

In this issue

Policy Perspectives

Growth of Indian pharma

On **page 1181** in this issue, Nisha Chandran and Samir Brahmachari from the CSIR provide us a Review Article that examines the history of the Indian Pharmaceutical industry from the perspective of changes in Policies. They analyse the history into five distinct phases and introduce us to the nuances of the effects of international treaties on national policies, on the one hand, and the impact of empowering policies on industries, on the other.

Though the focus is specifically on the Indian pharmaceutical sector, the article throws light on the way positive outcomes of policy decisions percolate to all – including the poor.

Predatory Journals in India

Prescription for prevention

A Research Communication on **page 1299** in this issue points out the main reasons for the proliferation of sub-standard, predatory journals in India: the insistence that scholars must have at least two papers for their Ph D, and the introduction of the number of publications as a part of the measurement of academic performance of university faculty. A large number of such predatory journals have now even entered the list of UGC approved journals, say the authors.

Besides journals listed in the Web of Science and Scopus, well-known scientific databases, the UGC-approved list contains 5699 journals from university sources. The list was created by expert committees as a provision for Indian researchers interested in areas not covered adequately by foreign journals. But this created an even more favourable environment for the predatory journal market.

Researchers from the Savitribai Phule Pune University, BHU, Rajasthan University of Health Sciences and Ottawa Hospital Research Institute, Canada collaborated to look into the quality of these journals. They randomly selected 1336 journals from the list of university sourced journals available at INFLIBNET. After removing the journals indexed in Web of

Science or Scopus, they examined the details of the remaining 1009 journals. Only 112 journals passed the test, highlighting an urgent need to raise awareness in universities about publication ethics.

A stricter enforcement of the criteria, for journals to be included, in the list of university sourced journals, will reduce the academic scam of predatory journals, say the authors.

Municipal Waste

Make haste for more manure

The wet garbage component of municipal waste is more than 50 per cent cellulose and some amount of hemicellulose and lignin. Burning it causes atmospheric pollution. Landfills create an unhealthy environment where pathogenic organisms can flourish. But turn wet garbage into compost, and the farmers who bring vegetables and fruits to municipalities can take home cheap organic fertilisers.

However, the problem is that composting does not always retain nitrogen content. The development of alkalinity causes nitrogen loss as volatiles. How can the various combinations used for composting figure in hastening the formation of manure without loss in essential fertilisers? A comparative study between composting municipal biowaste alone, with earthworms, with various cellulose degrading microorganisms and their combinations needed to be undertaken.

And that is what researchers from Guwahati and Imphal set out to do. Interestingly, the combinations they recommend reduce pathogenic bacteria and increase the amount of useful microorganisms in the compost. Read a Research Article on the issue on **page 1261** in this issue.

Bael Tree for Cobra Venom

Complexity to treat complexity

There are quite a few toxic macromolecules in cobra venom. So treating cobra bite is problematic. Immunotherapy to subdue the toxins often leads to anaphylactic shock, which can also be fatal.

Researchers from the Jawaharlal Nehru Tropical Botanic Garden and

Research Institute collaborated with a researcher from the University College, Thiruvananthapuram to suggest tackling the complexity of snake venom with the complexity of molecules found in the *Bael* tree – *Aegle marmelos* – used by traditional medical practitioners for snake bite.

They employed wet lab methods to determine the toxicity of a sample of the venom and to confirm that the plant extracts had an inhibitory effect on the typical actions of the venom. Then they pitted 81 known phytochemicals from *A. marmelos* against 14 cobra venom toxic proteins using computer simulation. The docking of molecules from the plant on the venom proteins showed that about 75 of the molecules are potential active ingredients.

The *Bael* tree is considered a favourite of Siva. According to Indian mythology, Siva is adorned by the poisonous Indian cobra, *Naja naja*. He is also said to have drunk the poison spewed out by the snake used for churning the oceans. No wonder then that devotees offer *Bael* leaves to Siva. One can't help wondering about the traditional healer who started the trend. See **page 1214**.

It's so Odd

Even restrictions didn't help

The odd-even experiment of the Delhi government, to restrict traffic based on number plates and dates, did not reduce pollution significantly, says a Research Communication in this issue.

Why? Because of the burning of biomass in surrounding areas?

No, it's not just that. People could use vehicles before and after the period of restriction – from 8 a.m. to 8 p.m. Moreover, the use of two wheelers increased since those did not come under restriction. The increased number of buses pressed into action to improve public transportation also contributed to vehicular pollution. Read on from **page 1318**.

K. P. Madhu

Science Writing Consultant

scienceandmediaworkshops@gmail.com