

- 7) Plant physiology and molecular biology: the plant cell wall, signal transduction elements, abiotic stress adaptation strategies, mechanisms for plant tolerance to heavy metals and accumulation.

Plant biotechnology and more pertinently transgenic technology are surrounded by public mistrust as well as an expectation for natural plant products. Implementation of recombinant DNA technology has helped in the understanding of various biosynthetic pathways in addition to applications of novel plant products. This book's variety of topics and emphasis on the latest developments of transgenic plants has helped to transcend their role of controversy to one of real use. The fresh presentation of the uses and applications (present and future) of transgenic plants makes this book useful to students or to senior researchers in any of the fields mentioned above.

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The Complete Grower's Guide to Carnivorous Plants, Barry A. Rice, Briza Publications CC, Pretoria, South Africa (2006), (Also published in North America by Timber Press as Growing Carnivorous Plants, and in Australia by Reader's Digest as The Complete Grower's Guide to Carnivorous Plants), more than 300 colour plates, 5 line drawings, 23 tables, Price: R349.95, ISBN 0881928070, 224 pages, E-mail: books@briza.co.za

Traditionally we have viewed plants as passive organisms with roots firmly anchored in the soil absorbing water and nutrients and with green leaves extended to the sun and atmosphere. So it comes as a bit of a shock to realise that certain plants have shrugged off this passive role and behave more like fierce, predatory animals in actively deceiving and capturing prey. To achieve this they use an elaborate set of modifications to their leaves and other organs ranging from elegant funnels that function as pitfall traps to tooth-lined jaws that snap shut with the speed and deadliness of a bear trap.

Ever since Charles Darwin published his book *Insectivorous Plants* back in 1875, in which he recognised that certain plants capture and digest the soft tissue of prey as a form of supplemental nutrition, these plants have delighted and intrigued generations of plant lovers and budding scientists alike — and let's face it, no more fascinating plant exists today than the indomitable Venus Flytrap with its formidably toothed jaws that snap shut on unwary

prey in the blink of an eye. Darwin spent considerable time doing painstaking experiments in an effort to prove beyond a doubt the carnivorous nature of this group of plants.

Since then many more species of plants that capture prey in one form or another have been discovered in very exotic locations, e.g. the genus *Heliamphora* on the Venezuelan *tepuis* in South America, and much research is still to be done in an effort to fully understand the carnivorous plant syndrome. Many of these plants are under great threat due to habitat destruction and the race is on to recognise and protect newly discovered and rare species in specialized habitats that are rapidly being obliterated by climate change and the depredations of man.

Twenty two richly illustrated chapters in three sections offer a veritable feast of facts and figures to the lover of carnivorous plants and cover a wide range of subjects including a description of virtually every carnivorous plant in cultivation and of a number of plants which have yet to be proved to be carnivorous — even the infamous “Audrey II”, a flesh-eating monster from the *Little Shop of Horrors* finds a place between the covers of this book!

Section I of the book covers the “nature” of carnivorous plants and the three chapters are titled: “Our Fascination with Botanical Monsters”, “Some Natural History” and “Murderous Methods”.

Section II is titled: “The Botanical Bestiary” and is divided into fourteen chapters dealing with carnivorous plants in cultivation with the final chapter being dedicated to “Other Carnivores and Noteworthy Plants”. This is probably the most useful part of the book as here each plant is described in detail including trapping mechanisms used, digestion methods, native ranges and cultivation guidelines.

Section III covers the “hands on” aspects of carnivorous plant cultivation and conservation including the “golden rules” to successful cultivation methods, media composition and pest control.

This book is a bit of a surprise, the title simply states that it is a “complete grower's guide” to carnivorous plants and this in itself is a little misleading as this book has considerably more to offer than just that. The author has spent a considerable amount of time studying, growing and photographing carnivorous plants in cultivation and in their natural habitats and is a well known lecturer and author on the subject of cultivation and conservation. He is the present editor of the Carnivorous Plant Newsletter, published by the International Carnivorous Plant Society and works as an invasive species specialist for The Nature Conservancy's Invasive Species Initiative in the USA. He is also a renowned nature photographer and the hundreds of breathtaking photographs tastefully presented between the covers of this book bear testimony to his skill with a camera and serve to illustrate all aspects of this most beguiling group of plants. He admits that there are other good books on carnivorous plants, but states the reason for writing his own book on the subject as: “I did so to bring my perspective to the world of carnivorous plants — that of a conservationist, a geeky horticulturist, and a photographer.”

