

Urgent need for preservation of the cultural heritage of Ethnoherbology

The World Health Organization (WHO) estimated that perhaps 80% of the world's population relies on herbs for its primary healthcare needs¹. There are some traditional medical practices, viz. Ayurveda and Siddha in India, Chinese medicine in China, Unani medicine in Islamic countries, etc. where herbal medicine is widely used for therapeutics. It is also observed that more than 35,000 plant species are being used around the world for medicinal purposes in traditional and ethnomedicinal practices². Namba³ has noted that in recent years, despite progress in medical sciences, there still are diseases that have no effective therapy, while traditional medicines have been recognized worldwide as a safe method of medical treatment. Recently, Bribiesca⁴ has stated that many aspects of allopathic medicine can deter patients, who instead opt for other types of therapy. The high-technology tests such as computer tomography scans, magnetic resonance imaging, endoscopies, radiotherapies and biopsies are expensive and often bothersome or painful. Pharmacological treatments frequently have side effects such as allergies, vomiting, headaches, etc. whereas traditional remedies usually have none. Further, it may be mentioned that the traditional remedies are easily accessible in comparison to chemotherapy, radiotherapy and surgery. WHO⁵ also noted that traditional medicine might be considered as an amalgamation of dynamic medical know-how with ancestral experience. It is one of the surest means to achieve total healthcare coverage of the world population, using

acceptable, safe and economically feasible methods.

There are more than 50 pharmaceutical drugs which have been developed from traditional knowledge of herbs of folklore medical practices. However, reality of efficacy of folklore claims is not beyond doubt. Usually in such medicinal practices, the herbs are used singly or in compound formulation with other herbs. It is also often used freshly, making aqueous extract, or sometimes in raw formulation. The efficacy will be observed, if the medicine is prepared according to traditional methodology. For example, the seeds of Bhilawa known as 'Bhallataka' in Sanskrit, i.e. *Semecarpus anacardium* L. f. (Anacardiaceae) has more than fifteen uses in folk medicine of India. It has also shown anti-tumour activity. The raw seeds are used in skin diseases. As extracted in milk, it is known as 'Amritballatak' and is used in a number of diseases and disorders. A number of research institutes are engaged in the evaluation of active chemical compounds in this and other similar folk medicinal herbs or seeds. These studies show that after pharmacological observations, the efficacy is not found valid as claimed in folklore. During the course of these studies, the compounds are extracted in different chemical solvents and trials are made first on animals. The effectiveness of some drugs could be lost when chemical principles are extracted from the crude drugs and then tested. This fact has also been discussed in the WHO meeting on the promotion and development of traditional medicine in 1977.

In the above context, we suggest that besides the investment of a lot of money for the evaluation and validation of the ethnoherbals in India and in other countries, where herbal preparations are being used based on folklore and traditional wisdom; priority and emphasis should be given to preservation of the cultural heritage of ethnoherbology, which is fast-disappearing under the influence of modern lifestyle. As research workers in traditional medicine and ethnomedicinal phytotherapy, it is reasonable to say that the views of Brian Heap (Foreign Secretary of Britain's Royal Society) and others are important and relevant when they acknowledge that folk remedies have a sound scientific basis⁶.

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5. *Tech. Rep. Ser. WHO*, 1978, **622**, 8–32.
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Scientific integrity

This is with reference to the correspondence of S. R. Valluri (*Curr. Sci.*, 2001, **80**, 1247–1248) presenting a case for establishing an Office of Research Integrity (ORI) under the Central Vigilance Commission (CVC) in India. Many honest scientists/S&T administrators in the country would certainly agree with Valluri that plagiarism, taking unfair and undue credit because of one's position,

falsification of data, false claims of achievements, etc. by individuals as also institutions, do exist. During my tenure with two IITs, I came across a few cases of plagiarism. I must mention that the senior faculty involved were punished heavily. Generally, however, such cases in most institutions get away without any publicity or punishment. Scientists are also human beings and not gods and, there-

fore deviations from ethical behaviour are inevitable and indeed occur all over the world with varying degree. As a thumb rule, malpractices are inversely proportional to the quality index of peer review, level and standard of research and the speed of judgement and its implementation.

