

K. N. Sharma (1929–2015)

Kamal Nath Sharma, a renowned and internationally acclaimed physiologist of our country, passed away in Bengaluru on 21 June 2015. He was an icon in the field of Neurophysiology who has rendered more than five decades of yeoman service to Indian science and technology through his outstanding and path-breaking research and innovation.

Sharma was born in Mussorie in UP on 17 November 1929. After completing his MBBS and MD from University of Lucknow, he became a faculty in the same university followed by stints at the All India Institute of Medical Sciences in Delhi and later the University College of Medical Sciences in Delhi. In 1962 he joined the University of Illinois as Professor of Physiology and Psychology (1962–1964). Returning to India in 1964 he joined the St John's Medical College in Bangalore as professor (1964–1976) and Chairman of the Department of Physiology. In 1976 he rejoined the University College of Medical Sciences in Delhi and became its Principal in 1980, and as Director of Centre for Brain Research and Human Development at the University in 1988. When Sharma moved to Delhi where he built a great institution, viz. GTB Hospital, located on the campus of the University College of Medical Sciences at Sahadra he brought in new academic and research programmes. He was a Visiting Consultant to the US Army Food Science Laboratory on three different occasions in 1967, 1970 and 1972 and the Chief coordinator of the Indo-USSR Plan of Cooperation in Neurophysiology in 1986.

Sharma's original contributions have been in the field of neurophysiology, behaviour and nutrition and cover neural control systems in ingestive behaviour, ecology of hunger and other sensory systems, particularly nociception, olfaction and gustation. He undertook studies on the neurophysiology aspects of electroacupuncture and neuronal circuitry in cutaneous, muscular, joint and visceral pain. Nociception in stratified population samples of differing socio-economic and cultural background and ethnic groups was studied to see the relevance of

animal models with human situations. These studies opened a new chapter in our understanding of the physiology of visceral functions with far-reaching implications. By applying systems analysis, he showed that nutrition dynamics – state of hunger, malnutrition and surfeit conditions – modulate differentially the alimentary signalization possibly accounting for the variety of responses in different individuals. This has a direct relevance to taste preferences, food acceptance and rejection and dietetic habits.



He has published more than 180 original scientific papers in Indian and international journals and his work is extensively quoted in text books, monographs, etc. With Sushil Dua-Sharma (whom he later married) he published a research account of the stereotaxic atlas of the dog's brain. This was published by MIT Press. He also contributed a chapter on alimentary receptors in the *Handbook of Physiology* series published by the American Physiological Society. He also contributed two other monographs in the area of alimentary receptor mechanisms.

He received various honours and awards. He was elected a fellow of the Indian Academy of Sciences (1972), the Indian National Science Academy (1978) and the National Academy of Medical Sciences. He received the ICMR Award (1962), the Amrut Mody National Research Award (1975), the USSR Academy of Medical Science Anokhin Medal (1988) and the USSR Academy of

Science Sechenov Medal (1990). He served as President of the Biomedical Engineering Society of India (1976–1979) and the Indian Society for Pain Research and Therapy (1985–1990). He was India's representative at the International Union of Physiological Sciences and a member of the Scientific Advisory Committee of the Defence Institute of Physiology and Allied Sciences, Government of India, the Biomedical Engineering Division at IIT Delhi, the Council of Scientific & Industrial Research and the Indian Council of Medical Research.

He had the opportunity of getting medical education at AIIMS, the apex medical institution of the country. He had a lot of exposure and experience working with eminent physiologists and nutrition scientists like K. L. Jacobson and B. K. Anand. When he was chairman of the Basic Medical Sciences at St John's Medical College in Bengaluru, I had the opportunity of working with him in 1972–73 as his Ph D student. I found him to be an able administrator, excellent researcher, powerful orator and above all an excellent human being with all human values embodied in him. With Sushil Dua-Sharma he brought many new paradigms taking this College to new pinnacle of achievements. I also had the opportunity of co-authoring a book on *Brain and Psychophysiology of Stress* (published by ICMR). When I moved to DRDO in 1973 he continued to offer valuable guidance and support to me for many life sciences R&D programmes as DRDO Member of the Research Advisory Council.

Sharma had a personality, easy to admire but difficult to emulate. He will remain for a long time in the minds and hearts of many scientists, students and clinicians across the globe who were associated with him. He is survived by his wife Sushil Dua-Sharma.

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