

Dear Member,

Well, I am out of articles for the next newsletter. I know all of you out there have something to contribute to our knowledge of our native orchids, so please put pen to paper. Anything will do, I can adjust if necessary so you don't have to be a budding author! Our group cannot survive without this contact.

1985 is drawing closer, and the International Show in Wellington, must include information on our native orchids for the many expected overseas visitors - and for New Zealanders! As there will be so few plants in flower - early October, a static display may be the best idea. So could anyone who could provide blown-up photos, paintings, drawings etc, please let me know what you have available. I cannot cope with a display this size alone, so any help would be appreciated.

Subscriptions next year will increase to \$5.00 - to cover costs, and to cover a \$1.00 affiliation fee per member, to the Orchid Council of New Zealand, which I feel must be undertaken before the International Conference. I hope this increase will not put you off renewing your subscription for the new year.

Another report has come to hand of a plant nursery - this time in Wellington, selling "dozens" of epiphytic native orchids, collected fresh from the bush - live kidney ferns still attached. The Nature Conservation Council is again investigating, I know of nowhere near Wellington where it is permissible to collect these on such a scale and I must say that I feel this practice must be stopped before it gets out of hand.

Well, happy hunting as the orchid season gets under way again. Let us know of your 'finds'; record, photograph, draw or paint, but please don't help in the destruction of our native orchid population. Also please watch out for any likely insect pollinators of the flowers, we are only just beginning to learn something of these.

Dorothy Cooper,  
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FROM the ORCHID RESEARCH NEWSLETTER No.4 July, 1984 Kew, England

#### A Method to Preserve Flower Colour in Herbarium Material of Tropical Orchids

The natural pigmentation of orchid flowers is invariably lost when they are pressed and dried as herbarium specimens. This traditional method results in producing dark brown or black flowers.

However, a method exists to arrest this process of colour deterioration. Pressed herbarium material can be obtained with flower pigments unchanged and even with petal markings preserved.

The method employs a slow-drying process whereby flowers are heated in silica crystals. It is a modification of earlier methods for preserving colour in succulents.

The flowers are initially placed between double sheets of filter paper and pressed flat with a luke-warm iron. The pressed flowers are then embedded in silica crystals and heated to 50-60°C on an electric hot plate for 30 minutes. The flowers are removed from the crystals only when the "bath" has cooled completely. More succulent flowers such as Paphiopedilums and Cymbidiums need to be softened for 15-20 minutes in the warm silica "bath" until they lose their rigidity. The flowers can then be pressed flat and heated for a further 20-25 minutes.

Using this method it has been possible to preserve orchid flower colour for several years. Olga Chudovska, Zurich.

(See also an article by Chris Ecroyd, Rotorua, in our N.O.S. newsletter no.7, Sept.1983, p.2 in which even the form of the flower can be preserved.)



The following article was brought back to me by a visitor to the 9th Australian Orchid Conference, Melbourne, September, 1984.

AUSTRALIAN DECIDUOUS TERRESTRIAL ORCHIDS - CULTURAL NOTES

L.T. & M.K. Nesbitt

These terrestrial orchids are adapted to a mediterranean climate such as occurs in the Southern States of Australia and in these areas are easy to grow. In Adelaide they thrive in a shadehouse of 50% shadecloth. NSW and QLD growers may need to provide some overhead protection from rain in warm weather. Vic growers often provide overhead protection from winter rain and water by hand. In very cold areas an unheated glasshouse may be required for frost protection, although light frosts do not worry the majority of species. Australian ground orchids normally follow an annual growth cycle comprising 6-8 months as growing plants under cool (5-15°C) moist conditions and 4-6 months as dormant tubers in hot (15-40°C) dry conditions. All species like good air circulation and will not thrive in a stuffy humid atmosphere especially if temperatures are high. Some species prefer heavy shade, others full-sunlight, but most will adapt to a wide range of light intensity. If the leaves and stems are weak and limp or if the leaf rosettes are drawn up to the light then shading is too dense and the amount of light should be increased. The spring flowering species can take higher light intensities at flowering time and flowers may not open properly under dull conditions.

Keep the soil moist at all times during active growth by watering gently if there is no rain. Handwatering is especially necessary in spring as soil in pots dries out more rapidly than that in the garden. Watering must be done slowly so that the mat of needles on the surface of the pot is not disturbed. Slugs and snails love these plants and must be kept under control. Keeping the pots up off the ground on galvanised steel benching is very effective in controlling these pests.

