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BY THE WAY

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## The missing case of the scientific Indian

THE end of the century is here. Taking stock of what happened during the previous years has become a major preoccupation of the media. Sadly, both the print and the electronic media do not give much importance to science. Politicians, writers, artists, film actors, and celebrities are given their due. And rightly so. But, in the process, scientists seem to have been sidelined. This general apathy towards science and a lack of scientific temper even among the elite of the country is a poor commentary on the Indian sensibility.

Science is not just about blasting nuclear missiles. It finds answers for complex societal problems. It has applications on economic competitiveness and our ability to solve serious environmental issues. It promotes openness and rigorous scrutiny of all ideas. And more than anything else, science is all about wonder and joy. All of us may fail in our duty if we are not able to impart the excitement of discovering science for the young generation. Science, the pure science, is a deeply emotional and a creative

experience for those who practice it. Not convinced? Please read Subrahmaniam Chandrasekhar's *Truth and Beauty: Aesthetics and Motivations in Science* or J. Bronowski's *Science and Human Values*. We are living in dangerous times and the lack of scientific literacy can result in our collective decline.

When society forgets its priorities and get entangled in inconsequential and petty squabbles, it loses its strength to tackle the real issues. History is replete with such examples, where great civilisations and nations died without so much as a whimper. An ancient example is that of Athens; a recent one is that of the Soviet Union, which collapsed in our drawing rooms.

What are the real issues that confront us in the coming millennium? As I see it, the outstanding problems will be global warming, ozone depletion, air pollution, radioactive wastes, acid rain, deforestation, population explosion and natural and man-made disasters, which are going to over-

shadow even the social problems like religious fundamentalism. All these problems not only require application of science and technology, but inculcation of scientific temper and literacy.

Imagine a situation where our low-lying coastal areas are submerged due to a rise in sea level, which in turn was caused by global warming. The Orissa cyclone offered us a historic opportunity where scientific literacy of our politicians could have worked wonders. We may have to deal with more such situations in the future. What are our long-term plans to meet such contingencies? Is our society equipped even to discuss such scenarios?

Rarely do we see any news in the media on the breakthroughs in fundamental science. No major science controversies are covered or discussed.

How many of us, for instance, are aware that even in a technology-driven country like the United States, some of the Christian revivalist groups are fighting tooth and

nail to bring back Creationism as an alternative theory to the Origin of Human Species. In fact, some of the states in US have stopped teaching theory of evolution and replaced it with Creationism.

On this issue, a group of scientists under the auspices of National Academy of Sciences released a statement which concludes: "No body of beliefs that has its origin in doctrinal material rather than scientific observation, interpretation, and experimentation should be admissible as science in any science course."

Incorporating the teaching of such doctrines into science curriculum compromises the objectives of public education. Science has been greatly successful at explaining natural processes, and this has led not only to increased understanding of the universe, but also to major improvements in technology and public health and welfare. The growing role that science plays in modern life requires that science, and not religion, be taught in science classes". This

shows that at least part of the scientific leadership in that country is mature enough to question regressive measures. Would our scientists express such a critical attitude in a similar situation?

Although we made bold steps in developing science and a scientific temper in 1950s, soon after we faltered. Several sociological factors led to this shoddy state of affairs: India's political leadership lacks a sense of destiny; her irresponsible intelligentsia is visibly interested in self-aggrandizement; an unimaginative bureaucracy; and the man on the street whose sole objective is to secure a white-collar job.

The beginning of the millennium should not be a merely a social event. It should be seen as an opportunity take stock of the past and prepare for a promising future. Science has a key role in bringing home that future.

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