Science in Indian journals

The write-up by G. Padmanabhan on the standard of papers in *Current Science* is interesting. The question of uplifting the standard of Indian scientific journals has been discussed in many forums over the years. Nothing much has happened yet! The journals and the science in them seem to remain in obscurity for ever. This would be so as the quality of the basic science in the country is not improving at any great pace and journals from a country usually reflect, at the beginning, the quality of science being performed in that country. Thus, there cannot be a good journal from not-so-good science, although the reverse is not always true (for example, Japan, which in spite of having good scientific infrastructure does not produce any major scientific journal).

However, there is a way out. It is very much understandable that no young scientist or, for that matter, mid-career scientist in India would ever like to publish in Indian scientific journals for reasons which need not be elaborated again. Nevertheless, we have in our country a few established scientists (practising and publishing at a good rate) who have proven their credentials by publishing regularly in major international journals. They can indeed send their best work, which they feel could have gone into any international journal of repute, to Indian journals. None would doubt the quality of work if it comes from a working reputed scientist (we usually judge a paper by looking at the address from where it comes rather than by reading it, which is why no mid-career scientist can afford to take such a risk). The author can still reach a wider audience by sending reprints to the people who would be interested in the work. I personally feel this may work. In any issue of a journal, if we have two or three articles that would be read and cited by others, that is enough.

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G. Padmanabhan, in 'The quality of research in *Current Science*', stated that most papers reporting studies of pesticides and other toxic compounds in a wide range of aquatic and other organisms did not deserve to be published in *Current Science*. A great number of studies are conducted, particularly at university research centres, on pesticide toxicity to aquatic organisms. The majority of the studies pertain to effects of pesticides on easy-to-do parameters like oxygen consumption, organic reserves like lipid, protein and glycogen, or enzymes like acid phosphatase and alkaline phosphatase. Everyone knows that organochlorine pesticides have residual effects and organophosphorus pesticides affect the nervous system by inhibiting acetylcholinesterase. Surprisingly, central funding agencies still have funds to give away to projects of the above nature. Refusing to publish papers will not discourage scientists from conducting such studies. The research advisory committees, which screen the research projects at the universities and central funding agencies, should take an active part in dissuading scientists from carrying out noninformative, repetitive research.

Laboratory experiments may be necessary for a newly generated pesticide for which little toxicity information exists. The need for such experiments hardly arises in India, since almost all currently used pesticides have originated in other countries and they have already been extensively studied. A pesticide toxicologist may insist on conducting experiments in Indian conditions. This may be valid as toxicity of pesticides is greatly influenced by water criteria. The study has to be carried out using water from the river, where the pesticide pollution is taking place or is likely to take place, rather than with water from a pond or a well situated near the laboratory.

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Quality in scientific publishing can be enforced only through editorial policy and peer review. Our scientific strength is numerically comparable to that of the whole of Europe. The number of papers our scientists contribute annually to international journals is also quite impressive. Our own science journals cannot attract many of these papers. The recognition our system attaches to foreign publications is one reason for this. We may succeed in reversing this trend, though only slowly, when we can bring in more professionalism and quality in science publishing. There is no dearth of such professionalism. Resources are a genuine constraint for some publishers. But even those publishing organizations with resources do not appear to be keen on promoting quality and professionalism. The major ill, I believe, is the general policy to print papers with relaxed scrutiny, and acceptance of papers on considerations other than scientific merit.

We witness a disgusting race to publish. This situation churns out many worthless reports and doubtful claims. Many may help only in polluting the
scientific literature. The only beneficiary of these publications is the author because the career advancement system followed in our universities and research organizations promotes quantity rather than quality and objectivity. This race for numbers is also encouraging fragmentation of a single piece of work for more publications and resort to fraudulent methods. The peer review system is not always effective in curbing these unhealthy tendencies. The recent Bennveniste case involving Nature illustrates this point.

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Science in India

Many of us are worried about the state of affairs in the country as well as its science and technology. There is an apparent revival of emphasis on the cultivation of scientific temper and values.

Many stalwarts of science have come up with solutions as well as complaints. To me, we all lack something basic, which people in general and scientists in particular possess in most of the so-called advanced countries. In comparison, we have a much bigger cult of individual superiority (related to position and status), lack of humility, and the extremely servile characteristic called sycophancy. The less material resources we possess per capita, the more we tend to follow this pattern.

Caring for man and his destiny must always constitute the principal interest of all technical efforts. Let us hope we build such a scientific and technical structure where selfish and egoistic actions are looked down upon while humility and equanimity prevail amongst one and all. The acid test of our S&T progress will then be reflected through the actual living standards in our villages and urban slums.

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