The article by George *et al.*[2] is a welcome effort to search for biodegradable insecticides of natural origin.

Over 2000 plant species are reported to possess insecticidal properties. In our laboratory at Central Institute of Medicinal and Aromatic Plants (CIMAP), we have undertaken an exhaustive programme on screening of prospective natural products of plant origin. We have been able to identify essential oils of *Mentha citrata* and *Pinus longifolia* against *Sitophilus oryzae*[3], and *Cedrus deodara*[4,5] and *Matricaria chamomilla*[6] against *Callosobruchus chinensis* as potential grain protectants, and two Indian patents on the process of pulse beetle pest repellent tablets (Ref. No. 2441/Del/1995 dated 27.3.97 and 1974/Del/98 dated 10.7.98). We have also reported that essential oil from *Cedrus deodara* is effective against insect pests like *Anopheles stephensi*[7] and *Musca domestica*[8].

The report by George *et al.* that *D. hamiltonii* root possess strong aromatic odour that helps long storage of grains is quite attractive but the effective dose proposed is known to be toxic to *B. coli* at 0.041% concentration and 0.02% to fish. Furthermore, in the 1940s there was a report that a bacteriostatic compound arrests the growth of *B. coli*[9]. It could have been better if investigators of this had provided information on grain protection efficiency for 1, 3 and 6 months instead of 1, 3, 7, and 21 days only. Repellents leading to insect mortality are preferred to protect food grains rather than insecticides with direct toxicity against target insect pests. Moreover, this kind of work should be under study of shelf life, odour value and taste of product acceptable to human consumption, seed germination, etc. If an active compound is being recommended for use in protecting grains from insect pests, its effects on test animals should be studied for carcinogenic and mutagenic properties.

The main reasons for slow progress in developing bioinsecticides of commercial value appear to be (i) enthusiasm for quick publication, (ii) evaluation of materials against non-target insect pests, (iii) arbitrary dosage of testing material and standard, (iv) lack of facility for safety test of products, (v) short duration of the study, and (vi) improper survey of scientific literature. Most Indian scientists hesitate to refer to any work of Indian origin. There is a wealth of knowledge available in Indian scientific traditional literature. While planning such studies, we should pay better attention to areas like sound experimental designs, supply of raw materials, higher bioefficacy, industrial interests, simplification of natural insecticide registration procedure, knowledge on insecticide formulation techniques, collaborative efforts in R&D, and development of trained R&D manpower. Those involved in formulating the policy for such studies can minimize the hurdles present if concerted efforts are made in this direction.

Search for bioinsecticides from plant species is one of the important areas where Indian scientists can take a lead and capture the global synthetic insecticide market[10]. Besides, work carried out in this area may fetch a large number of patents in a shorter duration of study.

1. Saran, Rohit, *India Today*, 1999, vol. 30, pp. 62–64.
2. George, Jacob, Ravishankar, G. A., Pereira, John and Divakar, S., *Curr. Sci.*, 1999, **79**, 501–502.
3. Singh, D. Siddiqui, M. S. and Sharma, S., *J. Econ. Entomol.*, 1989, **82**, 727–733.
4. Raghuraman, S. and Singh, D., *Intl. J. Pharmacognosy*, 1997, **35**, 344–348.
5. Singh, D. and Agrawal, S. K., *J. Chem. Ecol.*, 1988, **14**, 1145–1151.
6. Singh, D. and Mehta, S. S., *JMAPS*, 1998, **20**, 397–400.
7. Singh, D., Rao, S. M. and Tripathi, A. K., *Naturwissenschaften*, 1984, **71**, 265.
8. Singh, D. and Singh, A. K., *Insect Science and its Application*, 1991, vol. 12, pp. 487–491.
9. Anon., *The Wealth of India: Raw Materials*, D-E CSIR, New Delhi, 1952, vol. III, p. 24.
10. Powell, K. A. and Jutsum, A. R., *Pestic. Sci.*, 1993, **37**, 315–321.

DWIJENDRA SINGH

Entomology Division,
Central Institute of Medicinal and Aromatic Plants,
P.O. CIMAP,
Lucknow 226 015, India

Comment on an editorial

Though the editorial 'Editors' (*Curr. Sci.*, 1999, **77**, 1121–1122) was probably provoked by the article 'From Auschwitz to Indian science' in the same issue (*Curr. Sci.*, 1999, **77**, 1134–1136), an important observation in that article was ignored, viz. that the unpleasantness of discussing the mass annihilation of human beings is circumvented by altering the vocabulary of discourse. For instance, considerations of the kilodeaths that would result from nuclear explosions are evaded by focusing on discussions of kilotonne yields, a seemingly innocuous term. Such discrimination between obviously correlated concepts was illustrated in the article by a reference to a scientific journal (changed at the suggestion of the Editor to the explicit mention of *Current Science*) publishing kilotonne yields and rejecting kilodeath estimates. The close relationship between the two concepts was stressed in the article by referring to them in the same sentence; instead, the editorial articulated separate defences of its treatment of kilotonne yields and kilodeath estimates.

