

Criteria for Science Academy Fellowships

In India, several distinguished scientists have made significant contributions in different fields of science and helped the country to achieve excellence. The young talented scientists are rewarded through awards, and advanced training in India and abroad. The creamy layer of scientists with remarkably good achievements through modern/advanced research, as exemplified by publications in high-profile journals, is suitably rewarded with prestigious fellowships such as Fellow of the Indian Academy of Sciences, Fellow of the Indian National Science Academy and Fellow of the National Academy of Agricultural Sciences. The criteria for such nominations are rigid with selection committees comprising eminent scientists. For any scientist, the award of an academy fellowship is a recognition of his/her work and also serves as a source of encouragement. Among the many criteria for the award of fellowships, one is

the best ten papers published in quality journals. Depending on this and other criteria like patents, awards, etc. an academy fellowship is awarded.

From recent reports published on the quality of research papers in Indian journals^{1,2}, it is clear that many of the Indian journals are of poor quality. Then, how is it that many scientists bestowed so far with fellowships by different academies have included 'Indian' journals among their best ten papers? And, has any academy awarded fellowship to a scientist based on his/her publications in 'Indian' journals only? Given the low standard of Indian journals, most of the Fellows of science academies in India would have benefitted only from their publications in 'foreign' journals.

How would 'Indian' journals improve in quality and standard if the prestigious academies favour 'foreign' journal publications for recognition of scientists as

Fellows? It is true that science has a global approach and cannot be restricted to any country, but that will not be convincing if the national perspective on science and technology development is to be given a major thrust. Admittedly, by patronizing more of 'foreign' journal publications, the 'Indian' journals are belittled to the extent that not many Indian journals are seen under the 'Science Citation Index'. The science academies have to ponder over these genuine points in the overall interest of science in India.

1. Rajagopal, V. and Rameshkumar, M. P., *Curr. Sci.*, 2005, **88**, 207–208.
2. Arunachalam, S., *Curr. Sci.*, 2008, **94**, 848–849.

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Palaeontology and cases of fraud

P. Balaram has written the editorial in his usual impeccable style¹. While the issue of publishing a paper based on orphan samples of unknown provenance may still be debated, I was intrigued by the statement that 'Palaeontology is a fertile field for controversies'. Citing cases like the 'Piltdown Hoax' or recent Cambrian fossils in Vindhyan², the editorial further concludes that in paleontology 'Hypotheses sometimes run far ahead of the evidence'. The message the scientific community gets is that as a subject 'Palaeontology' often lacks scientific rigour and is plagued by unethical practices. One should not be swayed by such disputed judgement as ethical issues have time and again hit the history of science.

To cite a few examples, Emil Rupp (the German physicist) claimed that his 'canal ray' experiment supported the Einstein's theories on wave-particle duality. His claim of accelerating protons at 500 kV was challenged by his colleagues and was found to be forged that led him to retract all of his five related publications³. In more recent times, the case of the star physicist Jan Hendrik Schön

from Bell Laboratories who made a fake claim that he has discovered a new superconductor made from plastic, was widely publicized. Between 1997 and 2000 Schön published eight papers in *Nature* and *Science* and was thought to be too productive by some of his colleagues. In 2002 it was found that all his work was fabrication without any experimentation⁴. Within a month, all of his papers (including his Ph D) were withdrawn. A recent case in India, which was termed as 'A Massive Case of Fraud' in chemistry⁵, where a chemistry professor from Tirupati kept on publishing forged experimental data in journals like *Talanta*, *Food Chemistry*, *Analytica Chimica Acta*, *Chemosphere*, etc. The recent case of false claim by a Korean scientist on 'Magnetic nanoprobe technology for detecting molecular interactions in live cells' is known to all.

As Horace Freeland Judson, the well-known science historian, writes: 'Cases abound. In present day science the incidence and character of fraud change across the spectrum of specialties. The phenomena also have a temporal dimension; they have shifted over the centu-

ries⁶. Paleontology, therefore, is only one component of this spectrum and sporadic ethical issues, like any other branches of science, do not necessarily make it 'an area that is a minefield of controversies'.

1. Balaram, P., *Curr. Sci.*, 2009, **96**, 1429–1430.
2. Bengtson *et al.*, 2008; www.pnas.org/cgi/doi/10.1073/pnas.0812460106
3. Dongen, J. V., *Hist. Stud. Phys. Biol. Sci., Phys. Biol. Sci.*, 2007, **37** Suppl., 73–120.
4. Reich, E. S., *Plastic Fantastic: How the Biggest Fraud in Physics Shook the Scientific World*, Palgrave, Macmillan, 2009, p. 272.
5. Schulz, W. G., *Chem. Eng. News*, 2008, **86**, 37–38.
6. Judson, H. F., *The Great Betrayal: Fraud in Science*, Houghton Mifflin Harcourt, 2004, p. 463.

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