mayhem on healthcare caused by such branding.

Faulty dispensing due to the confusing brand names can lead to therapeutic failure or even cause death of a patient. In the United States, it has been estimated that look-alike and sound-alike drug names are responsible for approximately 25% of medication errors[1]. In spite of qualified dispensers, medication errors are large in number in the United States. So one can imagine the status in our country, where dispensing of medicines is done by unqualified personnel many-a-time.

Avoiding confusion by phonetic brands is not a difficult task if adequate care is taken while naming the brands, prescribing and dispensing. Pharmaceutical companies must make an unselfish effort to give a distinct brand name. Physicians must be careful with their handwriting. It would be appropriate if they can mention the brand name of the drug in capitals and the generic name within parentheses. Chemists and druggists should always refer back to the physician in case of any doubt and should update their knowledge about new brands introduced in the market. It is surprising to know that it is not mandatory to get approval for and register brand names with any central authority in India and there are no legal restrictions on use of old established brand names by firms even after some ingredients are altered[2]. Drugs Controller General, India (DCGI) should take an initiative to set-up a central authority to monitor registration of trade names and create a database of the brand names which should be updated on a regular basis.

1. Edwards, L. and Roden, D. M., In *The Pharmacological Basis of Therapeutics* (eds Hardman, J. G., Limbird, L. E. and Gilman, A. G.), McGraw-Hill, New York, 2001, 10th edn, pp. 1903–1915.
2. http://www.indlawnews.com/3F3F6954E40D8DC880B7583F349B7E20.

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Biodiversity loss linked to poverty

The responsibility of mankind for future generations is to leave a world rich in biodiversity, filled with plants, animals, and ecosystem processes on which all living things depend. Unfortunately threats to biodiversity are high, caused by detrimental human activities across the globe. The pressures from urbanization, mass tourism and intensive agriculture have pushed more and more native species towards extinction. One by one, the building blocks of entire ecosystems are disappearing. The 2006 *IUCN Red List* shows that the number of threatened plant species is increasing gradually (http://www.iucnredlist.org). The number of threatened plants is 8390, out of which 247 plants are found at different biodiversity hotspots of India. The loss of species is an indication of the degraded state of our planet. In my opinion, poverty is the root cause of biodiversity loss. Nature conservation programmes can never be successful if poverty plagues the country.

Poor people, especially those living in areas with low agricultural productivity, rely heavily and directly on genetic species and ecosystem biodiversity to support their livelihoods. Poor farmers are not capable of investing in farm improvements to increase yields sustainably. Low farm productivity leads to depletion of soil and water resources, and forces farmers to utilize additional land that serves as wildlife habitat. Thus lack of alternative income drives them to over-exploit natural resources. This overuse of biodiversity cannot be reduced unless efforts are clearly linked to increasing food security for large and growing low-income, food-insecure populations. Efforts should be made to mobilize and support local people to conserve areas of high biodiversity, and thereby improve the natural resource assets of rural populations. By engaging local people to conserve biodiversity that are critically important to their livelihoods, a broad-based, long-term strategy can be formulated for conservation of globally threatened biodiversity.

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Plight of botany practicals in universities

Higher education in science, particularly in botany, cannot be accomplished without sound practical knowledge. Teaching theoretical aspects is one thing but creating appreciation in the pupil's mind towards the subject can only be done by practical work. The scenario of botany practicals in Indian universities is very grim and worth attending to.

Deterioration starts early at 10 + 2 level itself as suggested by Paliwal[1]; lack of interest towards practicals persists in students from school itself, which they carry on when they come to higher education. It becomes difficult for disinterested and untrained students to sustain rigorous practicals at the undergraduate level. Further, in-depth knowledge and

understanding of the subject is lacking in the new breed of teachers, who are products of the same system.

Science teaching is already suffering from lack of funds; continuous escalation in costs of equipment, chemicals and consumables have further made the conditions depressing. In botany a major portion of practical work includes study of lower plant forms, viz. algae, fungi, bryophytes, pteriodophytes, gymnosperms, etc., provided to students in preserved forms. These plants are collected from their natural habitats by scientific suppliers and sold to universities at exorbitant prices. Commercially inclined suppliers who have no respect for biodiversity or its conservation make these collections. Overharvesting of natural resources leads to depletion of irreplaceable flora of regions, viz. Darjeeling, Shillong and other North East regions, Pachmarhi in MP, Nilgiris, Western Ghats, coastal marine areas, etc.

