

Archana Sharma (1932–2008)

Archana Sharma, a leading cytogeneticist and cytotoxicologist, and a founding editor of *The Nucleus* – an international journal of cytology and allied topics, died on 14 January 2008. She was active till the last moments of her life, sharing her thoughts on national issues with her husband, Arun Kumar Sharma. She exchanged editorial notes and other matters with me till the last week of December 2007 to finalize the manuscripts for the December issue of *The Nucleus* in its Golden Jubilee Year. This journal was started by the joint efforts of a group of scientists working at the Cytogenetics Laboratory, Department of Botany, University of Calcutta, associated with A. K. Sharma.

Archana Sharma was born on 16 February 1932 in Pune, into a family of academicians (her father and grandfather were professors) and had her early education in Rajasthan. After completing B Sc from Bikaner, she joined the Department of Botany, University of Calcutta, from where she obtained M Sc (1951), Ph D (1955) and D Sc (1960) degrees. She had a brilliant academic career throughout and was the second lady to have secured a D Sc degree from the University of Calcutta – the oldest University in India. Archana Sharma joined the faculty of the University of Calcutta in 1967 and became Professor of Genetics in 1972 in the Centre of Advanced Studies in Cell and Chromosome Research, and Head of the Department of Botany in 1980.

A passionate teacher and a dedicated researcher, Archana Sharma developed new staining and pre-treatment techniques for studying chromosome structure that are now used throughout the world. One of her landmark findings published in a series of high quality publications, including one in *Nature*, is the elucidation of a new concept of speciation and fixity of chromosome number in obligate vegetatively reproducing plants. Based on exhaustive analyses of somatic chromosome behaviour in a large number of monocot taxa, she deduced evidences for regular occurrence of inconsistency in chromosome comple-

ment and participation of genetically balanced, but chromosomally variant cells in new daughter shoots giving rise to new genotype/cytotype/cryptic species in vegetatively reproducing plants. Her other studies relate to induction of division in adult nuclei and cause of polyteny in differentiated tissues in plants; cytotoxic investigations on flowering plants; assessment of chromosomal and genetic polymorphism in normal human populations in eastern India and their comparison with pathological conditions; differentiated patterns in



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human fibroblasts in relation to polyteny as a factor in ageing; genetic polymorphisms in relation to environmental agents on living systems; clastogenic and mutagenic effects of various pesticides and metals on multiple test systems; assessment of genotoxic and clastogenic activity of environmental agents in subtoxic doses in exposed populations in relation to different modifying factors like diet, genetic predisposition, drugs, etc. and the use of dietary factors and plant products in modulating the cytotoxicity of known pollutants – metals and pesticides.

She has trained numerous researchers in cytogenetics, human genetics and environmental mutagenesis; supervised the Ph D work of 50 students and published over 300 research and review papers, written eight books and also edited 15 in-

ternational reference volumes/special journal issues. Her book *Chromosome Techniques – Theory and Practice* (Butterworths) is a classic in its field carrying three editions in 1965, 1972 and 1980.

Her scientific contributions were recognized by several learned and professional societies. She was conferred Fellowships of the Indian National Science Academy (INSA), the Indian Academy of Sciences and the National Academy of Sciences (India). The other honours bestowed on her include: President of the Indian Botanical Society (1989) and Biological Section of the National Academy of Sciences (India); General President, Indian Science Congress Association (1986–87); Member, International Academy of Science (Germany 1990), and Member INSA Council (1980–82); Shanti Swarup Bhatnagar Prize (1976) by CSIR; J. C. Bose Award (1974); UGC National Lecturer (1980); FICCI Award (1983); Birbal Sahni Medal (1984) by the Indian Botanical Society; Platinum Jubilee Lecture (1989) and Ashutosh Mukherji Medal (1999) by the Indian Science Congress Association, and Padma Bhushan (1984).

She was actively associated with several policy-making bodies, including the Science and Engineering Research Council (DST); Environmental Research Council (Ministry of Environment and Forests); Panel for Cooperation with UNESCO; HRD Ministry and various technical committees of UGC, DST, DBT and other bodies.

Archana Sharma had an exceptional command over the English language. A prolific writer and an excellent teacher and a cheerful person, she was loved and admired by her students. A religious and humane person, she followed strong scientific traditions and ethics in professional life. Archana Sharma leaves behind a large circle of students, colleagues and friends who would cherish her memory.

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