

## REVIEW

*GEOPHYTOLOGY* — A JOURNAL OF PALAEOBOTANY AND ALLIED SCIENCES: published by the Palaeobotanical Society, 53, University Road, Lucknow 266007, India. One volume (Two numbers) per year, 1971-1974, Vols. 1-4; Per Vol. Rs. 60.00 or US \$ 10.00.

The journal "*Geophytology*" provides a new outlet for the scientific communications in Botany, Geology, and inter-disciplinary aspects of these and related sciences. The range of subjects of this new periodical includes Palaeobotany, Plant morphology and Taxonomy, Phytogeography, Phylogeny, Archaeobotany, Stratigraphy, Sedimentology, Sedimentary petrology and allied disciplines. 4 volumes of '*Geophytology*' comprising 8 numbers and 837 pages have so far been published, containing 74 research papers. The distributional survey shows that palaeobotany, and palynology have had major coverage.

There have been good contributions in almost each branch of the subjects published, each paper making out some point. For example, the occurrence of occasional Gondwanaland flora in North America is explained by the theory of a Pangaea continent by C. A. Arnold. This paper naturally provokes further interest in the elucidation of plant distribution during the Palaeozoic and Mesozoic periods. Similarly, S. V. Meyen's article deals with parallelism and its significance to the systematics of fossil plants. It concludes, that partly some inherent plant qualities, and only environmental conditions alone are not at the bottom of parallelism. This conclusion is of much significance for the fossil plant taxonomists who always wish to attain a grouping of fossil plants as nearer the natural system as possible.

Certain general studies and reviews on floras and their distribution make a good reading, e.g. the *Glossopteris* flora of India and Angara flora of USSR by K. R. Surange, the development of Early Cretaceous flora in Siberia by V. A. Vakhrameev; review of fossil Peridinales (Dinoflagellates) in regard to their representatives by R. Harland, stratigraphical distribution of dinoflagellates, acritarchs and Tasmanitids in the Jurassic by L. A. Riley and W. A. S.

Sarjeant, palaeo-environmental analysis of Indian Tertiary floras by U. Prakash and evolutions in the plant world by D. I. Axelrod

A large number of papers have appeared in these volumes to provide new data regarding the fossil plant discoveries from various horizons. T. M. Harris has described a *Caytonia* stem with well preserved cuticle from the Middle Jurassic of Yorkshire. This contribution fills up a gap in our knowledge of *Caytonia* to a great extent, and necessitates once again the re-appraisal of the affinities of the group in the light of this finding. V. A. Krassilov has described the morphology and cuticular structure of Jurassic disseminules with puppus, suggesting these presumably Bennettitalean fossil plants were perhaps ancestral to the Compositae in angiosperms. The rate of discovery of new plant fossils can be judged by a number of original contributions on the morpho-taxonomy of new forms published in these volumes of *Geophytology*. Some of the works are: fossil thalloid plant from Permian of China—B. Lundblad, on some new Mesozoic plant fossils from India by M. N. Bose, H. K. Maheshwari, Shyam C. Srivastava, Sukh Dev; new fructifications from Deccan Inter-trappean of India by S. D. Chitale, M. R. Sheikh, E. M. V. Nambudri; Tertiary seeds from Malaya by B. S. Trivedi and S. K. Chaturvedi. In the articles on Palynology and Palynostratigraphy, palynological analysis of Bhima basin and Kaladgi basin sediments by Venkatachala and Rawat have suggested a Late Cambrian age for the former and Upper Precambrian to Lower Cambrian age for the latter. Similarly in Ganga Valley, the Vindhyan are dated palynologically as Late Precambrian in age. These studies indicate that palynology can help in solving the intricate problem of the age determination for the Vindhyan and older rocks.

A number of papers have been published on the Gondwana palynology and palynostratigraphy (M. N. Bose, D. C. Bhara-waj, G. K. B. Navale, Anand-Prakash, S. C. Srivastava, R. S. Tiwari, K. M. Lele, R. Makada, A. K. Srivastava, H. K. Maheshwari, K. P. Jain and J. Taugour-

deau-Lantz). Addition to palynological data from Talchir Stage, type areas of Karharbari and Barakar Stage of the Lower Gondwanas and from Mesozoic deposits is valuable. These works fill the gaps in our existing knowledge about palynostratigraphy of Indian Gondwana deposits. From late Cenozoic of Congo a megaspore probably belonging to an extinct water fern, closely related to *Salvinia*, is an interesting discovery. Similarly the stratigraphic range of *Dandotiaspora*, a genus of trilete spores in the Lower Eocene of India by S. C. D. Sah, R. K. Kar and R. Y. Singh, provides significant distributional data about a single dispersed miospore genus through a Formation.

The morphology of spores in *Ophioglossum*, *Botrychium* and *Helminthostachys* has been described by D. D. Pant and P. K. Khare. Other contributions on the recent pollen are by Vishnu-Mittre, R. D. Roberts, H. P. Gupta and Chhaya Sharma on different aspects of palynology.

Vishnu-Mittre, U. Prakash and N. Awasthi have published on plant remains from archaeological excavations.

Papers on living botany include those by A. R. Rao and M. Sharma on sclereids in Gymnosperms, gametophytes of *Ophioglossum* by Pant and Khare. Bryophytes have been also represented by the contributions of D. C. Bharadwaj on *Folioceros* a new genus of Anthocerotales, and by Ram Udar and S. C. Srivastava on *Cyathodium*. Similarly studies on Lichens and Algae have been included by D. D. Awasthi and

K. P. Singh, M. S. Balkrishnan and M. Bondre (*Née Gole*).

Among the geological contributions, papers on Stratigraphical Geology by R. P. Sharma, K. S. Pandey, D. C. Bharadwaj and Anand-Prakash, Petrography by S. K. Babu and M. K. Bharadwaj, T. K. Ghosh, G. K. B. Navale, on Minerology by I. B. Singh and K. K. Sharma, on Sedimentology by R. C. Misra and A. R. Bhattacharya and I. B. Singh, on Palaeontology by K. K. Tandon, S. N. Singh, N. K. Choudhary, P. Kalia, K. S. Soodan, T. S. Mahabale and D. R. Mahajan, R. K. Banerjee are useful.

The Journal has a very wide scope containing articles on various aspects of Geology and Botany in relation to Palaeobotany. Such an interdisciplinary approach is conducive to the proper appreciation of the various branches by specialists, who otherwise scarcely get opportunity to profit by the knowledge of allied parameters.

It is satisfactory to note that the time-target of publication has been adhered to; and it is heartening to note that in these days of "Paper and Press Crises" this journal is being issued nicely and punctually. The half-tone plates are well done, but the Text-figures need improvement.

The *Geophytology*, thus, fulfils a long standing need of a journal catering both to Earth and Plant Sciences; and the Palaeobotanical Society of India deserves not only support but also compliments for it.

M.A.C.S. Poona-4

(T. S. MAHABALE)