Upgradation of the botany syllabus by UGC has led to the indictment of several practicals in the molecular field, which vouch for costly instruments and consumables. No consideration has been shown to upgrade the staff, teachers, laboratories and library facilities. With most of the universities under immense teaching load, under-equipped staff and meagre funds, designing expensive practicals for a larger number of pupils is not feasible. Thus trained students, when they enter the field of research and academics, cannot deliver the quality of teaching and work needed for the purpose.

Various funding agencies, viz. UGC, DST, DBT, etc. initiate new courses like industrial microbiology, environmental sciences, etc. But after a few years, they meet the same fate due to lack of maintenance. Several instruments and facilities are thus rendered useless either due to untrained staff or poor maintenance; laboratory grants sanctioned by UGC for state universities cannot cater for even the basic necessities of laboratories. Population pressure initiates increase in number of seats without any consideration for grants and infrastructure capabilities; thus the very basic objectives of a science curriculum and work are defeated. Personal initiatives by staff at departmental level cannot solve the problem. But drastic steps have to be taken; otherwise, practical work will lose its credibility in times to come.

1. Paliwal, B. S., *Curr. Sci.*, 2005, **88**, 1715.

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Identifying dietary source of *Helicoverpa armigera* using carbon isotope signatures – A critique

At the outset, I submit my appreciation to the authors[1] for initiating a novel line of entomological research in India. However, I seek clarifications from them on a few aspects presented in the article, which may benefit readers of *Current Science*.

(1) There appears to be a mistake where the authors claim that, 'Such studies (of using the differences in carbon isotope signatures to infer feeding behaviour) have not been attempted for determining the feeding habits of insects (prior to their study)'. They may have overlooked the work of Gould *et al.*[2] (which has been cited by the authors in their article) who have shown that differences in the carbon isotope signatures between C_3 and C_4 plants are clearly reflected in the insect (another polyphagous species, *Helicoverpa zea*, which is closely related to *H. armigera*) that feeds on them, and further, have used this as a baseline data to show movement of *H. zea* across different host plant species.

(2) The authors[1] seem to restrict their experimentation to verify if *H. armigera* carries the isotope signatures of its host plants. Therefore, it appears that they have attempted to investigate a well-established fact in animal ecology that carbon isotope signature in the food (plant or animal) is reflected in the organism that feeds on it. A common statement used by animal ecologists in case of isotope signatures of carbon is, 'you are what you eat' because of only a slight enrichment in ^{13}C along the trophic chain[3] (while in the case of nitrogen, it is 'you are what you eat +3‰')[3], which appears to be the same that the authors[1] are claiming. Hence, the readers may be benefited if the authors would clearly mention their objective.

(3) Isotope signatures obtained from samples made from pupae may not be very reliable due to the problems posed by parasitization and/or microbial infection, especially when pupae have been collected from an open field as has been done in one of the situations in the study[1]. Although the authors would have taken enough care to check that the pupae were alive and apparently healthy, one cannot rule out the possibility of a parasitoid or an infection developing inside the pupal body. Isotope signatures of samples made from parasitized or infected pupae would not reflect the true signature of the species in question. Another point is that the moth is the one involved in migration in case of *H. armigera*, and therefore may be the most logical stage to be investigated for isotope signatures. I would like to mention the work of Gould *et al.*[2], where the wings of the moths of *H. zea* were used to determine the isotope signature (the probability of contamination is also reduced by using wings). Hence, it is difficult to understand why the authors[1] did not wait for moths to emerge from pupae before drawing samples? It would benefit the readers if they would explain the rationale for using pupae in their study[1].

(4) As the authors have not mentioned about the statistical test performed for the data presented in table 1[1], I 'believe' that they have compared all the five treatments (bendi – lab experiment; maize, chickpea, tomato and bendi – field collected) together to arrive at, what they mention in the text, 'The $\delta^{13}C$ differed significantly among the several host plant species with maize…'. This, I presume, also means that there was no significant difference in the $\delta^{13}C$ values