WE ARE A NATION of gardeners, and we take pleasure in tending our backyards. But this pleasure sits uneasily with our knowledge that the places where most of us live are running out of water. We suspect that our lawns and many of our European plants are too demanding of scarce supplies, but can't imagine our streets and gardens without them.

The Old Country opens our eyes, and minds, to other possibilities. It does so by telling us stories about our natural landscape. We discover how much of our history has been tied up with plant exploration, from William Dampier's first forays at Shark Bay in Western Australia to the amazing recent discovery in the Blue Mountains of the Wollemi Pine, representing a whole new genus. We learn about the statuesque boab of the Kimberley and its interesting relations, and the allure the banksia family holds for artists.

George Seddon believes that the better we understand the delicacy and beauty of our natural environment, the more 'at home' we will feel as Australians. He explores garden design, and wonders whether the present trend to Mediterranean plants creates more problems than it solves. He looks at what 'native' or 'exotic' or even 'a weed' might mean, and concludes that these notions are surprisingly fluid.

This passionate, wise and witty book, enriched with breathtakingly beautiful illustrations, suggests that the answers to our water problems lie here, at home.

GEORGE SEDDON AM is Emeritus Professor of Environmental Science at the University of Melbourne and a Senior Research Associate at the University of Western Australia. He has held chairs in four disciplines and taught in universities across Europe and North America. His recent books include *Landprints: Reflections on Place and Landscape* (Cambridge University Press, 1996).

The OLD COUNTRY

Australian Landscapes, Plants and People

GEORGE SEDDON

With photographs by Colin Totterdell

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Fremantle Ports, which is strongly committed to caring for the environment, has provided support for this book, as have the three major southern-city botanic gardens: Kings Park in Perth, the Adelaide Botanic Garden, and the Royal Botanic Gardens Melbourne to mark the opening in 2006 of the first eleven hectares of the Australian Garden at the Royal Botanic Gardens Cranbourne, a new garden celebrating Australia's remarkable plant life and landscapes. Their support is acknowledged with pleasure and thanks.

Another contributor is Melbourne Water, which is acutely aware of our need to make better use of a resource we have taken too much for granted in Australia. There are three private donors, all of them well known for their history of support for better environmental planning: the Norman Wettenhall Estate, Jan Schapper and, finally, Dame Elisabeth Murdoch. The help of all the above is a vote of confidence, not so much in this book as in the aims to which it is directed. The last-named has contributed so much to Australia, in so many ways, that this book is dedicated to her, as my small tribute.

The source or author of the images in this book is indicated both in the List of Illustrations and/or with each image as it occurs in the text. I would like to thank all the many generous contributors for what in my view is the best part of the book, and to acknowledge sources in general terms.

Most of the photographic images come from the archives of my friend Colin Totterdell. He is one of the world's great photographers of landscape and flora, the equal of men like Ansell Adams in America and Olegas Truchanas in Tasmania, but he has rarely received due recognition. Other photographic images come from

Jock Clough, Simon Griffiths, John Hanrahan, Stephen Hopper, Michal Lewi, Brian and Diana Snape, and Pamla Toler. A few are from my own collection.

The non-photographic images are also diverse in origin, and it has been a privilege to be permitted to use them. They include fine line-drawings by David Hutchison, and the lovely rendering of *Banksia ashbyi* by Celia Rosser, for which I owe thanks both to her and to Monash University. The non-photographic Dampier illustrations and most of the *Banksia* illustrations are taken from rare books in the special collections of the Reid Library of the University of Western Australia. Catherine Clark took a great deal of trouble to locate what I needed and to arrange for these fragile pages, which date from 1781 to 1830, to be photographed by Dennis Sarson of the University Photographic Unit. The image of what turns out to be *Banksia baxteri* from Curtis's *Botanical Magazine* was made available to me through the courtesy of the library of the Botanic Gardens and State Herbarium of South Australia. The watercolour by Stanley Tapp of Sturt's desert pea is reproduced by courtesy of the Art Gallery of Western Australia. With only two exceptions, all this illustrative material was made available for reproduction without cost, a remarkable act of generosity.

