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CORRESPONDENCE

Referees' dyslexia

A new theory from an unknown author from an obscure institution is likely to be rejected by referees, especially when there is a universally held explanation. Even if published, the theory may be ignored and seldom the rejections may reveal symptoms of referees' dyslexia: an inability to read unfamiliar words in context and to focus on an argument, an inability which leads to intemperate criticism and sometimes to abuse.

Symptoms may include opinions

1 that the paper is very badly written, even' unreadable, poorly constructed or even worthless. The citicism is general and no specific examples are given, so that revision is very difficult. Although complaining about unspecified ungrammatical mistakes, the referee's remarks are not always faultless.

2 that the paper should be cut by a half or two thirds and that many or most of the tables and graphs are unnecessary. No reasons are given.

3 that carefully referenced statements and closely argued and logical interpretations can be dismissed witb olympian unreferenced 'well known' opinions.

4 that the opinions contradict those of another referee.

5 that involve gross distortion or complete inversion of the author's arguments and findings.

6 that the paper is so poorly written that the referees cannot understand it.

Etiology, case-histories and treatment will be discussed; cure if not prevention will be prescribed.

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How does one separate a mixture of cuprous chloride and mercurous chloride?

Much has appeared in these columns in recent times on the state of science in the country today. There is no doubt that there is a lot that is wrong with the attitudes and antics of Indian scientists. However, rather than generalize about the various ills which afflict 'the system', I would like to suggest that the rot goes far deeper than just the centres of higher learning, universities, institutes, national laboratories and so on. Indeed, I feel that the trouble begins right at the high school level.

This was brought home to me painfully when my twelve-year old son asked me how cuprous chloride and mercurous chloride could be separated. I should explain that the child who goes to a well-known school in Hyderabad has only been studying 'chemistry' for a few months and that he has to regularly answer a number of questions which are supposed to probe his 'expertise' in the subject. He is also tested frequently on such questions. My initial reaction was to wonder why anyone would want to separate these substances. This reaction gradually gave way to an embarrassment that I did not know the answer. At this stage I decided to try a little experiment and asked some of my colleagues the same question. One of them said that this must be a trick question. Another suggested a method – however, this method essentially decomposed one of the two substances during the separation. A third colleague was more determined and with the help of the *CRC Handbook, the Merck Index*, and Greenwood and Earnshaw's *Chemistry of the Elements* found out what appeared to be a reasonable answer after about half n day's work.

The ludicrous aspect of this incident apart, what are the implications of incidents like this towards inculcating a proper scientific temper in our country? For a start, I would infer that any sensible child, after being fed this kind of scientific diet would run as far away as possible from chemistry. The ones who thrive on this kind of gruel, however, are far more interesting for they are the ones who will probably remain within the scientific 'system' for years to come The lessons are taught

early – rote learning leads to a conformist attitude and a fear of expressing criticism even as success in examinations based on memorizing useless facts leads to a blind acceptance of the 'system'. The most important casualty in all this is the spirit of imagination which is the lifeblood of research. Regrettably, the attitudes encouraged by the 'system' in the early years of scientific education are in total consonance with the type of behaviour that is expected, even applauded further in the Pilgrim's Progress.

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Enhancing indigenous science coverage in communication media

Creating public understanding of science in an era when science and technology are permeating every fabric of society needs no emphasis. Though we boast of having the third largest pool of scientific and technological manpower in the world, there is much to be done in the field of S&T communication at the grassroot level. Despite some encouraging trends in recent years[1], the readily available media-friendly western stuff gets the best treatment in our communication media, especially the print one.

Unfortunately, the results of our thousands of scientists, engineers and technocrats actively working in critical areas in S&T, largely go unnoticed. There could be many reasons. For example, there is still a large number of scientists who do not see the need to explain their work to the laypersons at all. Worse still, there are those who actively avoid doing so. The reasons are manifold: scientists often believe that their research work is too complex for ordinary people to understand, that journalists are not qualified to report what they do, or even that there is a danger of funding being withdrawn if the truth gets out. Surely there is *no* concept of S&T that can't be understood by the attentive layperson, though the investment of a little effort may be required.

With this backdrop, this communication discusses some ways and means to enhance the present coverage of our achievements in S&T sector. This could perhaps be done by identifying 100–150 active science writers and then devising a suitable mechanism by the concerned agency to provide these writers the best of 4–5 S&T periodicals of our country on a regular basis.

To begin with, these science writers could be the members of the Indian Science Writers' Association, the national body of science communicators and the periodicals be our 12 S&T journals being covered by the Science Citation Index (1991) which in turn covers over 3200 world's leading science journals. These are (1) *Current Science*, (2) *Indian Journal of Chemistry*: Section A Inorganic, Bio-inorganic, Physical, Theoretical and Analytical Chemistry, (3) *Indian Journal of Chemistry*: Section B Organic Chemistry, including Medicinal Chemistry, (4) *Indian Journal of Medical Research*: Section A Infectious Diseases, (5) *Indian Journal of Medical Research*: Section B Biomedical Research other than Infectious Diseases, (6) *Journal of Astrophysics and Astronomy*, (7) *Journal of Biosciences*, (8) *Journal of Genetics*, (9) *Journal of Scientific & Industrial Research*, (10) *Pramana – Journal of Physics*, (11) *Proceedings of the Indian Academy of Sciences – Chemical Sciences* and (12) *Proceedings of the Indian Academy of Sciences – Earth and Planetary Sciences*. Of these, two general journals, viz. *Current Science* and the *Journal of Scientific and Industrial Research* could form the core journals. And from the remaining 10, an option to select any two or three more would make a total of best of our 4–5 S&T journals. Needless to say, the number of both the active science writers as well as S&T journals can be added/deleted simply by 'performance evaluation' exercise.

This could be supplemented with S&T Newsletters, Annual Reports of various S&T Institutes/Organisations/Ministries and non-periodicals like the Technical Reports, Expert Group Reports, etc.

In a world of limited resources it is up to both the scientists and the science writers to convince taxpayers that their money is well spent on research.

1. Jain, N. C., *Curr. Sci.*, 1993, **65**, 441.

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