AOGS 2005

Relevance of Palaeobotany in Education and Research in the New Era – The Indian Scenario

NARESH C MEHROTRA

Director, Birbal Sahni Institute of Palaeobotany, Lucknow –226007, INDIA
Email: director@bsip.res.in

The Birbal Sahni Institute of Palaeobotany in India is a nodal center of palaeobotanical research and education. Palaeobotany began as a purely academic pursuit for the study of the past mega and micro plant remains to allow glimpses into the early evolution of life on earth, plant evolution through the geological past and its application to geologic problems related to age determination of rock strata and palaeobiography. Such studies carried out at various education and research centers particularly at BSIP, Lucknow and KD Malviya Institute of Petroleum Exploration, ONGC, Dehradun, helped to buildup a vast data bank. It allowed diversification of research in palaeobotany (including palynology) to closely interact with allied earth science disciplines, such as sedimentology, micropalaeontology, geochemistry, geophysics, oceanography, etc. Integrative multidisciplinary studies emerging out of this interaction have enhanced palaeobotanical knowledge and its application in fossil fuel (oil and coal) exploration and palaeoclimate research. These are the two major areas of global and national importance where palaeobotany (palynology and organic petrology) play a significant role.

The fast growing energy requirement in the oil and natural gas sector and the gap between indigenous production and likely demand require constant striving to enhance hydrocarbon production. Palynological studies including biostratigraphy, biochronostratigraphy, palaeoenvironmental modeling, sequence biostratigraphy and source rock evaluation have proven their application in all the commercially producing sedimentary basins of India: Cambay, Mumbai Offshore, Krishna Godavari, Cauvery and Assam (Mehrotra *et al*., 2002).

In palaeoclimate research, reconstruction of past global climate / environmental changes require retrieval of proxy biotic records from various continental and marine domains. Palaeobotanical entities (tree ring, leaves, stomatal structures, pollen, organic matter, marine phytoplankton) are significant parameters to study global warming and climate change, vegetation dynamics, coastal vegetation, shoreline fluctuations, anthropogenic impacts, and possibly effects of Tsunami in the recent past, being actively pursued at BSIP.

The Institute has taken a leap by closely interacting with various educational centers, offering doctoral research programmes, popular student lecture series, contact courses for professionals, education through museums at different centres and establishing fossil parks for the benefit of both - students and public.

References

[1] N.C. Mehrotra, B.S. Venkatachala, S.N. Swamy and P.N. Kapoor. *Geol. Soc. India,* Memoir **48** (2002).