

## Poor science, poor journals

The question of quality of research published in *Current Science* should be seen in the wider context of quality of research in India itself. There is no gainsaying the fact that the centre of gravity of the world's scientific activity lies much to the west of India. Using western science as a benchmark, one can divide science in India into three categories.

The first category consists of scientific activity that is substandard and dispensable. Sadly, most of Indian science falls in this category. Since this science is done with the government's approval and money, it has to be provided with appropriate publication channels also. If an Indian research journal wants to be reputed, it cannot be representative.

Most of the remaining science constitutes the second category. It is derivative of western efforts and is peripheral to it. It aspires to be recognized as such and is therefore sought to be published in foreign journals. This work is not path-breaking. If it does not appear in 'their' journals, it is likely to be ignored; at times it may be seen and absorbed, but not noticed. Small rivulets that do not fall into a major stream lose their way in the sands.

In addition to the substandard science and peripheral science, there is a third category, which we may call competitive science. Minuscule in fraction, it is, or can be, in competition with efforts in the developed countries. Examples: high-temperature superconductivity, and flowering of bamboos. It is this segment of Indian science, and this alone, that really needs, or can profitably use, a competent Indian research journal.

Although the natural constituency of a quality journal in India is thus extremely limited, a strong case exists for upgrading Indian journals. For one, if Indian scientists publish good papers in Indian journals, which are inexpensive and freely distributed<sup>2</sup>, Indian postgraduate students will become aware of frontline research. As things stand today, even a dedicated student is unlikely to know what lies beyond his rather outdated texts or what goes on in India on the research front.

Revitalization of Indian research journals will require coming to grips with two problems. First, like weeds stunting flowering plants, the existence of substandard science is a major hindrance to the development of worthwhile science. Paradoxically, unlike quality science which feels in-

adequate and restless, substandard science constitutes a system that is entirely self-contented, self-sufficient and autonomous. If Indian science journals are generally taken to be synonymous with trivia, there would be a natural tendency for sensitive workers to try to associate themselves with foreign journals, which, even when not so reputed, have at least the advantage of large circulation and attractive get-up. Second, choice of capable referees is by itself not sufficient to raise the standards of a journal. This is so because a referee reviews a paper more or less at the level of the authors rather than at his or her own. The strength of a journal lies in peer pressure, in its set of authors being identical with the set of referees. Unless one paper's author is another paper's referee, a research journal cannot flourish.

There can be one redemption for Indian journals. While Indian scientists aspire for scientific recognition from abroad, social and profession recognition is sought at home. This recognition can be made conditional on proven service to Indian science effort. After all, if Indian learned bodies are good enough to be members of, their journals should also be good enough to write for.

1. Mahadevan, S., *Curr. Sci.*, 1990, **59**, 442;
- Manohar, H., *ibid*
2. Vishwanathan, T, *ibid*

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It is heartening to see that issues relating to quality of science journals in India are being discussed in your journal objectively. I share most of the views expressed in these columns by Padmanaban<sup>1</sup>, Chatterji<sup>2</sup> and others on this topic. The quality of papers published in Indian science journals cannot be improved unless the quality of science itself improves, which in turn also depends upon the quality of journals that are ready to publish practically anything in the name of 'original research'. This vicious circle has so strongly bound the scientific community in India that it would require a sustained effort by all concerned to break loose from it. While objective refereeing/editorial decisions are primary requirements, several other measures are also necessary.

With regard to refereeing, it is unfortunate that, in spite of a very large number of 'scientists' in the country, there are only a

few in any given field who could perhaps be rated in the upper category by world standards. Unfortunately, many of these 'top scientists' are no more actively working scientists; they are more administrators than scientists. They do not always have a sound grasp of recent developments and their judgement tends to become dependent on their personal views. Under such circumstances, refereeing for Indian journals (and for research projects submitted to funding bodies) need not be restricted to Indian scientists; it should be international and without any excuses that papers/projects from Indian labs should be considered leniently because of various constraints. Scientists must also learn to be fearless when expressing views on others' work. It is because of lack of fearlessness and frankness in our scientific community that very often we do not talk about a scientist in terms of the quality of his/her work but how nice a person he/she is!

