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Special issue:
Extinct plants, evolution
and Earth's history



Birbal Sahni
centenary, 1991

Intellectual inquisitiveness and quest of truth have always guided the growth and development of science. Professor Birbal Sahni, the architect of palaeobotanical researches in India and the founder of the Birbal Sahni Institute of Palaeobotany in Lucknow, dedicated his life to this cause. He strived all his life to bring palaeobotany into the forefront. He always looked on the brighter side of things in whatever he pursued. He saw the herald of morning and not the glow of sunset in the first flashes from the fissure volcanoes that flared upon the eastern horizon and poured out the molten lava that ultimately formed the Deccan basalts. His wide range of contributions to science is an eye-opener to posterity and signifies the importance of plant-fossil researches. Though a botanist to the core, Sahni never confined himself to artificial compartments. He envisioned rapid expansion of horizons in plant-fossil researches and always strived to strike out new paths and promising ventures. He felt that palaeobotany—the fusion of geophytosciences—must be pursued with deep insight into the geobiological forces at work. He saw the entire geobiosphere as a single entity.

In the preface to his book *Plant Life Through Ages* (Cambridge University Press, 1931) A. C. Seward wrote: 'My aim has been to illustrate *the nature of the documents from which geologists have compiled a history of the earth*, or at least such scraps of history as can be written from the material that is available; to give some account of the *methods employed in the interpretation of the documents*, and to present in language that is not unnecessarily technical summary of the more interesting results obtained from *records of the rocks which throw light on the development of the plant world*.' [italics added]

Extinct plants, their evolution, and Earth's history are inextricably interwoven into the matrix of palaeobotany. It is natural, then, to view palaeobotany as a fragment of the plant and earth sciences. This was also the philosophy of Sahni, whose birth centenary we commemorate with this issue.

No science can be constrained to the limits of its

shell, were it to develop to fullness, and this is true of palaeobotany too. In effect, it has outgrown itself. Emerging areas of plant-fossil research, such as cladistics, taphonomy, community relationships and palaeobiochemistry, are testimony to the growth of palaeobotany. The boundaries between disciplines have disappeared in the search for truth. In this issue, therefore, we also recognize the unity of science.

This issue aims at presenting the many aspects of plant history through articles and papers in diverse areas: palaeoclimate, palaeogeography, taxonomy, ultrastructure, anatomy, morphology, ecology, palynology, biopetrology, biodiagenesis. The extinct have always guided the extant.

The contents of this issue must provide an answer to the questions: What is palaeobotany? Why study extinct plants? And what is so exciting about it? If they do, the purpose would have been served. We also hope the example of Sahni will continue to inspire students in the pursuit of science and not become a mere myth.

Our efforts would not have been fruitful but for the readiness with which the many contributors responded to our invitation. We are grateful to the referees who took pains to read and comment on the papers. We owe much to Dr A. Rajanikanth, Dr Manoj Shukla and Dr G. P. Srivastava for their conscientious efforts. P. C. Roy and Pradeep Mohan helped with photography. Amrita H. P. Singh translated Jawaharlal Nehru's speech from Hindi to English. The pencil sketch of Sahni and the Birbal Sahni Institute of Palaeobotany building are the work of P. K. Bajpai. The colour portrait of Sahni is from an original embroidered sketch on canvas, which is the work of Jaya V. Chala. We are happy to have this for this issue. Secretarial assistance was rendered by S. P. Chadha and Madhukar Arvind. We thank the editorial staff of *Current Science*.

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