

CORRESPONDENCE

Herbal drugs

Chattopadhyay¹ emphasized the need for toxicity testing of drugs derived from medicinal plants widely distributed in India because the crude products obtained from such cheaper sources are often associated with a large number of compounds that have discomforting abilities. It is more so because many of these contain mercury, lead, arsenic and other toxic organic substances besides being dangerous occasionally due to drug interaction. Piperine, being one such potent ingredient in many of the Ayurvedic formulations in the treatment of asthmatics and anticonvulsant in the traditional Chinese remedy, poses serious concern and consequently, herbal drugs are not safe always for uses. These need tests to ensure safety to the users.

An uneasy conscience is not the only reason why devotees of Chinese medicine presently want to avoid such preparations since many of these sometime even contain parts of endangered animals including rhino horn, tiger bone, etc. Forensic experts in the US revealed² that these medicines made in factories of China contain arsenic and mercury in dangerous levels. Analysis by X-ray fluorescence

and atomic absorption spectroscopy indicated presence of sulphur, phosphorus and calcium too in large quantities and also arsenic up to 36 mg and mercury up to 621 mg in each preparation of such herbal cures to reduce fever, ease rheumatic pain and to treat apoplexy. Presence of mercury and arsenic in those preparations caused poisoning in people using such preparations for a prolonged period at a stretch.

In fact, these herbal drugs employed on a commercial scale drew the attention of the US Food and Drug Administration, which monitors the safety of drugs and dietary supplements. The shipments of such drugs are held responsible for the spread of arsenic in the aquifers of the groundwater. Ed. Esphinoza, the Chief of the Forensic Sciences at Ashland, described that these preparations could be dangerous. In view of these findings that herbal cures are frequently laced with poisons many a time with inorganic salts of mercury and arsenic either alone or in combination and sometimes exceeding the limit prescribed by WHO prompted herbalists to abandon their practices without ensuring safety. Besides, addiction

becomes a concern. For example, cocaine abuse³ takes a shot.

Ancient remedies not being found healthy very often, herbalists diverted⁴ attention to purification of these crude products derived from plant sources and to utilization of these by engineering them. One such rests in the use of vegetable oil. Since the useful fatty acid, gamma-linoleic acid (GLA) is made naturally only by a few plants, the engineering practice is found in its utilization instead of going these plant products as wastage.

1. Chattopadhyay, M. K., *Curr. Sci.*, 1996, **71**, 5.
2. Holmes, Bob, *New. Sci.*, 30 September, 1995, p. 5.
3. Self, D. W., *Nature*, 1995, **378**, 666.
4. Reddy, Avutu and Thomas, Terry, *Nature Biotechnol.*, 1996, **14**, 639.

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Let us salute the old guards

I read with interest the articles on 'India's scientific community: A cultural crisis' by A. N. Mitra (*Current Science*, 1995, **69**, 802-808) and 'Dominance of older scientists threatens research in India' by K. S. Jayaraman (*Nature*, 1996, **379**, 105). While Mitra has identified the 'Inde-

genous culture' in the works of the scientists of preindependence era, he has seen 'little qualitative impact of the current works of the Indian scientific community on the international field despite proliferation in the number of papers published in various Journals'. Jayaraman

in his report has quoted the works of Rajeshwari of DST, which is reported to have pointed out that half of the researchers who joined the organizations before 1975 'need retraining to keep abreast of the latest developments in Science and Technology', and also has fur-

ther stated that 'leaving the work of the institutions in the hands of older scientists may reduce the overall viability of Indian research'.

In any organization, if old age has hindered or adversely affected the innovativeness and or creativity, then to uphold discipline among the scientific community, the policy of promotion or recruitment has to be suitably amended. Further, the performance and contribu-

tions of scientists, irrespective of their positions are to be rigidly and periodically reviewed.