Be very careful with fertilisers because some terrestrial orchids are easily burnt or even killed by overuse, Pterostylis, Chiloglottis, and Diuris are very hardy and will benefit from weak applications of foliar feed in the early growth stages. Do not use fertilisers or insecticides on the more difficult to grow Caladenia and Theclymltra species, These species depend on a delicate association with certain fungi in the soil, an association which is easily upset by chemical treatments.

The new tubers are produced in winter - spring. Most of the species on this list are colony types, that is they multiply each year by forming several tubers per plant some time in spring the green leaves go yellow and then brown and dry as the days get hotter and drier in late spring. After the leaves have turned brown, let the pot dry out completely to dry up old roots and tubers otherwise they will turn into a soggy mouldy mess and infect the adjacent new tubers.

The pots can be knocked out and the tubers examined in summer without harm, in fact we find at the nursery that the best results are obtained if the tubers are repotted in fresh soil each year. Our soil mix is 40% loam, 45% sand, and 15% peatmoss with a little blood and bone fertiliser added. In other states a coarser mix with hardwood chips or leaf-litter in place the peatmoss may give better results. Replant the dormant tubers with tin tops 20mm deep, Cover the soil surface with a mulch of pine needles chop to 20-50mm long, to prevent erosion. Repotting is normally done in November, December and January.

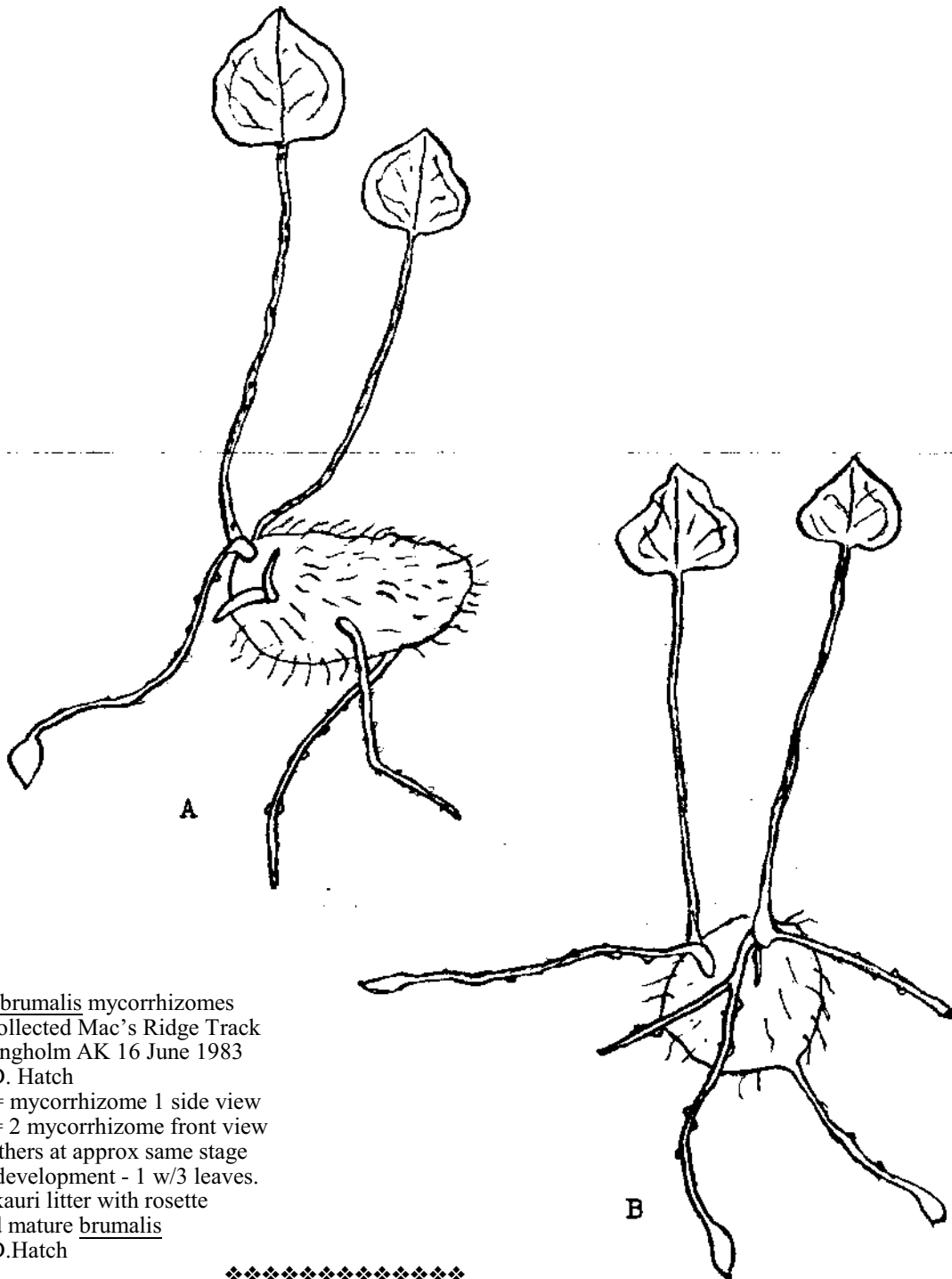
Keep the pots shaded and almost dry until the end of February when they may be set out in their growing positions and watered lightly. The tubers of some species will rot if kept wet during the dormant period, others will produce plants prematurely which are then attacked by pests such as thrip and red spider and fungal diseases in the warm weather.