This is not the first comprehensive book on carnivorous plants and will probably not be the last, but it certainly sets a new standard in detailed, well-presented information and stunning photographs written in an easy and entertaining style, yet with enough authority to engage the serious hobbyist and scientist.

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Growing Orchids In South Africa—A Gardener's Guide, Hendrik Venter, Briza Publications, South Africa, Pretoria, 2006, ISBN 10:1-875093-80-X, and 13:978-1-875093-80-9, Price: R189.00, 144 pages and numerous colour pictures, E-mail: books@briza.co.za

This book is a welcome first for South Africa. All previous information on 'how to grow orchids' in this country has appeared either as orchid society booklets or articles in recognised magazines/journals. As intimated by the title this new publication is primarily a beginners' cultural guide. This aspect is well presented by the author, demonstrating his practical experience and expertise in this field of floriculture. Further credit must include the number and quality of the colour reproductions that are all correctly orientated (printers commonly invert orchid pictures) and they are accurately identified and captioned. In addition they are evenly spread throughout the book, but most praiseworthy, they are appropriately placed adjacent to the relevant text (there is an unsatisfactory trend by publishers to keep all the coloured plates together). The look and feel of this semi-soft cover book is appealing and no beginner would be overwhelmed by its contents and dimension. The layout and design are exciting and well executed without falling into the trap of some modern trends (perhaps of younger book layout designers) of becoming over-garish.

However, the author's handling of the technical side of horticultural practice, his understanding of plant physiology and the history of orchidology should most emphatically have been checked by individuals proficient in the respective fields. The publisher is also at fault, as setting enthusiastic beginners off on the wrong foot is surely not what was intended.

For instance, in the Chapter on 'Pests and Diseases' it is suggested that thrips, aphids and scale infestations may be easily remedied by the application of the systemic insecticides Chlorpyrifos and Malathion: both may prove effective but neither are systemic (they are contact/stomachic insecticides). The reader is warned that insecticides are very harmful to health: not only do they enter through the skin, the harmful effects of inhalation

should also have been advised. Further on in the Chapter, it is stated that bacterial or fungal problems should be treated with Physan or Dursban (a trade name of Chlorpyrifos). The latter is not a fungicide but another contact/stomachic insecticide. Physan should only be used at the exact dilution recommended and over frequent use may prove harmful to certain genera such as *Phalaenopsis*. There are other more suitable fungicides available. In the Chapter on 'Feeding your Orchids' Kelpak is listed as a fertiliser but it is, in fact, a conditioner and enhancer and Trelmix is a trace element supplement and both are occasionally used in conjunction with liquid fertilisers.

In Chapter 3, 'General Growing Information', the advice on growing may have been better tackled by making a clear distinction (perhaps under subheadings) between growing outdoors and cultivation in an enclosed greenhouse: the two are sometimes confusingly mingled. In the 'Glossary of Terms', his definition of 'Genus' is ambiguous to my understanding. Under the Chapter 'The Origin of Orchids', the independent Royal Horticultural Society is incorrectly quoted as being part of Kew. In 'The History of Orchids' the statement "why orchids were so hugely expensive and commanded high prices at auctions" is somewhat misleading as certain common species were sold at nominal prices commensurate with that period. The most unacceptable mistake is made in Chapter 3 under the subheading 'Air Movement' where the processes of photosynthesis and respiration have been badly misinterpreted. A simple check would have so easily resolved the inaccuracies.

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Flower Crops: Cultivation and Management, A.K. Singh, New India Publishing Agency, New Delhi, New India (2006), Price: \$150.00, ISBN: 81-89422-35-9, 475 pages, E-mail: newindiapublishingagency@gmail.com

This book by Dr A. K. Singh is divided into three sections. In Section 1, the avenues and scope of the floricultural industry both in India and on a global scale are reviewed. Although half a decade out of date, figures for import and export of cut flowers, potted plants and foliage for various countries give perspective to the enormity and extent of global floricultural trade. Also in this section is an insight into how the Indian government is attempting to prioritise investment into the floricultural industry by developing, upgrading and expanding on existing 'Agri export zones'.

In Section 2, the most widely grown genera in India and the world are dealt with individually. In each of the 27 Chapters, a brief background, origin and distribution, botanical and varietal descriptions are given. This is followed by optimum cultivation practices for each variety including most favourable climate, soil

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