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An Oceanographer's Life

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When I was 10 years old my mother taught me how to cook rice, dal and potato sabji. I was made to practice the process until I was able to achieve somewhat edible results every time. What my mother aimed for was consistent results, not merely edible results – because consistency meant “paying attention” and “knowing what you were doing” and “measuring things correctly” and so on- but my hands never could keep pace with my mind and she was forced to accept “atleast she will never go hungry” kind of edibility. I have often thought that this was the foundation for my career in science, because although I was hopeless at practical chemistry and biology, I could sort of see the pattern of things in my mind. I suppose this made it inevitable that I would largely depend on instrumentation for quality data, whether it was nitrate levels in the open ocean or rates of photosynthesis in mangrove swamps.

Perhaps the most important factor which influenced my choice of career was my father. He had a keen interest in how things worked and why, and dinner table conversations varied from steam engines to stars. Being used to hiking and trekking – another of my father's hobbies – I wanted a career which allowed

freedom of movement, not only of thought. At about this time I was completing my BSc at the University of Pune, and a friend of my father's gave me a book by Sir Alistair Hardy called "The Open Sea". The book described the life of plankton as observed by this Cambridge biologist and I was hooked for life!

Money was always tight and my mother had always told me that higher education abroad was simply not affordable so it was a joyous occasion when I got a US Government scholarship to the University of Hawaii. A thesis required 24 credits as part of the Master of Science programme, so when it came time to choose a subject I was professionally interested in the plankton to which I had been first exposed through "The Open Sea". The more I learnt of biology in the oceans the more interested I became in photosynthesis in plankton communities. Plankton are a highly diverse community of organisms some of which photosynthesize, still others graze on them, secondary grazers feed on the grazers and the bacteria recycle the nutrients back to the photosynthesizers. And all of this happens in water masses, some as large as continents, which are defined by the physics of density, shear, bottom topography and wind, and the effect of the rotation of the earth, moon and sun on that very fluid substance water.

My MS thesis was on the effect of tropical light intensities on photosynthesis by natural plankton communities and the nature and amount of reduced carbon flow from phyto-plankton to bacteria. It proved difficult to calculate rates of transfer directly in the sea and I and my guide, Dr M S Doty, veered round to the conclusion that I needed a single alga- single bacterium model before an entire community could be studied. Fortunately for me Professor G E Fogg FRS of Westfield College London University (UK) agreed with me. With an MS in my pocket, and after a two and a half hour grilling at Westfield College, when Professor Fogg offered to show me around his lab, I knew I was in! Later I got an SERC grant and a stipend for these studies so I was able to eat as well as work.

During both MS and PhD. a constantly recurring question was: What next? As I neared the end of my experimental work for the PhD. I had my sights on a couple of labs where I

would have loved to work, but in the meantime I met Professor N K Panikkar, a senior scientist with CSIR, who was the founder-Director of the National Institute of Oceanography, (NIO) Goa. Our wide-ranging discussions with him ended up with the question of job availability in India. One of us asked rather bitterly, "Does India really need us, Professor?" Remember this was 1971/72 and to my generation it seemed as though India really did not care what became of her youth. Also jobs were scarce. Dr Panikkar looked very grave and said "All I know is that there is a lot of work waiting for the person who has the guts to take it up. Of course you will get far better salaries just about any where else". Perhaps it was this challenge, or perhaps it was the thought of my father's disappointment if I chose to settle abroad, or perhaps I was tired of "explaining" India to people who had never left their own front doors. For whatever reason, I dropped all my plans for tenure and post docs and everything else and applied for a Pool Officership in 1973 and returned to India. I have never regretted it.

At NIO between 1973-76 we were bound by the exigencies of our situation to coastal studies and we must have covered the whole of the west coast of India from Veeraval to Kanyakumari and the Gulf of Mannar by vehicle and country fishing craft. We spent nights sleeping on the beaches because accommodation was not available and the team, whether scientist, driver or student worked together to complete the planned objectives. I don't remember worrying about food or water or privacy, we ate whatever the local teashop supplied us, mostly bhajjias and jaggery tea. Very often I was the only woman on the team. Local villagers, especially the women, sent their husbands or brothers to find out whether there was anything I wanted, including hot water for bath in their own huts! This special treatment resulted in much leg pulling by my colleagues about "women" scientists, but secretly they were rather relieved that they never had to worry about me. Much of my spare time was spent in telling the women in my bad Hindi just what we were trying to investigate and I learnt over time to explain our work in terms to which they could relate: fish catch. It also helped me to focus on the importance of the work that we were doing. Those were great days. The Institute was small, friendly

and every one knew their own responsibilities and those of the team.

The Antarctic was special. It is every oceanographers dream to visit the Antarctic and when my chance came I grabbed it with both hands. The NIO had a 10-year programme in the Antarctic Ocean for studies on food chain physics, chemistry and biology.

By 1990 I had moved out of NIO, after 17 years there, to the National Chemical Laboratory in Pune and spent the next 15 years studying enzymology of salt-tolerant and salt-loving microbes involved in the food chain. Although the work I did at NCL was completely different in its nature to what I did at NIO I learnt almost as much in Pune as I did while still at University, and during my early years in Goa. It is now difficult to decide which "avtar" I enjoyed more.!