

Dedication

Dr. T.C. Goel *A People's Scientist*



It gives me great pleasure to dedicate Snowbreeze to the late Dr. T.C. Goel, Director of Birla Institute of Technology and Science (BITS) Pilani, Goa campus, till his death in July 2008. But for him by now Snowbreeze would have become extinct as an inventor's pipe dream. The several hundred 'orders' that have poured in for Snowbreeze units from all over the country and the several hundred thousand 'hits' on the Snowbreeze website, www.greenairconditioner.org, from all over the world since the publication of news about it in the last week of February and first week of March in newspapers and on Google and Yahoo, are a tribute to Dr. Goel's visionary imagination, a faculty not typical to his profession in India.

Nearly a year after the discovery that one could save oneself from dying of heat exhaustion during a long power breakdown by this crude home made device, I sent letters to a large number of eminent Indian scientists and environmentalists, along with a copy of my book "Make your own Air Conditioner-cum-Heater" (see full text on my other website www.gandhionline.org), describing my experience and suggesting that a properly developed Snowbreeze would bring relief to millions who could not afford an AC. It would also cut down the running cost of air conditioning to about ten percent of what it is today. Dr. Goel was the only one who responded to my plea. He not only acknowledged my letter but also phoned me from Goa and said, "you have invented the people's air-conditioner of tomorrow. We must together do more research on this." I couldn't believe my ears. "But I am not a scientist", I protested. "So what!" he said. "Inventions are not produced by science but by necessity. Science only gives them a practical form without which they cannot function. Driven to the wall by dire need non-scientists have often made great new discoveries."

Dr. Goel lost no time in forming a three-man research team with himself as one of its members and Professor Dhananjay Kulkarni, a colleague, as the coordinator. Dr. Kulkarni worked tirelessly for

months to formulate a project proposal by studying a working unit of Snowbreeze that I shipped from Delhi to Goa, and worked out a few mathematical modeling formats for it. The proposal was submitted to the Union Governments' Department of Science and Technology for a grant. It sailed through smoothly through a number of expert committees of the Ministry. Then disaster struck. A few months before its presentation to a selection panel Dr. Goel died of cancer and, as was to be expected, deprived of the moving spirit behind it the proposal fell through. But the ground prepared by Dr. Goel was enough excuse for me to cut across the maze of technocracy of the Union Ministry of Science and Technology and appeal directly to its Minister and Secretary as well as to the Director General of the Council of Scientific and Industrial Research (CSIR) for re-opening the case in view of its great importance to the whole country. All three of them saw the merit of my plea and suggested that I seek the assistance of the Technopreneur Programme (TePP), a marvelous facility promoted by the Ministry for encouraging and bringing into the market new inventions. Without this help I would have floundered long ago and there would have been no Snowbreeze-4 and its startlingly cheap and effective 'bucket' model today.

It is to be noted that at the time when Dr. Goel offered to take on the challenging task of producing a common man's air conditioner based on ice and chilled water he was in the thick of a host of new projects in the fast expanding Goa campus of BITS, Pilani, as its founding Director, negotiating a few high tech research projects with foreign universities and, at the same time, battling with a fatal disease though he did not know the end was so near. Only the desire to do some thing to meet the dire needs of the poor classes prompted him to shoulder this extra burden so cheerfully.

If proof was needed of Dr. Goel's far sight in choosing Snowbreeze for the service of the people of India it is there on this website. No sooner had news about the invention of Snowbreeze-4 appeared in a few newspapers all over the country, specially Mail Today which also gave my web address in its report on March 5, there were 192000 'hits' on my website on a single day followed by several thousand of them every day from all over the world ever since. Nearly five hundred email 'orders' poured in from every corner of India, half of them on the first two days for non-existent Snowbreeze-4 units. My website server had to increase his bandwidth ten times to accommodate so many hits.

I have reproduced the contents of all letters received so far with only the initials of the writers (to protect their identities) as I treat them like the result of a national survey of what the public of this country expects from our scientific community. Besides missions to the Moon and enhancing India's destructive arsenal through ballistic missiles and nuclear bombs, which have won our scientists accolades throughout the world, the people of India also expect them to occasionally come down from their lofty pedestal of hi-tech research to finding simple solutions for the people's mundane every day needs. To me these letters represent the pulse of middle class Indian intelligentsia. Snowbreeze has very little science in it. Yet it has emerged as a potential life saver for millions of heat stricken people. There is no knowing of how far it could go in the service of humanity if only the concerned section of the science community would

contribute a fraction of its brains to it. In its present form already it is in a position to save you from heat exhaustion at a meagre capital cost of Rs.3500 and running expense of two kilograms of ice and a 50 watt fan per hour.

But will it or can it do so unless people who can deliver the goods take over the task in earnest? Or, will Snowbreeze fade out like a falling star? That is the million dollar question.

Clearly, India needs more persons in authority like Dr. T.C. Goel with an instinctive empathy for the common man, not only in science but in every walk of life.

Professor R.N. Deb

‘Small Is Beautiful’



If Dr. T.C. Goel gave life to Snowbreeze air-conditioner, the late Mr. R.N. Deb ranks foremost amongst the personalities who moulded me into the kind of person who would instinctively value small things in life such as Snowbreeze. He belonged to the select tribe of intellectuals who would habitually prefer a wayside tea stall to shiny bar or hotel for tea so that they could huddle up with a bidi smoking group of labourers for a chat. For him the best use of his leisure hours was to squat on the floor in a dhoti to paint large canvases, set on a low wooden stand before him, with weird scenes of man in Nature. Though not one of the countless thousands who constituted the austere Gandhians of those days, Professor Deb belonged to the by now equally extinct species of Indian intelligentsia that preferred the natural to the artificial in all intimate needs of life, such as air, water, food, shelter and entertainment. An artist of repute, inspired by the Santinikentan school, he abhorred glamour as it always obscured the truth. His short stories about the lives of common people, including house maids, were a monthly feature in the Sunday magazine of the Amrita Bazar Patrika.

I happened to catch Mr. Deb's eye early during my four years (1947-51) in the Allahabad University. Besides being a lecturer in English he was also a resident tutor in Holland Hall where I lived. Throughout my stay he was my friend, philosopher and guide and also companion during vacations. He and his elder brother Professor S.C. Deb, then head of the English Department, taught me the value of little things in life. Even on historic occasions like the four-day Wordsworth Centenary Celebration in

December 1950, co-sponsored by the British Council, the senior Deb, who was its chief host, would pay more attention to small things, like a monograph for the souvenir, the design of the delegates' badges, and arrangement of rows of chairs and tables in the hall along with pictures and sketches of the poet and his Lake District, than to major organizational matters which he would leave entirely to underlings like me. It was through Mr. R.N. Deb's lectures and personal tutelage and long journeys with him and his family to till then un-spoilt beauty spots like Kaushni and Chitrakoot that I learnt to appreciate the inner beauty of Nature and its life support system which defies and dwarfs all the grandiose artifices of man. This kind of training of the mind made it easy for me to understand the meaning of the doctrines later propounded in the Blueprint for Survival by the Club of Rome and by E.F. Schumacher in his cult book 'Small is Beautiful' (of which the current "Green" movement is a legitimate successor). For me it gave a new meaning to Gandhi and his 'Charkha'. Snowbreeze is my Charkha.

(Mr. R.N. Deb's prototype is one of the main characters of my novel "Manikpur Junction" about India in the Gandhian era, described on my other website www.gandhionline.org.)