

Foreword

At a time when the world's plant biodiversity and ecosystems are being destroyed at alarming rates, it is most appropriate – and highly desirable – that plant biologists in Australia are devoting time and resources to preserving through seedbanking the species richness of that part of Gondwana. While seedbanking will not conserve ecosystems, it will at least conserve biodiversity, and thus genetic diversity, *ex situ*.

This book is about the biology, collection, storage and use in conservation and restoration of seeds of native Australian species, with emphasis on those that occur in Western Australia. The authors represent a wide range of expertise on the various basic and applied aspects of seed biology it covers.

The core of *Australian Seeds* contains much useful advice about seed collecting tools, equipment and procedures; how to determine the right time to collect seeds; sampling strategies; collecting seeds of rare species; and how to keep good records about seed collections. It also contains much well thought-out, and thus very good, advice on handling of seeds in the field prior to return to the storage facility and on drying and cleaning seeds after returning from the field, including an overview of equipment needed in processing of seeds; seed-cleaning tips for the 'unusual' genera *Banksia* and *Dryandra* (Proteaceae); and how to assess and prevent or minimise damage to seeds by pests and diseases. There is also a lucid presentation about laboratory storage of seeds and of testing them for purity, moisture content, viability and germination.

There are many photographs that complement nicely the subject matter discussed in the text. Guidelines for collecting seeds of species of the common Australian families Amaranthaceae, Asteraceae, Fabaceae, Mimosaceae and Myrtaceae, and of more than 260 selected genera in these and other families are covered in a separate chapter.

In chapter 9, the excellent photographs of seeds of more than 1200 native Australian species illustrate the diversity and beauty of Australian seeds. These photographs also can be used as a 'visual guide' for identifying the species that produced the seeds. This chapter in itself

is a major photographic contribution to the diversity and beauty of seeds.

In contrast to the detailed advice on how to collect, process and store seeds of Australian plants, *Australian Seeds* contains very little information on how to germinate them. Although studies have been done on dormancy and germination of seeds of many Australian species, no attempt has yet been made to organise the data and fit them into a dormancy classification scheme to infer, either from taxonomic relationships or from results of studies on dormancy and germination of a taxonomic group, what kind of dormancy may be present in seeds of species for which information is not available. Thus, we suggest that the next step in enhancing knowledge about the biology and technology of seeds of Australian plants should be an attempt to classify them with respect to kind of dormancy. This may not be as difficult as it at first might seem to be. For example, seeds of most species of Asteraceae, Myrtaceae and Poaceae are likely to have (non-deep) physiological dormancy (and some perhaps no dormancy at all) and those of Fabaceae and Mimosaceae physical dormancy (i.e. water-impermeable seed or fruit coat).

Australian Seeds is an excellent contribution to plant conservation and restoration in Australia, and the editors and all the contributors are to be congratulated for making the information available in a single volume. Although the book is about seeds of Australian species, it will be of considerable interest and use to people involved in seedbanking and/or plant conservation and restoration worldwide. Also, it will be greatly appreciated and enjoyed by people who are fascinated by the beauty and diversity of seeds.

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