The quality of research papers cannot be improved unless the quality of research itself improves. Most of the research in Indian labs is repetitive and descriptive. Actually science would not have suffered if much of all this was not done, rather it may gain by the lack of it. A dismal aspect of scientific activity in our country relates to the nature of research problems taken up. While the majority of labs in university departments and research institutions around the country remain busy with trivial issues that cannot make any impact on world science, those few that are in the forefront also are often not engaged in research on topics that had a local genesis. In most cases, the research is an extension of the work that the scientist was engaged in while in a Western laboratory. Thus such work done in Indian labs remains peripheral, although the concerned scientists get good certification/acclaim because of their association with an established Western lab. This relationship also results in their desire to publish their work in a foreign rather than an Indian journal. PhD's from these labs are also often 'tailor-made' for Western labs. An unfortunate but common feature is that many of us take pride in having our PhD's working as postdocs in a Western country rather than trying to encourage them to work here. The various funding bodies must share the blame for this state of affairs. It is true that in other countries also poor science is done and there are many 'foreign' or 'international' journals that also publish anything. But in [the advanced] countries this does not create a serious problem since

the critical mass of good scientists is already attained and the system is self-maintaining. In our case, we have a critical mass of mediocrity so that mediocrity maintains itself. It does not let excellence grow easily.

A prime factor that has led to this sorry state of affairs is the basic morality of our community. Added to this is the fact the best brains are not attracted to scientific/academic careers for a variety of reasons. The less-than-the-best that come to this field are also under no compulsion to put in harder work. The system of promotions in universities depends exclusively on the quantity of PhD's and papers 'produced' rather than on their quality. In this rush for quantity, not only does the quality of science suffer but it also leads to a more serious snowballing effect of producing poorly taught and poorly trained degree-holders who may be future scientists/teachers. A system of encouraging 'young' scientists has been initiated with the pious objective of improving the quality of science. In this matter, again, sycophancy and personal likes and dislikes have gained the upper hand so that the system has become counter-productive. The enlightened among the younger generation must come forward with corrective measures and bold views.

1. Padmanaban, G., *Curr. Sci.*, 1990, **59**, 5.
2. Chatterji, D., *Curr. Sci.*, 1990, **59**, 295.

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Now that we are washing our dirty linen in public<sup>1,2</sup>, I wish to add a point or two to the excellent letters by Mahadevan and Manohar<sup>3</sup>. Most universities ask for number of publications 'published in national journals' and 'published in international journals' in resumé's to be submitted for evaluation. In the first place such a distinction should not be made. Secondly, the use of the term international as opposed to national (instead of foreign as opposed to national) suggests that none of the Indian journals is international. Is this not an insult? Further, in interviews and assessments for promotion, maximum points are awarded for publications in foreign journals. Even 'experts' go by the name of the journal and country of publication than by the content of the papers. Papers published in India are viewed with suspicion and returned, unless they are from a known author or group. The craze for publication in foreign journals will not cease as long as our own higher-ups in science have this bias. Any scientist publishing in an Indian journal will be looked upon more with suspicion than awe and all the talk of improving science and journals in India is mere tomfoolery.

1. Padmanaban, G., *Curr. Sci.*, 1990, **59**, 5.
2. Mahadevan, S., *Curr. Sci.*, 1990, **59**, 442.,  
Manohar, H., *ibid.*

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The spate of opinions expressed by leading scientists regarding the predilection to publish papers in foreign journals is a problem deliberately created by our top scientists and planners since the seventies. Until 1970 or so, quality papers appeared in our journals and the 'foreign phobia' had not set in. A new culture for papers published in foreign journals suddenly evolved which profoundly influences the following: Selection in (i) Bhatnagar Award, (ii) fellowship in the various academies, (iii) employment and career advance prospects, (iv) National Fellowship, (v) elevation of academic departments for special assistance by the University Grants Commission, (vi) membership in science and technology panels, (vii) award of major research grants to scientists. As disenchantment set in, our scientists have naturally preferred foreign journals. The glamour has gained momentum.

The remedy is a change in the attitude of our scientist-judges. Until then, we will continue to send our best papers to foreign journals, relegating the second quality to our journals, including *Current Science*. No government agency can force us (to do otherwise).

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