

BOOK REVIEWS

amyloid deposits. Pharmacological intervention in the disease process is being attempted at various points along the amyloidogenic pathway, and may have the potential of being used to slow down the gradual accumulation of amyloid deposits that accompanies normal aging of the human brain

This volume of the *Annual Review of Cell Biology* truly 'unifies a diverse and rapidly expanding field'. The reviews are selective and critical in format rather than exhaustive. An essential book for all researchers in cell biology.

VEENA K. PARNAIK

*Centre for Cellular & Molecular Biology
Hyderabad 500 007, India*

Environment and Adaptive Biology of Plants. Professor David N. Sen Commemoration Volume. D. D. Chawan, ed. Scientific Publishers, 5A, New Pali Road, Jodhpur 342 001, India. 1995. Price: Not known. 322 pp.

Environment and adaptive biology of plants is one of the topics of past, present and future scientific interest. Much of the progress we have made in crop selection and breeding have stemmed from basic understanding of plant adaptation to environmental conditions. The success of introduced agricultural, horticultural and timber plants all over the world, ever since humans began transporting them, has also been a result of our knowledge of plant adaptability to different environment.

Current interests in plant adaptive biology worldwide are in the areas of (1) *in situ* protection and management of en-

dangered plants, (2) sustaining productivity in crop plants, (3) identifying locally evolved resistance to pests, diseases and other environmental stresses, (4) reclamation and revegetation of degraded landscapes and (5) management of increasing salt and water stresses in coastal and semi-arid zones.

Considerable progress has been made in the above fields of environmental science both in India and abroad. Our knowledge of dioecious plants (especially in the genus *Garcinia*) being capable of reproducing apomictically on isolation is helpful in the management of threatened species. Case studies of such plants shed light on survival strategies that isolated plants adopt at the expense of genetic variability. Land races that are locally adapted are in much demand today for crop improvement and sustainable agriculture. Most recent interest has been in understanding the mechanisms plants have adopted in dealing with salt stress. Of special importance in this regard are the estuarine plants, commonly referred to as mangroves. Mangrove plants in the genus *Rhizophora* are known to localize the salt in the root zone itself. These plants, which are also capable of withstanding flooded conditions, can be the answer to ecological problems that might arise in the event of the anticipated sea level rise. Research on the physiology and genetics of mangrove plants is under way, especially in an effort to identify 'plus' trees (supertrees which can withstand considerable amounts of environmental stress). A major programme in this field of interest has been on at the M. S. Swaminathan Research Foundation, sponsored by the Department of Biotechnology, Government of India.

The book under review is the most unusual blend of biography, science, documentation and advertisement. The book is divided into six parts, viz., (1)

Ecology and environment management, (2) Adaptive biology, (3) Biology of saline plants, (4) Weed biology, weed management and allelopathy, (5) Desertification and agroforestry and (6) Environmental pollution. Two to five papers have been included under each of these major parts. These papers vary in style from being introductory to highly structured experiments and results, making reading rather uncomfortable. Papers have not been appropriately grouped. For instance, Part 1 includes an ethnobotanical document which merely lists plants used by natives in the Narmada valley. Similarly, in Part 4, one paper provides a detailed list of weeds associated with crop fields of Madhya Pradesh without any reference to management.

The strength of this book, however, rests in Part 3, which discusses a topic of current scientific interest. It appropriately includes papers on mangrove plants and those in salt-prone deserts of India. Although the discussions fall short of being comprehensive, the papers are more in tune with the broad title of the book than the rest.

The book, in general, fails to address current issues relating to the environment and adaptive biology of plants. All detailed discussions included have emerged from laboratory studies paying little attention to field conditions. Most papers are not even state-of-the-art treatises of the concerned science, not even of that in India. To a serious student of plant adaptive biology, the book can well prove disappointing.

R. J. RANJIT DANIELS

*M. S. Swaminathan Research Foundation
3rd Cross Street
Taramani Institutional Area
Madras 600 113, India*