

Groves, R.H. (ed.): **Australian Vegetation**, 2nd Edition. - Cambridge University Press, Cambridge, 1994. 562 pp. ISBN 0-521-414520-2.

James Cook's Botany Bay is no more the only gate used by botanists intending to study the botanical diversity of Australia. In the current period of easier transport, many biologists and naturalists enter this diversified continent in order to get first-hand experience of exotic landscapes and enormous biodiversity which so much differ from nature encountered in the Old and New World. Also, a wide audience of teachers and graduate students becomes particularly stimulated by botanical literature describing the sometimes-bizarre life forms and unique ecosystems which keep evoking the challenge of cause-and-effect principle in biology. After the pioneer work of earlier expatriate taxonomists, in recent decades, the resident Australian scholars perform a broad ecological and ecophysiological research which describes many remarkable features of terrestrial plants and their environmental relationships.

Geographical pattern and long isolation of Australia resulted in independent evolution and produced a diversified flora. Plant species and vegetation structure are ecophysiological consequences of these long environmental and evolutionary events. Evolutionary history and particular ecological adaptations are best reflected in the microevolution and life strategies of the *Eucalyptus* genus. So far, there are about 500 generally accepted species of these woody plants, however, about three hundred species are still expected to be identified by more refined taxonomical and genetical methods. Australian vascular plants, generally, stimulate fruitful research into the population dynamics, succession, effects of drought, nutrient cycling, impact of fire, degradation by pastoralism, invasion of alien species, etc.

Part One of the book contains introductory chapters explaining the Quaternary vegetation history of Australia, the biogeographical relationships and important role of alien plant species imported by humans. In the 10 chapters of Part Two, the dominant biomes of this continent are treated in terms of their geographical distribution, climatic and soil affinities, growth habit and adaptive traits of key species, effects of disturbance in woodland systems, overgrazing in grasslands, reaction to fire, management, conservation status, etc. The enormous variety of closed-canopy forests, woodlands, shrublands, heathlands and grasslands is well illustrated by numerous figures and tables, and documented by abundant references to regional botanical and ecological literature. The survey of different kinds of rain forests along the eastern coast is a remarkable contribution to world's biogeography. Also, differentiation of various *Acacia* and *Eucalyptus* woodlands brings about original approaches. Part Three consists of chapters describing saltmarsh and mangrove wetlands, inland aquatic vegetation, alpine ecosystems and biomes coastal dune. Experimental botanist will particularly welcome the recurrent references to anatomical and behavioral characteristics of plants coping with the extreme environment of the semideserts, saltmarshes, and alpine tundra. In Australian plants, structure and function of leaves, roots, lignotubers, flowers and fruits display a number of unique manifestations which respond to ecological zonation and biotic interactions. Pollination, seed dispersal, germination, mortality in populations, and production of economically important species are also discussed. A considerable amount of information refers to the biology of C₄ and C₃ grasses in natural and derived grasslands. Various topics of biodiversity, conservation and management are contained in Part Four; the authors estimate that of the 20 000 native Australian plant species about 17 % are rare or threatened species.

Already in its second edition, this concise book successfully summarizes the authentic botanical knowledge of Australian plant life and thus deserves to be included in the libraries of institutions and individual scholars taking part in overseas biological studies and training

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