FLORA - SURVEY

# KEEP YOUR EYES PEELED FOR THE UNDERGROUND ORCHID

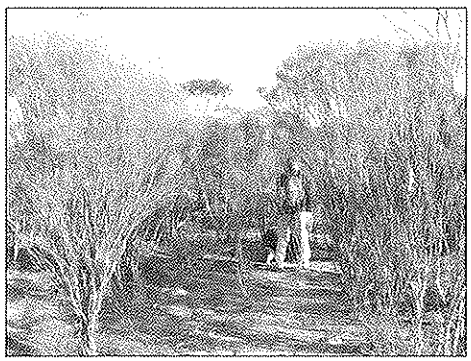
*Marie Strelein*

Do you remember hearing about the orchid that spends its entire life underground? It is one of the State's most interesting threatened species because of this underground lifecycle. The orchid also has a very particular three-way relationship with a specific fungus and the broom honey-myrtle. This article describes the habitat that the underground orchid, *Rhizanthella gardneri*, prefers to grow in. Perhaps you have suitable habitat on your property or know of an area nearby?

The underground orchid is currently known from near Corrigin-Babakin in the Central Wheatbelt and Munglinup-Oldfield River in the south-eastern wheatbelt. In the Corrigin - Babakin area the orchid grows with *Melaleuca scalena*. This is very similar in appearance to broombush, *M. uncinata*. In the Munglinup-Oldfield River area it grows with *M. uncinata* and *M. hamata*. In both areas emergent wattles and mallees are also typical of the associated vegetation.

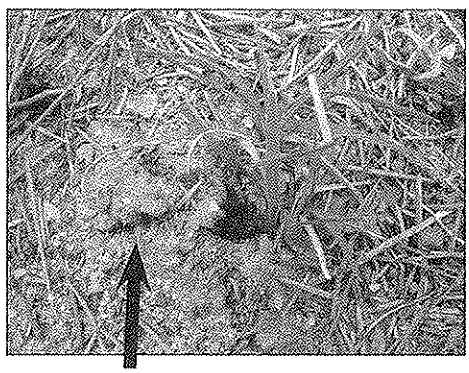
The soil where the underground orchid grows is also important. In both areas it is pale, sandy-clay or sandy-loam and you can actually see the coarse sand grains (quartz) at some of the sites. When the plant flowers in mid-May to early June, the bracts that enclose the flowers form a tulip-like head that pushes through this soil and creates a small opening at the surface. The opening is usually covered with a layer of leaf and bark litter. This is the spot where small fungal gnats enter and pollinate the flowers.

So, the best way to find the underground orchid is to look for melaleuca thickets on pale sandy-clay or sandy-loam soil. It is important that the area has some leaf and bark litter on the soil surface. Also look for large, dense melaleuca thickets as these promote a cool, moist soil surface. More open thickets may allow sunlight and heat to reach the soil surface around the base of melaleuca plants, causing it to dry out.



*This is what to look for - typical broombush thicket habitat.*

*Below the broombush, litter has been gently swept aside and there is an Underground Orchid here - but it is not easy to see!*



*And there it is! The bracts have pushed up the soil, creating a small opening that allows tiny fungal gnats to enter and pollinate the plants.*

Apart from all of these things the habitat must have the specific fungus that completes the three-way relationship between the melaleuca and the orchid. Without this special fungus the underground orchid will not be present.

As yet we can't look for this very specific fungus ourselves, but a research project is currently underway that is studying the relationship between the orchid and the fungus. Other major research initiatives are being developed to examine the underground orchid and find out more about its biology and ecology. As part of these research projects a soil test will be developed that will show whether the fungus is present at a site that has suitable habitat. If the fungus is present then the orchid could be present too!

With so many factors involved in where the underground orchid prefers to live it is no wonder this plant is tough to find! **Can you help by looking out for possible sites?** If you see a possible habitat, perhaps you could get on your hands and knees once or twice to have a look under that leaf litter?

