Science of the Times

From Abstract Concepts to Daily Life

By J V NARLIKAR

IN late January, an international meeting took place that brought scientists and science communicators together to discuss how science and technology can be integrated with the life of the common person. Although organised on a much more modest scale than the high profile Science Congress that had been held in Pune three weeks earlier, this meeting nevertheless addressed practical issues related to reducing the gap between S&T and the prevailing ethos. As the participants from different countries shared their experiences, it became clear that despite the sweeping advances of technology, human societies are still a long way from achieving the scientific ethos. As far as the Indian ethos in concerned, the following experience of mine speaks for itself.

Scientific Temper

While transiting through Mumbai a year ago, I had to spend a few hours at a hotel near the airport. In the hotel lounge, the bell captain recognised me and came over to chat, saying that he had heard me speak at an NGO meeting on the eradication of superstitions, adding that he himself was an active member of that organisation. I was very happy to learn this. However, an hour later, when I was eating in the hotel coffee shop, I was recognised again. This time by a diner in an expensive suit wielding a cellular phone. He sought my confirmation of what he already believed was going to happen, namely the catastrophic end of the world because of planetary alignment.

This contrast illustrates the fact that scientific literacy, or lack of it, does not depend on the social or economic strata. Nor does it seem to be related to education. An illiterate farmer's wife will not accept new kinds of seeds until actual trials have convinced her of their productivity. A college teacher with Ph.D will, however, uncritically wear a metal bracelet because she is told that it brings luck. We may extol Jawaharlal Nehru for emphasising the need for a scientific outlook, but our scientific labs will religiously worship their instruments at Dusherra time. We may sing praises of the communication and software revolution, but look how the same information technology was put to use to spread misinformation about the milk-drinking Ganesha.

February 28, 1928 was the date on which CV Raman made the important discovery that was to be immortalised as the Raman Effect. February 28 has been used since 1987 for a nationwide celebration of Science Day. One may question the wisdom of adding one more occasion to the already long list of celebratory days in our calendar. Don't we already have a surfeit of public functions in which a handful of distinguished personalities call upon the audience to do this or that, depending on the occasion? And aren't those pious invocations forgotten the next day?

This is what I felt when the institution of the national science day was announced. However, while I continue to be cynical of ceremonial functions in general, I feel that national science day does provide a useful occasion for the much-needed exercise in science communication. This is the day when science communicators have the opportunity of bridging the wide gap between the current public awareness of science and technology, and reality. Nevertheless, knowing how we manage to waste precious opportunities provided by such celebratory occasions, here is my list of how science day should be celebrated and how it should not.

The don'ts first. Avoid the standard public function wherein a number of dignitaries make long speeches on the importance of science and technology, dwell at length on scientific temper, invoke India's glorious past when our ancestors knew everything that modern science has found or will find in the future. Then there is another don't, which was forcefully brought home to me one science day.

Prime Target

I was invited to deliver a science day lecture, which was arranged in the most important auditorium in the city. The attendance was at best 50 per cent of the capacity, mostly senior and distinguished personalities who turned up in cars. I could hardly spot any young students in the audience. Why did you not hold this talk in a university campus, I asked the organiser who was a high-level government official. He replied that he feared student trouble and so he wanted to hold the talk where it would be difficult for students to come. Anyway he was happy that important government officials, the chief secretary included, had attended my talk which spoke for the success of the occasion. I did not tell him that on the previous day I had delivered a talk in the local university in a lecture hall brimming with students who listened in rapt attention and asked lots of questions afterwards. In short, students should be your prime target on science day.

Yes, student participation in science day programmes will inevitably guarantee their success. Science quizzes, essay competitions, elocution competitions, posters and models put together by students are means of engaging students in science through recreation. We once organised a demonstration of 'miracles' performed by a few volunteers from a superstition-debunking organisation. After the miracle was performed, it was explained in terms of scientific principles. The exercise served a dual-purpose: it demonstrated why one should not be taken in by miracles; but it also underscored the practical applications of scientific principles. What otherwise would have remained as abstract textbook concepts took on reality and were appreciated that much more.

Benefits and Pitfalls

Science day also provides opportunities to scientists to reach out to the public and the media. An open house organised by a typical research centre is a means of showing the taxpayers how their contributions are being put to use in R&D programmes. Popular lectures, films, demonstrations of equipment, and question-answer programmes are serious attempts to increase public awareness of the dual and interrelated forces of science and technology which are now determining how we live. Media, print as well as electronic, can provide very effective means of communication. However, because science day falls a day before the annual budget speech every year, the media is too preoccupied with speculation over rupees and paisa, to do justice to an important occasion.

While inaugurating the Pune conference, Professor Yash Pal had frowned upon the phrase 'science popularisation', saying that it suggests commercialisation like the way soft drinks or detergents are projected on the screen. Sure, one should project science seriously and factually, informing people that its benefits and pitfalls depend on how it is used. But all means should be tried to project it to the masses, for it is as much a part of our daily existence as soft drinks and detergents. Actually, much more so.