I owe thanks for permission to quote several passages from Stephen Hopper et al. in the Introduction and Chapter 4; from Michael Hough in Chapter 9; and a long passage by Michael Frith in the Introduction.

A few readers may identify occasional 'self-quotation', words I have used before, but as these are modified and fitted to a new context, I hope they will be tolerated.

Finally, there are authors from whom I have not quoted at length, but on whom I have drawn heavily for data and understanding. Their work is, of course, listed in text and endmatter, but I would like to record the major sources again, here: David Baum, Wilfrid Blunt and T. William Stearn, Alex George, Lionel Gilbert, Sylvia Hallam, Diana Snape and Paul Wilson.

Drafts of this book have been read critically by friends, of whom Basil Balme has been outstanding: he has read every word. Other helpful readers include my wife, Marli Wallace, Stephen Forbes, Alex George, Stephen Hopper, Andrew Saniga and Paul Wilson of the State Herbarium of Western Australia, who has tried to steer me around the worst pitfalls of changing botanical nomenclature. None

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I would also like to thank the staff of Cambridge University Press, who have been a delight to work with, especially the Commissioning Editor, Kim Armitage. On behalf of the press, she commissioned one book that was to be co-authored, and got another with one author. The final text has a broader focus than originally intended and a different title. It is longer and more fully illustrated than the original intention, yet has been accepted with good grace. Such editorial indulgence is an author's dream.

Old men forget. I will have failed to list all those who have helped me along the way to this, my last and final book. Please, all of you, accept my sincere thanks.

GEORGE SEDDON

PREFACE

'THE OLD COUNTRY' for my mother, Australian born, was Britain, as for most of her generation, although she had never set foot on its sacred soil. Neither had she ever been Home, although she first left it (in central Queensland) at the age of twenty-three to be married, and returned to it often.

For my generation, Australia is the old country. Many of our landscapes are old. Although they have undergone countless cycles of weathering, they have not experienced the cataclysms of mountain building resulting in the Rockies and the Sierras that transformed the 'New World' and the Alps in the 'Old World' (thus made new). Massive glaciations later scoured both continents in the Ice Age, wiping the slate clean, a new beginning for plants and man.

Our last comparable Ice Age was in the Permian, not one million but more than two hundred million years ago, when most of the western third of the continent was scoured and scored, the striations sometimes still to be seen in the ancient granites and gneisses of the Darling Plateau near sunny Perth.

Geology is a continuum so, like every other land-mass, Australia has rocks of all ages from the Archaeozoic – almost the beginning of earth-time – to the present, including comparatively recent volcanic activity in Victoria and the drowning of a substantial fringe of coastal land when the seas rose with the melting of Pleistocene ice some 10 000 years ago. There are old rocks in every continent, but the Precambrian in Australia is exposed over a large area, and well studied, largely because of its mineral riches.

As a political entity, Australia is a very young country. A few years ago there was a rhetoric to go with it: we have the virility of the young, unlike the effete Europeans (other than, of course, the British, our immediate antecedents, whose virility is eternal). Now, of course, the tenses change. They change in the United States, whose youth is/was 'one of its hoariest traditions' (according to Oscar Wilde). They change in Australia, and in Britain. Old Father Thames may keep rolling along (into the mighty sea), but the North Sea is a drop in the ocean, and young Father T hasn't been rolling into it for long, either. Some Australian rivers have been following much the same

course for much longer, but we do not have enough words for degrees of 'old'. 'Ancient' belongs to B-grade fiction. 'Immemorial' sounds promising, but since nearly all of geological history is beyond the reach of human memory (i.e. is immemorial) it is of little help in discriminating degrees of 'old'.