If you would like more information or know of an area of bush near you that might be suitable for the orchid, please contact me. Even if you don't live near the known locations around Corrigin and Munglinup we would still like to hear from you. Because, as you might have noticed, these areas are not very close to each other, in fact there is more than 260 kilometres



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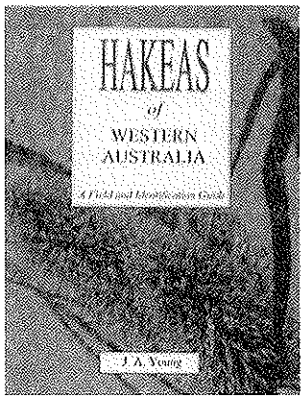
# NEW BOOKS

## Hakeas of Western Australia: a field and identification guide.

*J.A. Young*

*Pub: J.A. Young*

*Cost:$20.00 + p&h (see flyer)*




*For the last 15 years, Jennifer Young has been searching out, drawing and propagating hakeas, as well as promoting them as superb plants to use in revegetation. She has already published regional identification books to the genus, but now she has collected all the WA hakeas into one book.*

*Apart from clear, uncluttered line drawings, most species are accompanied by a photo of the flower and also of the whole plant in its bushland setting. The latter is useful as it helps to recognise plants from a distance. Anyone interested in WA wildflowers will find this book very useful.*

*(Note: we may be able to arrange for copies to be available from the LFW office at DEC, Kensington, where you can buy a copy without the postage and handling charge – as long as you can collect it from our office. Email the Editor if you would like to take advantage of this offer.)*

## A new and expanding field book for the fungi of the Perth Region.

*Bushlands in the Perth region have hundreds of species of fungi that contribute to the health of the bushlands. In the same way that animals and plants are considered, fungi need to be applied in the overall management for Perth's bushlands. Application of fungi has been impeded by the low availability of information about the fungi. This has been the impetus for a new book on Perth's fungi – the Perth Urban Bushland Fungi Field Book. The book has already provided an immediate and well-used dose of information since its inception in 2005, and has already expanded along its designated pathway to grow into a comprehensive guide over forthcoming years.*

*The Perth Urban Bushland Fungi Field Book is authored by DEC Mycologist Neale Bougher, and is seated upon an electronic self-managed format designed by fungi volunteer John Weaver. In an environment where many fungi are yet to be discovered and named, this book allows a guide to be available for use in the field now, and it has the flexibility to add more fungi as these are discovered and identified in the Perth region. Photographs of each species in the book are of local examples of fungi species in a local habitat. This is significant because fungi species can appear slightly different in different regions. The Perth Urban Bushland Fungi Field Book is available online, where the intricate details of the fungi illustrated can be best seen. The self-managed format allows users to download all or part of the book, and create their own physical copy conveniently-sized for using in the field. The flexible layout is designed so that additional species can be added as extra pages without having to print out the entire book over again. Updates to species also can be implemented with ease. Users are encouraged to supplement and expand the field book with their own notes and photographs. A downloadable template is provided for this purpose.*

*The best time to find fungi around Perth is through the autumn and winter months. Recently, a new updated and expanded edition of the Perth Urban Bushland Fungi Field Book has been posted online. So now's the time to make use of the field book, and also to join up with this year's free public events held by the Perth Urban Bushland Project. The field book and details of PUBF events can be accessed at www.fungiperth.org.au.*

*Neale Bougher*

*Reference: Bougher, NL. 2007. Perth Urban Bushland Fungi Field Book. Perth Urban Bushland Fungi, Perth Western Australia. (Online), from: www.fungiperth.org.au*

## *Phytophthora* Dieback Atlas

*A Phytophthora Dieback Atlas has been produced, covering those areas of the south-west where Phytophthora could occur. The maps are at 1:250,000 scale and are not accurate to exact on-ground points. Nevertheless, they do show, in a general way, where the disease is known to be and so can assist with catchment and property management planning by highlighting actual or possible risk.*

*The Phytophthora Dieback Atlas can be found at:*

*http://www.naturebase.net/component/option,com_docman/task,cat_view/gid,429/Itemid,711/*

## Integrated Forestry on Farmland: Prospects for integrated forestry as a management tool for salt-source catchments.

*Lisa Robbins and Nico Marcar.*

*Pub: 2007. CRC for Plant-based Management of Dryland Salinty, UWA, Perth.*

*Cost: free*

*Obtainable from the publisher, ph (08) 6488 2505*

*This report outlines the potential for further expansion of plantation-based forestry in six regions of Australia, all in the 450-750mm rainfall zone, in order to address the problem of dryland salinity. Its conclusions for the south-west of WA are that the prospects are good in the 600-750mm zone but less so in the 450-600mm zone, even though there is a greater opportunity in this zone to capture salinity benefits.*

*If you are already involved in tree cropping, or are considering it, this could be worth reading. It is brief but well illustrated and has an extensive reference list for further study if desired.*