

Lindau Nobel Meeting – A unique gathering

'A small town in Germany', this is what thriller novelist John le Carre had called Bonn, the then capital of West Germany. What he tried to demonstrate through his bestseller was that Bonn might be small in size but was big as a meeting ground for those engaged in political intrigue and international espionage.

The same description of 'A small town in Germany' would be apt for Lindau, which is much smaller than Bonn, located on the coast of scenic Lake Constanz. But it too stands big as the place for some close encounters with the aristocrats of the world of science. Mainland town of Lindau is connected through a single bridge with an enchanting tiny island in the Lake. On this 'Insel Lindau' gathers, in the last week of June every year, a galaxy of Nobel Laureates and a large number of young nascent scientists from all over the world.

This year too the unique gathering, known simply as the Lindau Meeting of Nobel Laureates, took place. But a new dimension was added, which is perhaps appropriate as this year marks the centenary of the *annus mirabilis* of Albert Einstein who added several dimensions to our knowledge of the way this universe is constructed and the manner in which it functions. For the second time in its 55-year history, a multidisciplinary meeting was held with some 48 laureates in Physics, Chemistry and Physiology or Medicine exchanging thoughts and ideas among themselves as also intermingling, formally as well as informally, with 740 young scientists from 53 countries as against those from a mere 11 countries in 2000. Lindau thus became a place *sans pareille* for nurturing evanescent scientific talent. It is not surprising that the young strugglers find it a lifetime opportunity in being selected for these meetings with the greats of world science but the laureates too find these meetings 'most refreshing and stimulating. They get us out of the rut we sometimes drift into' as Werner Arber (Physiology or Medicine, 1978) who was awarded the coveted honour for his discovery of restriction enzymes commented during a personal chat (Box 1).

The expectations that these budding scientists had harboured were more than fulfilled. Every morning the tone was set

by a masterly discourse by one of the most recent laureates. The honour went to Aaron Ciechanover (Chemistry, 2004) on the first business day of the meeting. He recounted his discovery of ubiquitins that are responsible for degradation of proteins inside the cells that help smooth running of many processes. He aptly titled his talk as 'Why the proteins have to die so that we can live'. Starting from the first glimpse of the path that led him

eventually to the final neat solution to the puzzle, he described in graphic detail all the alluring diversions, deviations, twists, turns, dead-ends, even the potholes on the way until all the obstacles fell by the wayside and the cherished pot of gold beckoned him. He also told very candidly how his initial observations were looked at with considerable skepticism by seniors in the field and how the 'new boy on the block' had to make a great effort to make

Box 1. The Lindau Meeting: Some background.

It all started in 1951 when two young physicians, Gunther Parade and Franz Karl Hein, bored with treating the usual coughs and colds and cuts and bruises, thought of enriching their professional life. They decided to learn, first-hand, from those engaged in pushing the frontiers of knowledge in their chosen fields. It was also the time when Germany had fallen into intellectual isolation in the immediate post-war years. The young doctors, therefore, thought of inviting Nobel laureates from other parts of the world to engage into discussion with German scientists. To fructify their concept they approached Count Lennart Bernadotte living on the nearby island of Mainau. It was not surprising that he embraced the idea most enthusiastically not the least because he happened to be the great grandson of King Oscar II of Sweden who had handed over the first ever Nobel Medals. He, nonetheless, suggested that tomorrow's scientists should be included in the gathering if only to bring Germany back to the position it held before the war. Initially only young science students from Germany got the opportunity to talk to the Nobel laureates. But the Count soon thought of expanding the circle and those from other European countries as well as USA started attending these meetings. In the year 2000 when the Golden Jubilee of this fête was celebrated a foundation was established to organize the meetings in a manner that would be commensurate with the changing world scenario. Wolfgang Schurer, an economist who was with the World Bank at the time, was invited to be its Chairman. 'I was hesitant initially', said Schurer, 'but Prabhakar Narvekar, who is the Deputy Managing Director of the world body encouraged me and also provided me with useful contacts and suggestions. He is my mentor'. In acknowledgement of the fact that borders between different scientific disciplines are becoming increasingly porous Schurer thought of convening a multidisciplinary meeting instead of restricting them to just one field as earlier. In addition, recognizing that scientific talent is no longer the monopoly of western countries he started promoting the concept in other countries, notably China and India. The Foundation started having a dialogue with national academies for professional support and governments for financial backing. Both efforts have borne fruit and 740 young scientists from 53 countries participated this year as against those from a mere 11 countries in 2000.

