

Science without borders

By J V NARLIKAR

I am just back from a regional meeting of scientists, held in Islamabad, on the topic of mathematical physics. The 'region' in this case means the Middle East, Central Asia and South Asia. It was felt by countries in this region that their scientists stood to benefit by meeting together periodically and exchanging reports on the state of their scientific research. India is not part of the group, since scientifically it is considered as belonging to a different league. Scientists from India are, however, welcome to attend as invited speakers and on this occasion there were a larger number of them than usual — a sign, perhaps, of the thawing of relations between India and Pakistan.

Thanks to the momentum generated in 1947 by scientists like Homi Bhabha and Shanti Swarup Bhatnagar, backed by Jawaharlal Nehru, India enjoyed a spurt in scientific research. There was a proliferation of national labs and research institutes for science. The creation of IITs underscored India's aspirations for high quality personnel in science and technology. The growth in medical education has also been impressive.

Across the border the post-1947 developments have not been as encouraging. Despite institutions like the famous Government College, Lahore, which in pre-Partition days produced two Nobel laureate alumni in science, Hargobind Khorana and Abdus Salam, science as a whole had been dormant in Pakistan. That situation may change if the speech by federal minister and chairman, higher education commission, at the Islamabad conference is anything to go by. The minister, Atta-Ur-Rahman, formerly fellow of King's College, Cambridge, said that government was taking several measures to attract young blood to science and technology, especially to pure science.

These measures include a significant pay hike to academics across the board, increase in student research stipends and opportunities for initiating major research projects. For

example, a young Pakistani scientist completing his PhD abroad is offered a job in his homeland along with a research grant of \$50,000 for setting up a research facility. The publication of a research paper in a foreign journal would automatically entitle the scientist to a reward of Rs 50,000. Moreover, a university teacher gets an additional Rs 5,000 to his monthly salary for each PhD student supervised.

To modernise the system, the ministry has also planned to create high-speed broadband information highways linking major cities in Pakistan. Electronic access to a large number of journals is now being made available to country's researchers. Facilities of video-conferencing, on-line access to leading foreign experimental facilities and fast communications internationally are being created.

We in India need to take these developments seriously. It is better to think big than to do nothing at all. We need to offer substantial improvements and incentives to boost basic scientific research.

There are ways of objectively assessing the research performance of a scientist. His publications in high-profile journals of international standing, quality of work done by his students and his participation in international collaborations with other leading scientists are evidence of achievements. While a once-in-lifetime Bhatnagar award may bring him mental satisfaction, what he needs is a sustained rise in salary, better working environment and access to bright students. Brilliant students will flock back to science once they see some of these changes.

What is being done at present is lethargic and piecemeal at best. For example, even giving just one extra increment to a national awardee invites adverse comments from auditors. In a recent discussion on information highways to be opened in India, even a fraction of what Rahman is proposing for Pakistan was turned down on the grounds that we are not ready for it yet. If we do not think big, we will lose the edge we possess at present.

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