

# CURRENT SCIENCE

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## CORRESPONDENCE

### Oops, but is your journal showing?—a rejoinder

While Shankar's letter<sup>1</sup> makes amusing reading, it also presents an extreme view of the state of affairs regarding scientific publications in this country. For scientists there are two kinds of authorities—management authority (based on appointment) and scientific authority (based on scientific achievements). Scientists are, or should be, far more concerned about scientific authority which is exercised by the international scientific community. A scientist is not recognized for the position he holds in his organization but by his contributions to science irrespective of his rank and salary. Scientists in the elite cadre wield influence and power as individuals rather than as members of an organized group. Important contributions to science are more often made by individual scientists rather than by teams.

Science believes in meritocracy. There is no democracy in science. A second rate scientist's opinion does not carry the same weight as that of a first rate scientist's. Scientists constantly assess and evaluate one another's work and place individual scientists on a stratified ladder. This is not the job of managers and administrators—if such a situation exists one should raise one's voice against it rather than acquiesce to it by proposing ingenious indices!

Shankar<sup>1</sup> also completely misses the point that in science, ultimately, it is not where but what is published that matters. The scientific community has, by and large, workable means of recognizing the merit of a piece of work though not always in a timely fashion. Often a scientific work gets recognition only when its time has come and the delay may sometimes be a century or two; till then the author and his work might well be met with great hostility.

After all Einstein never got the Nobel prize for his theory of relativity, and because of French male chauvinism neither Madam Marie Curie nor her daughter Irene, in spite of their Nobel prizes, could become a member of the French Academy of Sciences.

Over the past three decades, for better or worse, scientific journals have proliferated. Authors generally choose journals which they believe share their school of thought and which will catch the attention of a targeted audience. That is an author's prerogative. The high cost of journal production generally implies that bad journals will get weeded out for lack of an adequate subscription base.

In Shankar's view some journals are prestigious even though not widely read. I believe prestige is directly related to quality as recognized by a targeted group and hence it should have a wide scientific audience in that group. Therefore Shankar's statement seems to be self-contradictory and a slur on the scientific community. Incidentally, the *International Journal of Mathematical Education in Science and Technology* is a leading journal in mathematical education and is widely read by its targeted audience. I wouldn't know about *Sun*, *Stardust*, etc.!

On the other hand, there are some courageous scientists who take it as a mission to improve the quality of a journal by lending their personal prestige to it. C. V. Raman published prolifically in Indian journals and his reputation did not suffer. What Indian science needs is not cynical and self-serving comments but a pioneering movement nurtured by Indian scientists to raise the standards of Indian scientific journals.

Peter Mitchell, who won the Nobel prize for chemistry in 1978 for developing the chemiosmotic hypothesis, elucidated it in the sixties in two privately published monographs known as the *grey books*, simply because he wished to shun the traditional scientific establishment, and hence prestigious journals<sup>2</sup>!

The Bell Lab's house journal is widely regarded as must reading in certain areas of science and technology. It obviously speaks volumes of the high calibre and the self-confidence of the Lab's scientists.

Astronomers have been skilled at publicising their work<sup>3</sup>. As early as the 16th century, Tycho Brahe put up a printing press to promptly announce his discoveries. Brahe, incidentally, also measured the positions of planets so accurately that it enabled Johannes Kepler to synthesize his famous laws of planetary motions.

As always, social interaction among scientists matters in getting recognition and acceptance. It is therefore advisable to publish, attend conferences, and generally broadcast one's existence!

One of Shankar's grudges seems to be that some authors are prolific and hence by his implication their work cannot be good. Questionable view indeed. Euler produced hundreds of papers without the benefit of word processors, and so have many other outstanding scientists. More recently<sup>4</sup> Robert Gallo in 10 years (1981-90) has, on an average, produced a paper every 8.5 days with an average citation rate of 86 per paper. And during this period Donnal Thomas published 328 papers at an average of 11.1 days per paper and an average citation of 37.5 per paper. Gallo is widely regarded as a potential Nobel

Laureate and Thomas got the Nobel prize for his work in bone-marrow transplants.

