



88

Exploring nature's secrets

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As one puts pen to paper to write about oneself, events and impressions from childhood onwards well up. After my birth in Karachi and our wanderings through many countries following my father's shipping ventures, my parents – both staunch Theosophists – sent us off to the Besant Memorial School of Drs. George and Rukmini Arundale. Rukmini had brought about a renaissance of ancient Indian art and music at Kalakshetra. During my early teens, I read a fascinating book by Paul de Kruif “The Microbe Hunters”, which left a lasting impression on me. Along with formal education, I also had the advantage of a cultural heritage. I went to Bombay and obtained a degree in microbiology from St. Xavier's College. My first look through an optical microscope at a smear of a mixed gram-positive and negative culture of micro-organisms gave me an emotional thrill I can never forget.

The day after I graduated, I found myself, without much reflection, outside the office of Dr. V.R. Khanolkar, the chief of laboratories, and chief pathologist at the Tata Memorial Hospital for Cancer and Allied Diseases. No phone calls, no appointments – I just stood there waiting to see him. After a two-hour wait, he

called me in and we had a long chat. I did not realize that this was his way of interviewing the young. At last he asked me whether I could manage all that he had talked about. "Of course!" I said with the arrogance of the young. So began my life in science!

Dr. Khanolkar was a Renaissance figure – a man of many parts. A physician with an intuitive scientific bent, a lover of art, a linguist, and a scholar in the literature of many languages. I acquired a broad-based scientific and artistic vision from him.

In 1948, the Ministry of Health, Government of India, decided to make the department of pathology at Tata Memorial into a full-fledged Cancer Research Institute. From a senior doctoral student, I became a founder-member of the new research centre. Three of us were sent abroad to bring back the newly established techniques useful in Biomedical research – genetics, tissue culture and electron microscopy. Along with the methodology of science, I imbibed the scientific culture so vital to modern biomedical research I worked and learnt in the laboratories of stalwarts of science – Hans Selye, Albert Szent-Györgyi, Linus Pauling, Alex Haddow, Charles Oberling, and William Astbury.

I came back to establish the first biomedical laboratory in ultrastructural cytology and diagnostic molecular pathology. Students flocked to the centre, which became globally famous for its work. In my laboratory, we studied the transformation from normal to abnormal cell membranes and cancer, junctional complexes and the secondary spread of cancer, viruses and haematological, breast and nasal cancer. Our main stress was on oral precancer – leukoplakia and oral submucous fibrosis – and frankly oral cancer rampant in our motherland due to the habit of lime-based paan and tobacco chewing. Students who were trained in the laboratory got more than formal scientific training. When Bombay University started undergraduate and postgraduate programs in Life Sciences, it was a real boon!

I was always aware of the teeming suffering humanity in the corridors of the hospital. Besides electron histochemistry, immune electron microscopy, electron autoradiography, cryoelectron microscopy, we were aware of the human aspect of our work. Life science and the terminality of cancer patients led me to start the

Shanti Avedna Ashram (Sadan) – India's first hospice, of which I am the founder trustee-counselor.

I have already explained how romance and reality left an initial impression on my young mind and took me along this path. As to mentors, my first mentor was my father. A scholar by nature, he started life as a professor of English at St. Xavier's College, but shifted to shipping. He was a voracious reader, and a sanskrit scholar. He passed these traits on to his children. He was also an author. My mentors in my scientific life were first, Dr. Khanolkar and, second, who mattered very deeply to me, my husband Dr. M.V. Sirsat. Although there was a large age-difference between us, he was my friend, philosopher and guide. He was an internationally known onco-pathologist. He was deeply versed in the transition from normal to diseased, especially in neoplasia and malignancy. He was a very popular teacher of young aspiring pathologists. Whenever I had a problem with the complexities of this dreadful disease, he solved it with patience and affection. It was a wonderful partnership. He was a deeply supportive guide of my research and was very proud of my professional achievements.

Did I ever feel I would like a change of career? No, never! I could not and even now cannot think of change in profession. It was not a job, it was a life of *Sadhana* and *Tapasya* in the laboratories of Tata Memorial Centre, and indeed the world. It has been a "love-affair" with the work I did and an active emotional life with the knowledge I gained, which I passed on to hundreds of students all over India and South east Asia.

Although retired, I still work as chairperson of the Tata Memorial Centre's medical ethics committee. I worked for 17 years with the Bharatiya Vidya Bhavan Ayurvedic Centre on 'ancient insights and modern discoveries. My knowledge of Sanskrit proved invaluable. I worked on a project on Cancer Nosology of the Vriddhatrayi – Charaka, Sushruta and Vagbhata. It is mind-blowing how fully these ancient scholars' descriptions tallied with modern ones. They had vast knowledge of different tissue tumours and their biological behaviour, benign vs. malignant, bone and haematologic cancers. Their only tools were close observation of the human body, the deceased individual and their intuition.

A few final words to young aspirants: Do you want the honoured label of a scientist? The tenets of life are strict! Be honest to your work and true to yourself. Be disciplined. Never disparage the work of your fellow scientists. Be observant – never distort your log or show records to fit a preconceived theory. Above all, life is to learn – so learn, learn and learn! You are on the greatest adventure – exploration of nature's secrets!