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Looking for the unknown in the known

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My interest in science was kindled by my father, a remarkable teacher. Although by profession he was not a scientist, he built me a small laboratory complete with a light microscope, Bunsen burner, test tubes and some chemicals. My father believed in holistic education and taught me carpentry, photography, gardening and the reading of classic literature. I spent much enjoyable time with him doing various projects like looking at pond-water droplets under the microscope or putting together a circuit for a small radio. As a result, my interest in scientific enquiry got deeply rooted while I was very young. In contrast, my childhood acquaintances were largely from the fine arts faculty because both my parents were well-known artists of the Bengal school and conversations at home generally revolved around the art scenario the world over, occasionally sprinkled with discussions on a wide variety of culinary delights.

As I grew older, my interests expanded to field studies and I spent considerable amounts of time running after insects and collecting small animals. I spent my holidays in school collecting caterpillars to watch them metamorphose into butterflies and I kept detailed photographic records of the events, using a Leica

camera fitted with a bellow for close-ups. My mother was never interested in my odd desire to keep a variety of snakes and turtles at home, but was tolerant of my inordinate love for animals and appreciated the creative part of my endeavours. I was encouraged in my pursuits by my biology teacher at school, who took a special interest in my collections of butterflies, caterpillars and beetles. Childhood events being most essential for scientific and philosophical development, I feel that the early influences that shaped my future interests were my family and committed school teachers.

After finishing school, I continued to be obsessed with nature and thought that being an entomologist would be most wonderful, as I could be in the field as well as in the laboratory. While in college, I developed other interests. I became vice-captain of the Bengal women's cricket team at a time when women's cricket was at a nascent stage and women were just storming this male bastion. Cricket brought a completely different flavour into my life because team activity was very enjoyable. Our success in winning the National Championship for three consecutive years was certainly delectable! My parents were supportive of my interest in sports and gave me the free choice to do whatever I most preferred.

The interest in science instilled in me during my childhood propelled me more towards academics than sports. Nevertheless, I maintained my interest in sports by doing commentaries on men's cricket during the winter on All India Radio, although I could not participate in zonal tournaments due to academic commitments. At this time, I was introduced to my first experiences in a real laboratory set-up, and during post-graduation I chose endocrinology as a subject for specialization because the course interested me. I completed my university sojourn, looking forward to getting involved in full-time research, and thus my formal involvement in a life in science was initiated. In retrospect, I feel that the constant support my parents gave and the atmosphere of creativity at home influenced me to choose a career that ensured intellectual pleasure. In later years, whenever my work has received national recognition, I have regretted that my parents were not there to share the events.

After formal training in endocrinology, I was particularly

interested in the events of reproduction because that provided an opportunity to understand the fascinating phenomenon of how life begins. The major obstacle at this period was to find a suitable laboratory to pursue my interests. Fortunately, I got a placement at a reputed research institute now named the Indian Institute of Chemical Biology (IICB), in a laboratory that offered the possibility of doing reproductive biology research. After completion of my doctoral studies, my interests took me to Kansas University Medical Center in the United States with a Ford Foundation Fellowship, where I was able to pursue my interests in female reproductive physiology. Even though the empty streets of a midwest American town were disconcerting after the vibrant city of Kolkata, the very active laboratory soon made me feel comfortable. I worked on the mechanisms related to ovarian steroidogenesis in the years I spent in this laboratory, towards the end of which I was interested in studying similar phenomena in the counterpart of the ovary in males, the testis. Exploring the research interests of various laboratories, I decided to join The Population Council at New York City which was located on the campus of the Rockefeller University that in turn was surrounded by two great institutions, the Sloan Kettering Memorial Hospital and the Cornell Medical College.

I spent two very productive years of my life at this laboratory, working on the involvement of opiates in testicular steroidogenesis and functioning, following which I joined the National Institute of Immunology in New Delhi, then an upcoming institution. It was difficult to decide whether or not to join a new institution because working modalities in most new institutions face teething problems, and I did face such problems. However, I now look back with great fondness at that period of instability, surprises and continuous pressure. I have realized that there are very many experiences in life which appear different when you look back at them over the distance of time rather than when you are actually undergoing them.

At the National Institute of Immunology, I started a laboratory with a group of people interested in exploring the possibilities of developing a vaccine against male fertility, and after about a

decade or so, we extended our interests into probing the modalities of male gamete survival, information on which had the possibilities to contribute to the success of a possible vaccine. While my laboratory still continues to address questions pertaining to male gamete survival, my evolving interests have impelled me to start investigations on issues regarding the survival of a host and a parasite when they interact. I feel that my ability to carry out research on problems that are related in essence but different in their identities, has contributed greatly to my evolution as a scientist, kept my interests alive and created a lot of excitement in laboratory life.

The writings of Rabindranath Tagore, whose songs and poetry I grew up with, have been the primary inspiration in my life. He said, 'Look for the unknown within the realm of the known and you will realize many mysteries of life', which essentially defines work in science. When I look back on the journey from my doctoral days, I feel fortunate to be associated with scientists of repute, who were my mentors and provided considerable encouragement for my work. I also realize that my colleagues from far and near have made life interesting along the way. I feel particularly fortunate to be in a profession which has provided so much excitement and intellectual satisfaction, and if I had to start all over again, I would still like to be a scientist. To conclude, I feel that I should express my feeling on survival as a woman scientist in a largely male-dominated community. Since both my parents were non-traditional in their approach towards my growing up, it never came to my mind that I could not do something because I was a woman. It is possible that I was more privileged than many women in a similar situation. May be there were times when obstacles cropped up, but I never felt them much because I was moving forward. As a teacher, as a scientist, it is my desire to see more talented young women decide to take on science as a career in these changing times. I am sure they will not be disappointed.