However, in this regard, it is imperative to remind ourselves that the *present young* will be the *future old*. A scientist whether young or old should be in quest of truth and knowledge. In various disciplines, many of the theories and hypotheses, put forth by the earlier scientists have even to this day remained as the basis for any

future studies. Let us salute the profound knowledge and insight of the old guardians of science!

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NEWS

Uncommon opportunities for a food secure world

There can be nothing more urgent than ensuring a food-and-nutrition-secure world where all of humanity will have enough to eat and be free from malnutrition now and in the future. This, however, is a formidable task. Attempts made in the past have not yielded the desired results. The situation continues to be one of deep concern. It is to tackle this problem that the FAO, which has been continuously addressing the question of feeding the world for the past more than 50 years, is convening the world food summit, a high level meeting of Heads of State and Heads of Government, in Rome during 13-17 November 1996.

Many of our resources - aquifers and the ozone cover, for example - are being depleted unsustainably. The natural-biological resource base has steadily deteriorated. Loss of biodiversity, soil erosion and desertification have gradually reduced the productive capacity of agricultural land. In some cases, this process has become irreversible, pointed out Elizabeth Dowdeswell, Executive Director, UNEP. 'The earth's capacity to produce enough food to satisfy our expanding demand is now emerging as the overriding environmental issue as the world approaches the 21st century', says Lester Brown of the World Watch Institute. And 'food security' is just one, albeit the major, component in the ongoing population-resource debate. There are other factors such as unprecedented demand for energy and other resources, quality of life, technological options, political freedoms, economic arrangements,

notions of justice and equity, and living in peace with other creatures with whom we share the planet.

Thus the tasks confronting humanity today are mammoth and complex and call for concerted effort of people from different streams of life. Surely, science has to play a crucial and central role if the desired goals are to be achieved. It is with this conviction that several Science Academies of the world decided to pool their collective wisdom to address the major issues of food and nutrition security and prepare a work agenda to be placed before the November Summit of political leaders.

The initiative came from the National Academy of Agricultural Sciences of India, Accademia Nazionale Delle Scienze, Rome, and the Third World Academy of Sciences, Trieste, to organize a four-day Science Academies Summit to reflect as scientists on the theme of 'sustainable food security' and to delineate the role of science and scientists in ensuring a balanced food basket for an ever-increasing population. This meeting was supported by Food and Agriculture Organization (FAO), Ministry of Foreign Affairs, Government of Italy, United Nations Development Programme (UNDP), and the Encyclopaedia of Life Support Systems (EOLSS).

At the Science Summit convened at the M.S. Swaminathan Research Foundation, Madras, during July 8-11, 1996, there were representatives of fifteen Science Academies including the Caribbean and Chinese Academies as well as the

Academies of Kenya, Uganda, Hungary, Lithuania and Pakistan, and international organizations including FAO, UNDP, UNEP, UNESCO, and CGIAR. The meeting was addressed by, among others, Gaetano Zucconi, Italian Ambassador to India, Ministers of the Government of India Chaturanan Mishra and Yogendra Alagh, elder statesman C. Subramaniam, and Tamil Nadu's Minister for Agriculture Veerapandi Arumugam.

The summit commenced with welcome addresses delivered by M. S. Swaminathan, President of the National Academy of Agricultural Sciences of India, G. T. Scarascia Mugnozza, President of the National Academy of Sciences of Italy, Johanna Dobreiner of the Third World Academy of Sciences, Peter Rosenegger, FAO Representative for India and Bhutan, and Hans-C. von Sponeck, Resident Representative of UNDP in India.

Y. K. Alagh, Minister for Planning and Science and Technology, reiterated the need for comprehensive measures that would ensure long term sustainability and said short-run crisis management would only lead to serious adverse consequences. Recognizing the key role of information dissemination, he emphasized the need to adapt the extension system for it to be able to convey the tremendous technological developments that are taking place now. He would also like to have in place a good system of patenting indigenous innovations that would make them freely available to the local people. For his part, the Union Minister for Agriculture,