upon odour stimulation of the antennal sense organs. This important work was prescient of later molecular approaches that allowed mapping of odour coding in the antennal lobe.

Returning to TIFR in 1984, Veronica and her fledgling lab began to examine the neural basis of chemosensation using behavioural assays. Veronica realized that relying solely on this approach would result in interesting, speculative, but not a cellular understanding. This was a time when the typhoon of molecular approaches was sweeping biology followed by another, that of genetic and cellular methods, which allowed the rapid isolation of mutants, mapping of genes, the isolation of their DNA and the cellular localization of their products. As always happens when hit by the onslaught of transforming techniques, religious wars erupt. Ex-revolutionaries, formerly champions of new approaches in their own time, dismiss 'mere techniques' as no substitute for thinking. Opposing the old, the iconoclasts scream evangelically about how solutions to long-standing problems will miraculously appear by adopting the new methods. Silent in the din, Veronica realized that a thoughtful but more mechanistic approach to developmental neurobiology was now possible and took this direction without trumpeting it. On one front Veronica built a close scientific collaboration with Bill Chia at the Institute of Molecular and Cell Biology in Singapore. This made her an expert and productive molecular biologist in record time. On another front, in Bombay, she used newly emerging genetic and molecular approaches to chart out the development of the chemosensory organs of the fly. Her international reputation, as a developmental neurobiologist was soon secure. The next phase of her laboratory's research delved into the principles underlying the organization of the brain and its handling of olfactory information. Over the past decade, research from her group has also made substantive contributions to our understanding how regional specialization in the olfactory lobe of the brain takes place. Her range of approaches goes from anatomy, at cellular levels of resolution, all the way to behaviour in groups of animals. Her range of collaborators go from the novice who had never been in a laboratory to some of the leading maestros in the field.

Stitching together a lifetime of science, her final composition is seen when the composer is gone. Veronica's research assembles, note by note, page by page, into a simple but beautiful symphony in developmental neurobiology. Her scientific journey deserves far more than this brief and superficial account, but that can and will be documented in detail soon. However, the spirit of the principled, caring, fun-loving, elegant Goan from Nairobi, who imbibed the soul of TIFR in the days when it had it in plenty, amplified it and gave it back many times over, whenever it was in danger of losing it, is hard to capture. Except, perhaps, when the merry meet in the bars of Bombay, Bangalore, Singapore and Dublin and her friends across the world celebrate her rich life.

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A. B. Joshi (1916–2010)

Atmaram Bhairav Joshi, an eminent plant geneticist fondly addressed as ABJ, passed away on 3 July 2010. His contributions to the overall growth of Indian agriculture and to the science of genetics and plant breeding were recognized nationally and internationally. He was awarded the Padma Shri in 1976, Norman Borlaug Award in 1976 and B. D. Tilk Lecture Award of the Indian National Science Academy (INSA) in 1984. He was a Fellow of INSA, National Academy of Agricultural Sciences, Indian Academy of Sciences, Maharashtra Academy of Science, Indian Society of Genetics, and Plant Breeding and Indian Society of Plant Genetic Resources. He has been recognized as India's foremost agricultural scientist, educationist and administrator.

Joshi was born on 17 November 1916 in Jabalpur, Madhya Pradesh, to Bhavanibai and Bhairav Balwant Joshi. He undertook primary education at Raipur and completed his B Sc and M Sc degrees in Botany from Nagpur University in 1937 and 1945 respectively. He obtained Associateship in Agricultural Botany at Indian Agricultural Research Institute (IARI) in 1939. This foundation motivated him to pursue his doctoral degree at the University of Cambridge, London under the world-renowned geneticist H. W. Howard (1947–1950). He returned to his alma matter in 1950 as an Assistant Scientist in the Division of Botany (now Division of Genetics) and became the first Dean of its Post-Graduate School in 1958 and the first Project Coordinator of the All India Co-ordinated Wheat Improvement Project (1960–1966). Between 1966 and 1972 he served as the Deputy Director General (Crop Science) in the Indian Council of Agricultural Research (ICAR).