Stromatolites at Hamelin Pool, Shark Bay, WA, in the intertidal zone, exposed (*above*) and submerged (*below*). They are several thousand years old. *photo: John Hanrahan*

Fossil stromatolites exposed to the south of Marble Bar, WA, have been dated at 3.5 billion years BP. In this case, the past lies at the author's feet. *photo: George Seddon*

There is a rough dirt track leading south from the road from Port Hedland to Marble Bar in north-western Australia that leads to an old mine site. Nearby, there are several outcrops of fossil stromatolites and they are among the oldest known evidence of living organisms. The stromatolites are in the Warrawoona Group, which are mostly volcanic lavas, but with some layers of sediment accumulated in shallow seas. Beneath these rocks, there is an angular unconformity or ancient erosion surface (a page missing in the local journal of events); the eroded rocks have been dated to 3.515 billion years. For erosion to take place, they had to be at the earth's surface. This is the first reliably dated evidence of a stable crust. The world was beginning to assume its present form, so we are watching the curtain go up. It must have gone up elsewhere, but this is the first record, first by over half a billion years, in the East Pilbara. Now *that's* old.

The English language has begun to adapt to the physical circumstance of Australia, especially in water words. 'Henley on Todd' is a brilliantly ironic conjunction. 'Creek' is not a salt-water inlet on the Scottish coast, but a water-made channel, often dry. To say that 'the creek's running' is incomprehensible in British English. Here, it means that there is moving water in it (for a change!). We have not yet been so inventive with degrees of old, although we need them more than Europe or North America

There are also ways, however – perhaps surprising to some – in which Australia is physically young. It is, arguably, the youngest of the continents along with Antarctica, from which it had broken entirely free as a new and independent continent only by the Eocene, some sixty million years ago It is also very young latitudinally, which is to say that it has only just arrived at its present latitude and is still on the move. David Williamson once wrote a clever play called *Travelling North*, a title that could serve for our continent, and only for this one. The other continents have also rifted apart by changing longitude – by drifting sideways, if you like – but Australia is the only continent that has moved almost from pole to equator.

Evolution, like geological processes, is a continuum, but it moves by fits and starts in response to local circumstance. Both the history of the Australian flora itself and of our varying awareness of it illustrate the many complexities in the application of words like 'new' and 'old', words whose apparent simplicity is a chimera, a will-o'-the-wisp dancing across a land not well understood.

Many of our plants have come from the south with the land-mass that carried them slowly north and, before that, from east and west before the first rents in the Gondwanan fabric. By contrast, the human species has always come from the north or north-west, first by island-hopping from the Indonesian archipelago, much more recently from Europe, much further to the north and west, and more recently still, from the nearer north in Asia.

In the northern hemisphere, the patterns of migration have been quite different, and from all points of the compass. People moved into Europe from Africa, much later all over the Mediterranean world as the Greeks and then the Romans moved out from their centres; still later from the north with Anglo-Saxons and Vikings; west from Asia across the Bering Straits to North America, and further south into South America. These mass movements of human populations continue today as Eastern Europe, northern Africa and

the Middle East all decant their people into Western Europe. The endless movements of people are driven by a multitude of imperatives, but underlying them is the simple point that the geography of the northern hemisphere makes it possible.

The Australian continent tells a dramatically different story. There has been no invasion from the south other than a few penguins, and minimal additions from east and west in our own hemisphere. People have come from the north to a continent that has come from the south, with a physical history that is nothing like that of any of their homelands – not the Indonesian archipelago, not Britain, Ireland, southern Europe, not southern China nor India nor Vietnam. Its bio-rhythms are remote from those of any of the lands to the north, and they have been hard to learn. We live in old landscapes with limited water and soils of low fertility, yet with a rich flora that is adapted to those conditions, as we are not. There is much to learn from it, but we have been slow learners.

A definitive history of the use of indigenous plants ('Australian natives') in our gardens has not yet been written. It is, to be sure, not attempted here. The story is one of progress, but also of stops and starts, dead ends and new beginnings that led nowhere. To comprehend the pattern of events, one needs an understanding of physical constraints such as the early need for food and shelter, for living with limited water supplies, then abundant water, now again restricted and likely to remain so. Other keys to understanding are cultural predilections and echoes (the rapid propagation of the Norfolk Island pine, with its symmetrical branches on which it was easy to hang northern European dreams); the erratic eruptions of fashion (the planting of lemon-scented gums in inner-city frontyards); and the mistaken and short-lived belief that if you planted 'natives', you did not have to look after them. Underlying these considerations is the fact that we are now essentially a suburban culture in large urban conglomerations that themselves have had a brief history.

