ASGAP INDIGENOUS ORCHID STUDY GROUP **ISSN 1036-9651**

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ORCHIDS AS WEEDS: Many thanks to Margaret Bradhurst who very promptly wrote and included the following article printed in the Illawarra ANOS Group Bulletin, written by Helene Wild who writes regularly for the Victorian Group Bulletin. Margaret writes, "While it is not a native orchid, I thought it might be of interest to you." It certainly is, Margaret.

"THE *DISA BRACTEATA* MENACE

"*Disa bracteata* (syn. *Monadenia bracteata*) is a rogue, or weed, orchid from South Africa that has invaded our southern states.

"This not-particularly-attractive orchid created a great deal of interest when it was discovered near Albany (Western Australia) in 1944. How it got there is a mystery, but one theory is that it arrived in sacking that covered goods unloaded at Albany. Since its discovery, *D. bracteata* has spread rapidly northwards to the Geraldton area, eastwards to beyond Esperance and inland to the edge of the Wheatbelt. Unlike our indigenous orchids, this naturalised species favours cleared country and disturbed sites and is usually seen along road verges, in pasture, etc.

"In 1988, *D. bracteata* was discovered in South Australia and, during the 1990's, it spread just as rapidly in that state as it had in Western Australia during the 1950's.

"This menace has already reached Victoria, with infestations found in the Lower Glenelg National Park, in Stawell close to the Grampians National Park, near Bacchus Marsh, Ballarat, Hurstbridge, Lake Eppalock and French Island. No doubt there are other infestations awaiting discovery. The Department of Natural resources and Environment says the orchid poses a threat to native flora and fauna in Victoria. It competes for moisture and nutrient with many small understorey plants such as lilies and our precious local indigenous orchids. Unlike our native orchids that are dependent on specific insect pollinators, *D. bracteata* is a self-pollinated terrestrial species, each plant producing 10,000 wind-dispersed seeds that may be active for seven years.

"Mark Farrer, the NRE Catchment Officer at Stawell, said community help was necessary to control the weed. 'We need people to be on the lookout and report any sightings to NRE.' Mark said.

"You should remove every *D. bracteata* plant you see. However, plant removal needs to be carried out with care, because the seed head contains thousands of tiny seeds that fall out at the slightest touch. To remove the plant, first gently bend the stem into a plastic bag, ensuring seeds only fall into the bag. Then use a screw driver to lever up the two tubers at the base of the plant. Store plant material in plastic bags and dispose of thoughtfully. (In other words, make sure the seeds can't escape!)" [see *Jones* pp 415-7]

Co-incidentally, Pauline noticed an article in the October 2002 issue of *Orchids Australia* entitled "Growing Disas in Tasmania" which says: "Of the 130 species only six are

amenable to culture, but with these much variation has been achieved with hybridising." The parents of the lovely, colourful flowering hybrids pictured are not mentioned, and neither is *Disa bracteata*. Does this mean these hybrids will not become a menace?

Margaret has also had an article entitled "Don't Leave Your Scent Behind" published in the *Sutherland Shire Bushcare Link.* We would do well to follow her example.

"When we come across a terrestrial orchid beside a track, our natural reaction is to kneel down, steady it with our hand and have a closer look. But.....STOP! According to David Jones at the National Herbarium in Canberra, and another orchidologists, research has shown that those orchids which have been handled by humans are more likely to be eaten by native animals. Obviously, some animals have very keen noses and delicate appetites and unknowlingly, we are leaving our scent behind!

"I have learnt the hard way, of course. Recently I examined an area containing many flowering Midge Orchids, and decided I needed to return the next day to take more photos. Where there had been approximately 20 orchids in flower, all I found were 19 flowerless stems. One had survived because it was in the middle of a prickly shrub.

"I now hold a small twig in my hand and use it to steady terrestrial orchids when I want to admire or examine them more closely. Perhaps by not touching flowering orchids we may help to prevent the loss of a full season's seed dispersal."

Margaret adds: "After a disappointing drought affected start to the year (orchid-wise), Sydney has now had drenching rains and coupled with the fact that a lot of the bush has been affected by bush fires over the last couple of years the orchids are now responding well. Colonies of *Acianthus, Corybas, Chiloglottis* and *Pterostylis* have been flowering well and I am looking forward to seeing what Spring brings.

EPIPHYTIC SURVIVAL TECHNIQUES: I recently found a dead tree across a track; the tree had been dead for quite a while - bracket fungi were profuse on the lower trunk - but the top was still high enough to have protruded above the surrounding low forest growth. Right at the top were two epiphytic orchids, *Micropera fasciculata*. These were in good condition - leaves not sunburned, a good lot of healthy roots attached to the tree, and just a few bruises from the tree fall.

How does an epiphyte in such a situation gather food to survive and grow? They also thrive in such harsh situations as bare rock faces where wind and sun would normally make plant life impossible. These plants have developed survival strategies, some of which are well known whilst others are still being unravelled. Epiphytic orchids have roots that are adapted to different purposes: the clinging adventitious roots hold the orchid in place on its host, while others penetrate any humus that may be present and absorb nutrients. Hanging aerial roots may appear to have lost their way but they are vital in moisture collection. The outer layer of cells on these roots is composed of a specialised tissue named "velamen" (from a Latin word meaning "covering"). The velamen cells are spongy and have the ability to absorb moisture from the air and transmit it to the rest of the plant via the normal root system. Thus the briefest of passing showers would be collected and stored by the Micropera I found, and even a morning mist would be sufficient for the plant's water needs.