After a brief stint in Egypt as the Project Manager, FAO/UNDP Project on Improvement of Field Crop Productivity (1971–72) he assumed the charge of Director, IARI (1971–1977). On his superannuation from the service of ICAR, he served as the Vice-Chancellor of Mahatma Phule Krishi Vidyapeeth,

Rahuri (1977–1980) and as the President of Maharashtra Association for Cultivation of Science (now known by Agarkar Research Institute), Pune. In between, he held many a prestigious position, which include being a member of the Education Commission under the chairmanship of D. S. Kothari, which conceived the concept of State Agricultural Universities for strengthening agricultural research and education at regional level; a member of the International Team for Improvement of Field Crops Productivity in Egypt (1971–72); a member of the Board of Directors, International Potato Research Institute, Lima (Peru); a member of the Scientific Advisory Council to the Prime Minister and many more.

His contributions to research, education and other nation building programmes are several and varied. He employed genetic, cytogenetic and biometric tools for improvement of crop species placing emphasis on enhancement of yield, resistance against biotic/abiotic stresses and enrichment of quality. Among half a dozen crops he worked on, cotton was always his passion. He was among the first few to attempt and succeed in effecting interspecific crosses involving diploid *Gossipium arboreum* and tetraploid *G. hirsutum*. Delinking of negatively associated desirable (high yield) and undesirable (poor fibre quality) traits had been a breeding challenge in cotton. Joshi and his students could address this problem by indigenous breeding/selection strategies. Cotton varieties known as JK series (J stands for Joshi and K for Kadappa, student of Joshi and well-known cotton breeder in Karnataka) combining high ginning outturn and high fibre strength and fineness in high-yield backgrounds are the outcome of this effort. It was his belief that yield stagnation at low levels for long in cotton could be breached by exploitation of hybrid vigour. In the absence of CMS system, he was the first to demonstrate the possibility of producing hybrid seed manually.

Among his other research accomplishments of basic and applied significance, tracing the origin and evolution of sesamum and finding solution to the killer Yellow Vein Mosaic viral disease of okra (Bhindi) are worth mentioning. Yet another research accomplishment of theoretical and application value, with which Joshi was deeply associated was the man-made fodder grass Pusa Giant Napier.

When biometric tools were found in the 70s and 80s to help unravel the quantitative genetic architecture of complex traits like yield, Joshi along with his students came up with findings of value for directed improvement of several cereals for complex traits like yield. He has published over 300 research publications in reputed national and international journals besides the monographs on cotton and sesamum and guided more than 50 Ph D students at IARI.

Known for his method and manner of making students interested in the subject of genetics in the 50s and 60s, when biology was botany and zoology, Joshi was the one behind the development and organization of the country's postgraduate programme in agriculture in general and genetics and plant breeding, in particular.

As the first Project Coordinator of Wheat Improvement and later as the Deputy Director General (Crop Science) in the ICAR, Joshi shaped and strengthened the coordinated testing programme as the integral part of crop improvement research. It was his deep involvement and close overseeing of development, testing and release of varieties led in a short span of time a wide choice of varieties/hybrids for diverse agroecologies, which heralded the country's Green Revolution.

The following observation of him on the relevance of education, especially in agriculture, is worth introspecting: 'education whether general or specialized has long succeeded in providing elites. What we require, especially in the field of agriculture are non-elite graduates with motivation for self employment in agriculture with competence to identify and resolve practical problems. With the gospel of dirty hands still being preached by our educationists in general, the practice of equating university education with white collar job continues to still persist. One can understand this practice persisting in social sciences and arts, there is no justification why we should not be able to shake off this pernicious practice in technical and vocational education'.

Joshi is survived by his wife Vimla Joshi and son Jayant. His illustrious life and work of six decades would remain and inspire us.

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