Further, with regard to the official/government estimates of the yield of the May 1998 Pokhran II tests, the implicit complaint in the article was not that they were published, but that counter views were not pro-actively elicited and revealed. In doing so, *Current Science* behaved like an official journal, rather than as an independent *Nature*-like forum facilitating discourse and discussion and encouraging scientists, in the language of the editorial, to 'express an opinion that is contrary to what is perceived as an accepted establishment view.'

On the other hand, the editorial must be congratulated for raising fundamental questions regarding the importance of debate and differences of opinion. It

refers to the worries of some people about the possible damage to Indian science. Such worries are totally misplaced. If the fabric of science in India is fragile, it is precisely because of the absence of disagreement and controversy. Dissent is an essential condition for the health of science. Thesis, antithesis and synthesis are essential for the dialectical process of approaching truth.

The editorial also proceeds to justify on grounds of lack of originality the rejection of the paper estimating the kilodeaths that would result from a Hiroshima-type bomb on Mumbai. That is a matter for the author to dispute, but what needs to be pointed out here is that the journal does publish papers, classified as lectures, that show little evidence of originality and/or refereeing.

In the midst of the euphoria over Pokhran II, it was in fact a political decision not to publish a paper estimating the possible destruction of human life in an Indian metropolis from the use of nuclear weapons. In that context, *Current Science* unfortunately showed more concern for its own safety rather than for its founder's mission of spreading truth and awareness. Hopefully, such a lapse will not recur with the *elan* now characterizing the journal.

AMULYA REDDY

7/12, Palace Cross Road,
Bangalore 560 020, India

Presentation in seminars

The editor deserves appreciation for his editorial 'presenting science' (*Curr. Sci.*, 1999, **77**, 1005–1006), wherein he pointed out the all-round poor presentation of research work by a large group of Ph Ds from across the country. He feels that this is the general prevailing trend in most seminars/symposia.

For this sorry state of affairs, he rightly held research supervisors, academic bodies of the universities, and UGC responsible; along with prevailing differences in quality and infrastructure of the research laboratories across the country. However, he missed mentioning CSIR, which too appears to be casual in its approach in monitoring the various research projects – although perhaps it cannot be directly held responsible for this. I feel that another reason for lack of quality presentations is because the really good and motivated students are generally not available for doing research necessary to achieve academic excellence. Academia for awarding Ph Ds thus seem to have become commercial workshops.

However, the editor neither suggested any remedy for improving the presentations nor for making Ph Ds more credible. I, therefore, wish to outline a comprehensive Ph D programme – which I drew up in 1973 – for the admission, working, presentation, submission of thesis and examination. Unfortunately, the proposal was not approved by the Academic Council and the faculty of my university. I intentionally mention the year so that one can assess whether the same procedure can be applied in the present scenario.

Under this plan, a student seeking admission to Ph D should first give a seminar on any topic of his interest in the subject concerned; another seminar should be given before applying for registration on the subject he proposes to pursue for research, outlining the methodology to solve the selected problem. The third seminar, prior to writing the thesis, should concern the results obtained and their interpretations. The final seminar of course will be the Ph D *viva voce* examination itself. If in the first three seminars the candidate fails to meet the minimum level of standard set by the department, he should repeat the seminar after a suitable fixed time interval. But the assessment of the candidate by examiner/s in the fourth seminar should be based on the candidate's competence in defending his thesis.

Continuing on the subject of poor presentation, the editor has rightly raised the point about the time a speaker spends on the display of slides/transparencies, and the numbers involved – opinions, though, may vary on this point. Although with the help of these visual aids, the speaker is undoubtedly able to give a lot of information in a short time, the large amount of information presented and rapidity with which the slides are projected makes it difficult for the audience to assimilate the material. Therefore, as a rough guide, I feel that slides/transparencies should be displayed for not more than half the time allotted for the presentation. In addition, liberal use of chalk and board – the presentation methods of good old days – should be considered. This would be a welcome change, which provides relaxation to the understanding-faculty of the audience from the mind-bogging details.

However, all said and done, the point to be realized is that unless the basic stuff for the operation and management of research is of first-rate quality excellence in research cannot be achieved. Today, all that we are attempting is nothing more than just a patch-work.

Y. K. GUPTA

J-5, Phase II,
Shivalik Nagar, BHEL,
Hardwar 249 403, India