While I explore some of these key themes in *The Old Country: Australian Landscapes, Plants and People*, I also venture beyond gardening to tell stories about our flora, to show not only its delicacy and beauty, but also how much of our history has been tied up with plant exploration and with the collectors and their motives; and how, finally, awareness of this flora and its history can help us all to become better Australians.

APOLOGIA

This book offers no more than illustrative examples of the uses and abuses of the Australian flora. For example, design with Australian plants is illustrated through the work of three pioneers (Edna Walling, Ellis Stones and Oliver Dowell), but there are many more, like John Oldham, Gordon Ford, Grace Fraser and the remarkable enterprise at Monash University begun by Jock Marshall.

There have been many writers about the use of the Australian flora, from Thistle Y. Harris to Diana Snape, and their work, too, should be a part of a comprehensive history. Paintings of the land and its flora are discussed at length here only in relation to banksias, by using the work of some major botanical artists; the complementary art of photography is not discussed, although it is used throughout the book.

The list of what I have not attempted could go on. These illustrative samples, moreover, are restricted to what I know at first hand, so some parts of the land are under-represented. So be it.

There is, however, a secondary theme to these exploratory essays. It is a preoccupation with language, at two levels. The first is that the words we use both reflect and affect the way we conceptualise the world around us, and this has heightened importance in Australia, a land so unlike that in which our language evolved. The second is that of the continuing struggle to establish a botanical nomenclature that reflects phylogenetic patterns.

A NOTE ON THE NAMING OF PLANTS

Botanical nomenclature is a cross that anyone writing about plants has to bear. For an Australian, it is a heavy one, because the flora is huge and so little of it is well known. Jarrah (*Eucalyptus marginata*) and river red gum (*E. camaldulensis*) are so well known by their popular names that the scientific ones seem hardly needed – but 'peppermint' in Western Australia refers to *Agonis flexuosa*, whereas in the eastern states it is any one of several eucalypts (*E. dives, E. piperita, E. elata* and more).

To avoid misunderstanding, there is no escape from botanical terminology, and the level of botanical literacy in Australia is high,

but there are many intelligent, well-read thoughtful Australians who find it an irritant. To them I offer sympathy and advice: skip the scientific names and look at the photographic images, which communicate much better than words.

Even for the botanically literate, the scientific names, although inescapable, are an irritant. They are in flux, for three reasons. The rule of priority means that the first scientific name validly bestowed has priority over later names given by plant collectors who gave a name without knowledge of an existing one. When earlier valid names turn up, they must take precedence over what have often become familiar ones. *Calocephalus brownii*, for example, was known to gardeners for years: it is an attractively coralline white-grey shrub of the sea-side dunes, and its Greek name means 'beautiful head', which is appropriate. Now it has to be called *Leucophyta brownii* because it is a valid prior name, but it is a dull one, meaning 'white plant' – it is also harder to remember, at least for me.

The second reason is that botanical research often shows that a plant assigned to a given genus or species is sufficiently different to warrant a new name. The genus *Calandrinia* illustrates both these cases. The generic name was originally applied to species from both South America and Australia, but when it was found that the two groups differ enough to warrant two names, South America had prior claim to *Calandrinia*; and the Australian genus was called *Parakeelya*, an Aboriginal name. No sooner had this been proposed than it was discovered that the genus had been validly named as *Rumicastrum*, which had priority.

The third reason for instability is that we are witnessing the birth of a new pathway to taxonomic understanding, that of molecular phylogenetics, using new tools, no longer depending on the naked eye and simple microscope. Genetic relationships can now be traced with confidence. The outcome will be a substantial rewriting of the textbook – *Banksia* and *Dryandra* will be merged, *Acacia* will be split, as *Eucalyptus* and *Corymbia* have already been split, the latter much closer to *Angophora* than to *Eucalyptus*. There is much more to come, since this is very much 'work in progress', and necessarily incomplete. It should in time make taxonomy far more precise. In the meantime, we live with change.