The issue of code of conduct and of taking an oath has been discussed in

various fora, in particular by the Society for Scientific Values (SSV). The consensus was that an oath is repugnant to an honest and real scientist, but it provides respectability to the one who is not. It was thus agreed that a code of conduct be circulated to academic and research institutions, to enhance the awareness level. SSV did take up a few cases of malpractice seriously. Though it did not succeed in bringing the guilty to book, its actions did stir up awareness on the subject. Since then, the SSV has adopted a low profile and is following the standard route that our societies follow, namely organize national seminars on the subject and have our prominent scientists and administrators address the participants with the usual doses of theoretical values. If one had dared to ask these dignitaries as to what they have contributed to their own organization in terms of transparency in management and a value–merit–trust-based governance, there

would have been fireworks, to say the least.

N. Vittal is one of the most honest, efficient, eloquent and scientifically-oriented IAS officers. And, yet, despite such a reputation, Vittal bemoans his failure to achieve anything significant in his position as the CVC. Will Vittal be able to investigate the veracity of doctored achievements publicized by our ministries in full-page national newspapers on numerous occasions? Being also very practical, Vittal has rightly decided that there is no need to create an ORI in CVC. A similar set-up in USA has been dismantled. As Lerch of the International Relations of the American Physical Society has pointed out, the solution to curbing deviations from scientific ethics lies with the responsibility, shared among individuals, academies, professional societies and institutions while maintaining high standards with very strict peer review. True, the high

financial and recognition stakes in the new IPR regime have created a new dimension to this problem, particularly in the area of life sciences in USA. The setting up of a National Science and Technology Council Implementation Group (NSTCIG) by the Clinton administration may suit USA. But our problem is with our fundamentals. Do we have the spirit and practice of an American-style bloodletting peer review in any of our organizations? If anybody has tried it even mildly in any national committee, the result will be his/her banishment from such committees. Let us, therefore, clean up our own stables and support non-government organizations such as SSV to keep us all on the track. No ORI, please.

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Emergence of the third culture

The editorial in *Current Science* (2001, **80**, 1361–1362) about the emergence of the third culture made interesting reading. Both sciences and humanities existed side by side as academic disciplines in our education system. Study of the classics and languages was compulsory in the universities of Europe till the end of the eighteenth century. There was no rift between the sciences and humanities before the Industrial Revolution in Europe. The dramatic growth of science, particularly physics, during the last century created a wedge between science and humanities, thus giving rise to the ‘two-culture’ hypothesis.

In India, we followed a lop-sided educational policy. After independence, general science was first introduced as an optional subject in high schools. During the sixties, it was introduced as a compulsory subject, with stress on physics and chemistry. Science was further classified into medical and non-medical streams at the 10 + 2 level in schools,

with little chance to change over from one stream after that stage. Such rigidity has proved harmful to the development of modern biology, specially biophysics, in India.

The emergence of a third culture based on management, commerce and computer courses has already swept both the sciences and humanities in our educational institutions. Information technology (IT) is the buzzword and everyone wants to ride the bandwagon of IT. Since the universities cannot cope with the big rush for admissions, informatics courses have sprung up in the private sector, tempting students with career prospects in India and abroad after minimal computer training. Students are charged hefty fees even for capsule courses of a few weeks duration. IT shops in small towns are making a fast buck. A variety of computer courses from ‘Medical Transcription Certificate’ to ‘Masters in Computer Applications (MCA)’ are being offered by these IT shops, without proper

infrastructure or qualified faculty to teach.

I fully agree with the observations in the editorial: ‘The emergence of this third culture is dominated by the technologies of communications and driven solely by the mindless consumerism of the market place. Nowhere is the emergence of this third culture more manifest than in India, where the headlong rush of students to management, commerce and informatics courses, threatens to completely impoverish the academic life of our colleges and universities’. Our educational policy planners must take steps to save the other two cultures (sciences and humanities) from being throttled by the onslaught of the third culture in India.

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