

lity and use of core samples are limited to specific areas.

The hand-operated borers are useful to carry out palynological analysis of Quaternary samples from lakes, ponds and dry surfaces<sup>5,6</sup>.

As random sampling palaeobotanists have discovered and described a number of fossils found in agriculture fields or forests as drifted specimens from nearby geological formations. Such specimens have little significance in stratigraphy but they do have immense botanical potentiality.

Unique *Pentoxylae* – a group of plants having *Pentoxylon* – stem, *Nipaniophyllum* – leaf, *Carnoconites* – seed-bearing organs and *Sahania* – pollen-bearing organs, was discovered on the basis of random samples collected from Rajmahal Hills of India<sup>7</sup>.

The well-preserved plant fossils of Deccan Intertrappean beds showing the finer anatomical details of angiospermous wood, leaf, flower, fruit, stem, root, rhizome and sporocarp of fern and its allies and the structural features of algae, fungi and bryophyte are known from random sampling. The study of morphological and cuticular features of glossopterid leaves and fructifications collected from shale dumps of collieries and quarries have pro-

vided substantial information about the taxonomic significance of Glossopterid group of plants.

The selection of sampling design also concerns the qualitative and quantitative assessments of plant fossils. Once their occurrence, variation, continuation and distribution are known, palaeobotanists would also like to know the mean size variation of individual species or relative change in numerical distribution of flora. The application of statistical model employing closely spaced vertical and aerial sampling from measured outcrop sections is ideally suited for such study<sup>8</sup>.

It is difficult to advocate a specific sampling plan for palaeobotanical study. The central strategy and selection are developed according to the aims and objectives. Continuous practice and experience help us to device proper sampling techniques for palaeobotanical studies.

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A. K. SRIVASTAVA

*Birbal Sahni Institute of Palaeobotany,  
53, University Road,  
Lucknow 226 007, India  
e-mail: ashwinisrivastava@hotmail.com*

## Is there anything like ‘Indian Science’?

It has been argued that there can be only ‘good science’ or ‘bad science’, and partitioning science on the basis of nationality or religion (Indian science, Islamic science, etc.) for whatever reason (national pride, statistics, politics, etc.) is only to diminish its universal nature and status. One of the dilemmas facing Indian scientists is the fact that for many awards and academy fellowships, a written and sometimes unwritten rule is that the research of the candidate in question should have been carried out in India, preferably with Indian collaborators (so far so good!), but published in refereed high impact international journals, most of which are not Indian! If this be the case, then in a way it is an implicit admission of our own weakness that our work needs a foreign platform for evaluation. In my opinion this presents a great paradox to the Indian scientist and

the issue needs to be addressed by the Indian scientific community as to whether or not science and its practice are truly global in aspect and whether the intrinsic merit of the research alone should decide its quality and peer group assessment.

I can understand the genesis of a rule which tries to put constraints on such Indian scientists (those who work and live here, but have ‘foreign’ collaborators) who have made their mark in ‘superior’ laboratories abroad without having to go through the travails and hindrances that many university faculty and some national institute scientists have to overcome in the successful completion of their research. But should peer groups while evaluating scientists, give so much weightage to this perceived ‘handicap’, so as to virtually tilt the balance against good research done in other parts of the

globe by our own people? In our effort to level the playing field, is it possible that we may have lost sight of our goal (metaphor intended!) and our ability to recognize true talent in the Indian scientist, wherever he may have worked?

Good research is simply good research and no other conditions should be attached to it. We should overcome our collective fears that the ‘handicap factor’ is so significant as to sway an objective assessment of the scientist. If we really feel that we are scientifically in with the best in the world – and I feel that we are, we should discard our old ideas and rise from the shadows of our colonial past.

ASHOK SAHNI

*Centre for Advanced Study in Geology,  
Panjab University,  
Chandigarh 160 014, India  
e-mail: ashok.sahni@gmail.com*