

A close-up photograph of a green plant stem. The stem is vertical and has a slightly textured, yellowish-green surface. A small branch with several green, lanceolate leaves extends from the stem to the right. A yellowish, fibrous, and somewhat irregular structure is attached to the stem, appearing to be a remnant of a previous branch or a specialized growth. The background is solid black.

GROWING RARE PLANTS

a practical handbook on
propagating the threatened plants
of southern Africa



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Preface

I understand the reluctance that grabs hold of you when you are faced with the daunting task of writing about something that has already been written about repeatedly. How do you present this as something new, worthwhile, of any relevance whatsoever? Plant propagation has been the subject of different publications, so why am I also joining the cause? I do believe that there is room for a book which is a personal account of different, highly knowledgeable individuals with first hand experience, willing to share it with other, interested propagators. This is really what this book is about—sharing knowledge gained through years of experience, in the hope that our threatened plants will ultimately have a chance at survival.

In my preparation, I trawled through literature for propagation and cultivation information, and came across articles that inspired me as a student and contributed in shaping my way of thinking. I have included these references, should you be interested to follow them up.

A large percentage of the literature I looked at relates to the northern hemisphere climates and tends to be far too detailed for the resources that are generally available in southern Africa. It is still important to read extensively, as an observation made often turns out to be a gem, putting you on track to the successful cultivation of a plant.

I consider MacMillan's *Tropical Planting and Gardening*, and Hartmann & Kester's *Plant Propagation Principles and Practices* my bibles. They contain a wealth of information that I have since childhood found extremely helpful. The first is a practical guide on methods of propagation, while the second is a more detailed, academic approach to propagation. A third book that I find useful was

printed in the early 1980s and is titled *People's Workbook*. It has since been revised and gives excellent, yet simple and practical, advice on growing crops. A fourth book that I could recommend is the *Guide to Handling of Tropical and Subtropical Forest Seed*, written by Lars Schmidt.

A lot has been published on the taxonomy, ecology, and physiology of plants. Very little, however, has been written on growing southern African species. *Growing Rare Plants: a Practical Handbook on Propagating the Threatened Plants of Southern Africa* should be viewed as a stepping-stone to different ways of plant propagation. The aim is to introduce readers to ways and means, experimented with by other people, that would assist them in this task.

This book is offered as a point to start from for the next generation of propagators. The task ahead becomes more difficult to accomplish, because of habitat destruction in one form or another. At the same time, legislation concerning plant collecting has become stricter. In my experience, plants that belong to endangered taxa have decreased visibly. All these facts make the task more urgent, leaving less room for mistakes. Fortunately, we do have the advantage of technology, which enables us to store plants or their propagules for longer periods.

Research also has an important role to play—ten years ago, people knew about some of the effects of smoke on seed germination, and thanks to research, we now know a great deal more. We are able to use the information to speed up the germination process of many Fynbos plant species, and I would go as far as saying that the seed of grassland plant species would also benefit from this pre-germination treatment. With this knowledge, we could help ensure the survival of southern Africa's flora.

Introduction

There is no magic involved in growing plants! “Green fingers”, or a so-called “feel” for growing plants successfully, is all about having a passion for plants. The process of plant propagation and cultivation is about experimenting with different methods to find the most effective way of growing a certain plant. It is about obtaining knowledge from experienced growers and, finally, it is about adapting newly gained knowledge to suit particular conditions and climates. The best propagators are people who have spent time in the field observing plants.

These people have a good understanding of plant types and families, and how plants are integrated in a specific habitat. Many threatened plants are simple to grow, given that the rules by which they live are understood and followed. It is important to do this kind of homework before plants are removed and exposed to unsuitable conditions. Very often, natural regeneration of these plants is hampered by a shrinking habitat and threshold of numbers. Some of these species are *Moraea loubseri*, *Gladiolus aureus*, *Haworthia limifolia*, *Siphonochilus aethiopicus*, *Warburgia salutaris*, *Ocotea bullata*, and *Prunus africana*.

The amount of attention given to certain families is interesting. The Orchid family is a good example. These plants are notoriously difficult to grow, em-

phasising the need for further research. While epiphytic orchids have proven relatively simple to maintain in cultivation, the same could not be said of terrestrial orchids. I have enlisted the help of local orchid growers and collectors to help demystify the group. In a complicated case like this, procuring your information from as many places and people as possible is very important. See yourself as a detective on a mission to find evidence that would shed some light on a case, in this instance, the propagation of a specific plant.

Where possible, I give detailed examples of species have been grown successfully. The Wild Ginger (*Siphonochilus aethiopicus*) is used as the main example in the Zingiberaceae family, carrying with it an interesting story, as well as valuable tips. To propagate this plant, we employed a set of methods, covering all eventualities, and came up with a successful conclusion.

Tissue culture and seedbank methodologies are mentioned, but not discussed in detail. Both are covered in other texts and require advanced technology. Should curators feel that it is possible to do tissue culture, institutions such as Kirstenbosch, the University of Natal (Pietermaritzburg campus), or the eThekweni (Durban) Parks Department would be happy to assist.