

Confusion regarding botanical names (the botanical name is the legal name of a plant on which patenting has to be done) is another daunting problem. The multiplicity of names for a single plant also confuses people. In such instances the correct name is judged by the 'rule of priority' of International Code of Botanical Nomenclature, accepted by all the countries of the world. Thus *Hydrocotyle asiatica* is now *Centella asiatica* and *Hygrophila spinosa* is *Asteracantha longifolia*. If we do not know the correct legal name, we may lose a number of patents.

Much is to be desired regarding the harvesting, storage and extraction of medicinal plants. A recent controversy on kava-kava needs to be cited. Kava-kava is a traditional beverage in the South Pacific prepared by fermenting the roots of *Piper methysticum* in water. Since the

active components are kava lactones, standardized extracts of kava-kava are prepared in Europe by extracting the roots in acetone. These extracts also led to many serious health problems and even to death. It has now been found that glutathione (a tripeptide) which is also extracted with kava lactones in traditional aqueous preparations, reduces the toxicity of kava lactones by the Michael reaction in which the lactone ring is opened, rendering the kava extracts non toxic<sup>5</sup>. This clearly emphasizes the correct extraction procedures to be followed for a drug.

We have to take the medicinal plant scenario seriously in our country. With WTO regime around the corner, if we do not hurry, we may have no other option but to buy 'Chawanprash' from a licensed Korean/Japanese manufacturer, who is quick enough to patent the same at his own cost.

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4. Chopra, R. N., *Indigenous Drugs of India*, Academic Publishers, Kolkata, 1933.
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## For whom the bells toll

Continuing with the already extensive correspondence on papers published from India, the recent NSF statistics provided in *Chemical & Engineering News* (14 June 2004, pp. 38–42) are both authoritative and instructive.

The general trends are as outlined previously by Arunachalam. For papers abstracted by CAS, the per cent growth between 1988 and 2001 is as follows: USA (31), Germany (45), Italy (92), Spain (127), Switzerland (73), UK (39), China (333), India (26), Japan (77), South Korea (591), Taiwan (330) and Brazil (395).

I have heard Arunachalam being debunked by some of our 'leading' scientists; they argue that Indian scientists might be publishing less, but the quality of their papers is so high that we do not have to worry about China. So, further statistics on papers published in ACS journals are pertinent. The corresponding per cent

growth rates are: USA (31), Germany (231), Italy (149), Spain (558), Switzerland (126), UK (300), China (909), India (177), Japan (151), South Korea (1472), Taiwan (718) and Brazil (500).

Now, I wait for further arguments such as: (i) ACS journals are not of the best quality; yes, I know ours are much better. (ii) Chemistry is not such an important subject; this would be from biologists. (iii) We have a 177% increase, so why worry? This would be from chemists. (iv) The per cent increases for USA and Japan are lower than ours; they need to be told that the total number of papers in ACS journals in 2001 was: USA (9051), India (307) and Japan (2062).

More absurdly, in the same year, South Korea already had more papers (346) in ACS journals than India. The same was true of Taiwan (327). Spain is a country where salary increases are connected to

impact factors. In Germany, the linking of these impact factors to research funding is more or less automatic. Amazingly, it has both a high growth rate and a large number of papers. Look at the numbers in the *C&EN* article. The numbers tell the story.

The alarm bells are ringing and have been ringing for some time. Only, no one is listening. Cultivated deafness, spooky logic and morbid obstinacy are truly prized assets in the Indian scientific community today.

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