Not only the Foundation but also the laureates are upbeat about China and India. David Gross (Physics, 2004) openly declared that these two countries are not only catching up in economy but also in science. Accepting this new reality many of the laureates revealed during the course of their lectures their professional links with universities and national research institutes in our country.

them accept his viewpoint. That was particularly reassuring to all those who are still trying to find their feet and in doing so have similar experiences all the time.

The cue was picked up by all the subsequent speakers and the eager listeners got an object lesson on the process of scientific discovery. They were given additional tips from time to time. David Gross (Physics, 2004) who, concerned with the future of physics came up with a long list of unresolved questions of seminal importance that was a wonderful gift to every physicist looking for a kick-start to his/her career. He also advised them to 'read original papers and not just textbooks'. Those attending the meeting were even more fortunate because they got the original recipes from the masters themselves. Charles Towns (Physics, 1964), all of 90 years, who along with his brother-in-law Arthur Schawlow built the first working laser told of the importance of socializing with those from other fields. That, he said, gives one a totally different perspective and often would help see a possible solution to a vexing problem. Klaus von Kitzing (Physics, 1985) went one better and admonished, 'Do not take anyone's word for granted, not even that of a laureate; Question it, experiment, obtain unequivocal evidence, analyse it objectively and embrace the distilled truth that emerges'.

Frank Wilczek (Physics, 2004) started on a backward journey through time to the very moment the universe came into being. He wondered how a 'nothing' with no mass, no volume could be transformed into a host of particles, each one with a finite mass, that went on to build this complex universe. It was then, he said, he remembered Einstein's 'second' law; $m = E/c^2 = hf/c^2$. Not only did this relationship show him the way out of the maze that he had gotten into but it also made it clear that there is a characteristic frequency equivalent of every mass. He went

on to demonstrate by enchanting visual analogies these specific frequencies. Einstein's comment on seeing the Bohr atomic model that it reminded him of 'the music of the spheres' may have been more prescient than previously thought. He was quizzed later whether these frequencies, or notes as he referred to them, have been set into a musical composition in a way similar to the musical scores written out of DNA base sequences. He stated that the idea has occurred to him but nobody has come forward to have a go as yet.

He was followed by Sir Harold Kroto (Chemistry, 1996) who concerned himself with another set of spheres, the mystical bucky balls. He gave a flamboyant presentation, full of special effects that could have made it to a Steven Spielberg film. It captivated the audience to such an extent that he got a standing ovation. The applause would not die even after he had left the stage.

Peter Agre (Chemistry, 2003) demonstrated how attempts to find the answer to a very mundane and simple question can enable one to make seminal contributions to the human knowledgebase. Since water is a major constituent of life, he wanted to know how this simple molecule is transported across the cellular membrane. So painstaking and methodical were his efforts that they caught the eye of the Nobel Committee. He was very satisfied when he was able to neatly tie up all loose ends and unequivocally delineate all the structural and functional properties of aquaporins. He never expected that he would ever get a call from Stockholm. But when it did come one October morning he was not sure that he had heard it right. For the caller had congratulated him on winning that year's Chemistry award. 'Chemistry? What do I know of chemistry?' he asked himself but was reassured to some extent on knowing that 'I was sharing it with Rod MacKinnon, a true scientist whom I admired'. Life does change after

the award, he said. 'My local pub where I was a satisfying non-entity till then had put a huge placard outside saying that it was happy to serve a Nobel Laureate'.

Everyday there was a round table discussion on topics of some social relevance like energy security or global warming. Aware that action on these issues needed political will, the laureates were asked whether they would participate in movements to that effect or sign petitions urging political leaders to take appropriate measures. Everyone wished to stay away from politics except on issues that had ethical overtones like nuclear disarmament.

There were ample opportunities for the youngsters to have more informal and close interactions with a laureate of their choice during the number of parallel sessions in the afternoon. The banquet dinner on the first day and the 2-hour boat trip to Mainau for the closing ceremony presented other opportunities for intimate and animated talks.

The selection criteria for a place in Lindau are very stringent. The competition is very stiff. This year some 260 young scientists and students had applied to the DST. Only 25 made the final grade. Clear demonstration of one's talent is necessary, backed by recommendation of one's mentors and publications in peer-reviewed prestigious journals. Even so there is no need to lose heart if one fails to make it to the final list. Klaus von Kitzing also had made similar efforts during his apprentice years without success. 'I realized then that the only way to get in was to win a Nobel Prize' He added, *sotto voce*, tongue firmly in cheek.

G. P. Phondke, 5, Ragini, Sahitya Sahawas, Bandra East, Mumbai 400 051, India.
e-mail: ball@vsnl.com