promoted education and research at the DAV college.

I had the opportunity of knowing Agrawal and his family closely. I worked with him as his student and served under him as a faculty member for more than a decade. The love and affection that I and other students received from Mrs Agrawal and Dr Agrawal is cherishable.

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