A second method of water-saving has been reported by Tim Entwisle in *Nature Australia* Spring 2002: this involves a variation in the photosynthetic process of converting carbon dioxide and water into carbohydrates. Photosynthesis requires solar energy and can only occur in daytime. To absorb atmospheric carbon dioxide the plants have leaf openings named stomata, but the stomata also allow plant moisture to escape during sunny periods. A water-stressed plant will suffer if it photosynthesises, and will starve if it does not. The solution? Close the stomata during the daytime and open them in the cool of night. Carbon dioxide is absorbed and, being water-soluble, it is retained in the form of mild carbonic acid - carbon dioxide combined with water. Next sunny period, the carbonic acid is converted to carbon dioxide and water and the normal photosynthesis resumes with the stomata closed. This can be proven simply by climbing a tree and chewing an orchid leaf early in the morning when it will taste acidically tangy, then later in the day when it no longer does: or so I believe!

TAXONOMICAL TRIBULATIONS: The Queensland Herbarium publication *Achievements 2001-2002* lists a large number of New Plant Names and Taxa. Of interest to this Study Group is the listing for Family Orchidaceae: 165 new names are given, effectively eliminating, as an example, all the *Dendrobium* species in Queensland. These have been replaced by genera such as *Thelychiton, Tropilis, Ceratobium, Leioanthum, Vappodes, Durabaculum* and a host of others. The Kew Herbarium is acknowledged as a source, and botanically one cannot get more authoritative than Kew. They must have reasons for these major changes and many hours of dedicated botany must have been spent in listing them. BUT, do we HAVE to accept them? As with the current controversy over the elimination of all Australian wattles from the genus *Acacia*, where will it all lead? The name *Dendrobium* is well accepted by even casual orchid growers and will be as difficult to eliminate as was the name *Eugenia* when that giant genus was split into *Syzygium, Acmena, Waterhousia*, etc., in the Australian species.

The developing system of plant identification and classification by examination of its DNA has the potential to turn present taxonomical techniques into a nonsense. The tools available to Linnaeus in the 1700s allowed the world to properly name plants, but have long since been superseded. I believe that we should put a hold on all taxonomical changes until the new discipline has been proven, and then we may have a whole new world of botanical taxonomy. In the meantime I will steadfastly refer to our ubiquitous Golden Orchid as *Dendrobium discolor*, NOT *Durabaculum undulatum* var *undulatum* - as Kew would have me do.

RARE ORCHID PROTECTION: The Winter 2003 issue of *The Web* - the magazine of the NHT & WWF - reports on a threatened orchid in Tasmania. Interestingly the orchid is referred to as either Arachnorchis or Arachnorchris caudata, but David Jones (an ardent taxonomist) does not list this genus in his *Native Orchids of Australia.* The common name is Tailed Spider Orchid, which Jones names *Caladenia caudata:* have the taxonomists been at work here also?

By whatever name, this orchid is endemic to Tasmania and listed as rare. It grows in open forest in coastal and near coastal localities, so is in the path of real estate development in such areas. It is thought that fire plays an important part in the orchid's

regeneration and so even remnant populations in urban areas may not be able to perform their allotted life cycle.

One such population has been found just north of Hobart, at St Virgil's College Austin's Ferry Campus. The College staff, in concert with Glenorchy City Council are implementing a management plan for the colony. They are cordoning off and rehabilitating the area, signing the site and educating the public as to what they are doing. Funding has been obtained from the Threatened Species Network to facilitate the work that is being done. This news is indeed refreshing in a world of inexorable development. The flow-on effect from the example set by the group of academics to other institutions, to their students and to the general public, will be of great value to the idea of conservation in general. Perhaps we can award St Virgil's an A Plus for their efforts??

A note in *Eucryphia,* the newsletter of APS Tasmania Inc, earlier this year requests APS members who are interested in monitoring rare and endangered orchids, under the auspices of the Threatened Species Unit, to contact Christine Howells on telephone 6229 4276, and we pass this information to all who may be interested in helping.

We had a letter in August from our member Frans Van Praet, who lives in Stabroek, Belgium. In part, Frans says: And now, let us talk about Native Orchids: I search for good books about Australian orchids in a true wet and dry season (I presume most of them are tropical) what puts the orchids to go into a dormant state. Can you also give me addresses from retail orchid growers in Australia, who will send me dormant orchid stems or rhizomes ? The summer in Europe appears tropical, all the tropical plants have a lush look, as though they were grown in their own country. Frans included a photo of his very healthy-looking orchids. Interestingly, he grows a *Disa* species.

We have written to three nurseries to make enquires on Frans' behalf. Two replied. One said that export of native orchids was so difficult that they no longer did so. Do any of our members have any suggestions that we could pass on to Frans, with regard to his request re appropriate literature and export nurseries? We would be very pleased to be able to encourage him in his endeavours. All replies will be sent direct to Frans.

FINANCIAL STATEMENT 2002-2003

BALANCE BROUGHT FORWARD 1/7/02			$599 00
INCOME: Subscriptions, grants, donations		195 00	
Bank Interest		33	195 33
			794 33
EXPENDITURE: Printing		52 55	
Postage		78 65	
Stationery		6 45	
Miscellaneous		6 50	153 15
BALANCE AT 30/6/03			$641 18
(Bendigo Bank a/c No. 114 030 240)			

Unpaid subs are now overdue