The key question is not who publishes where and how often but whether a claimed authorship is justified. A scientific work is far better judged by not where it is published but by how often it is cited and how the work is followed up by others. Not all papers published in *Nature* become classics.

Today there is increasing awareness that scientists need to keep the public, whose money they use, informed and educated of what they do. Science is no longer an insulated pursuit of knowledge. Society depends on science to develop technology and to increase its standards of living. Science forms inputs to government policy formulations which, in turn, are influenced by public opinion. Having accepted a democratic set up and huge public funding for scientific research, scientists have an obligation to keep the public abreast of scientific developments. To bring the intricacies of science to the non-specialist, even the common man, we need more people like the late Richard Feynman and not hecklers who seem to

lack an understanding of the spirit of science in the 1990s, to write accurately for popular magazines and newspapers. Indeed many media publications have science sections simply because there is a demand for it from the lay readers. Fortunately, CSIR's current policy is sympathetic to this idea as are all enlightened governments around the world.

The scientific community generally knows how to zero in on important publications. To cite a recent example, a very interesting paper in CFD (computational fluid dynamics) which appeared in the *Journal of Computational Physics*, was favourably reported upon in *Nature*. However, it is doubtful that CFD people would ever seriously consider publishing their work in *Nature* notwithstanding *Nature's* preeminent status among scientific journals. It, however, speaks volumes about the editorial policy of *Nature* that in the true spirit of science it monitors the rest of the scientific publications world to inform its readers of important developments, including political, economic, and military.

The hallmark of a true scientist is to

judge a paper on the basis of its scientific contribution rather than its packaging. Unfortunately we have encouraged the 'me and no one else' type of scientists who find it expedient to judge the work of their subordinate colleagues by its packaging simply because they lack the confidence to judge scientific contributions on scientific merits. These very people, instead of resolving scientific differences according to the centuries old traditions of the scientific community, resort to character assassination in a manner more fitting to roadside thugs. The Indian scientific community needs to set up traditions whereby such undesirable elements amongst us are weeded out.

1. Shankar, P. N., *Curr. Sci.*, 1992, 62, 271.
2. Sitaraman, V., *Curr. Sci.*, 1992, 62, 806.
3. Maran, S. P., *Span*, June 1992, p. 18
4. Anderson, C., *Nature*, 1992, 355, 101.

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## NEWS

# Adaptive response in radiation biology

A recent meeting\* brought together about 250 scientists including both the seasoned radiation biologists, cancer epidemiologists, cytogeneticists and radiation physicists as well as young investigators in the relevant fields from all over the world to discuss the topic of stimulatory effects of radiation and adaptive response at low dose and low dose rates and the immune reaction of the living organisms against radiation damage.

Leonard Sagan (Electrical Power Research Institute, Palo Alto, USA) giving

\*International Conference on Low Dose Irradiation and Biological Defence Mechanisms, Kyoto, Japan, July 12-16, 1992. The proceedings of the conference will be published by the Elsevier Science Publishers, Amsterdam.

some details on the origin of radiation paradigm, stressed the necessity of epidemiological studies and research on the possible molecular mechanisms of radiation effects. An explanation on the enormous strides made in the estimation of the risk of cancer following ionizing radiation in the past four decades was given by William J. Schull (University of Texas Health Science Center, Houston, USA, and Permanent Director, Radiation Effects Research Foundation, Hiroshima, Japan). He discussed the completeness and accuracy of such studies and the uncertainty in dose response relationship due to confounding factors. He concluded that no risk model has strong biological basis and if ionizing radiation is a promoter in inducing tumour there should be a threshold for this.

B. L. Cohen (University of Pittsburgh, USA) spoke on the test of the linear-no-threshold theory of radiation carcinogenesis with special reference to radon in houses. Discussing the high dose data available from radon in mines in the US, Canada, Czechoslovakia and Sweden, he showed a decreased lung cancer in the population with an increase in radon dose. J. R. Maisin (Universite Catholique de Louvain, Bruxelles, Belgium) described the most promising treatments with single or in combinations of nontoxic doses of radioprotectors or biological response modifiers before exposure to ionizing radiation. He suggested that there is a need for new radioprotectors which are less toxic when given alone or in association with low levels of aminothiols.