Each tuber sends up a shoot to the surface in autumn and leaves grow rapidly in late autumn - early winter as the rains set in. Pterostylis is usually the first to appear in March, followed, by Diuris in April, Caladenia in May and Corybas in June-July.



Good air circulation over the pot is essential to prevent mould and leaf rot. Sun loving species (Thelymitra, Diuris, Microtis) prefer a brighter location for good growth. Corybas like the shadiest corner.

Australian deciduous terrestrial orchids are delightful plants to cultivate. Because they are small plants they look better if several plants of the same type are grown together in a pot. They are usually exhibited in shows as massed displays in 200-300mm pots. They fit in well with evergreen plants in a shadehouse during Autumn - winter - spring but must be allowed to dry out in summer. The pots can be grouped in one corner and hardly watered at all, or can be taken out of the shadehouse and stacked against the south wall of the house where they can remain shaded and cool until they are returned to the shadehouse at the end of February. Australian terrestrials are the best orchids to have in times of drought since their water requirements are so small.



Pt. brumalis mycorrhizomes  
 5 collected Mac's Ridge Track  
 Laingholm AK 16 June 1983  
 E.D. Hatch  
 A = mycorrhizome 1 side view  
 B = 2 mycorrhizome front view  
 3 others at approx same stage  
 of development - 1 w/3 leaves.  
 in kauri litter with rosette  
 and mature brumalis  
 E.D.Hatch



The following article appeared in the North Shore Orchid Society Newsletter August, 1984. The source was the Sunday Telegraph (U. K.), June 10, 1984, by David Brown, Agriculture Correspondent.

"A secret formula based on porridge oats has been devised, by scientists at Kew Gardens in a £100,000 project to save from extinction the nine rarest varieties of wild orchids in Britain. The substance will be used to cultivate seeds from the rare flowers in laboratory conditions before botanists attempt the first successful transplant of British orchids back into the wild. Botanists and conservationists have begun keeping a 24-hour guard on all sites where the rare orchids are coming into bloom.

The varieties, the spider (Ophrys sphegodes), fen (Liparis loeselii), ghost (Epipogium aphyllum), lady's slipper (Cypripedium calceolus), late spider (Ophrys fuciflora), lizard (Himantoglossum hircinum) military (Ophrys militaris), monkey (Orchis simia), and red Helleborine orchid (Cephalanthera rubra), are so scarce that anyone digging them up risks a fine of up to £50 for each plant.

Seeds will be collected from each site and sent to Kew in the project organised by the Nature Conservancy Council, the Government's official advisory body on countryside conservation, the World Wildlife Fund, and other conservation organisations. Eventually the conservationists hope to set up a special reserve in the south of England, where, visitors will see most of the nine endangered varieties growing wild.

The problem with Britain's native orchids is that they are totally different from the tropical varieties sold by florists and easily cultivated in greenhouses.

The British wild orchids need to be grown in soil containing a fungus which provides the seeds of the plants with food, and the exact relationship between orchids and the fungus is not fully understood. The Kew experiment follows successful work in Australia where orchids have been returned to the wild after being grown in the laboratory, using a substance similar to that now being tried in Britain.

The substance, which includes an extract from porridge oats, provides the seeds with conditions close to those they need in the wild. Botanists, including an Australian expert flown in to mastermind the work (Mark Clements; have drawn a veil of secrecy over the work until the first results are obtained next year.

But Lynn Farrell, a Nature Conservancy Council expert responsible for preserving rare plants, said; "We are trying to breed and transplant back into the wild all the nine British orchids on our so-called 'red list' of endangered species, Lots of people have managed to germinate seeds from those orchids in the part out no one has succeeded in putting them back in the countryside. It is a complicated procedure and we are at the beginning of a three-stage operation,"

Fulltime nature wardens and volunteers are now guarding the orchids which are beginning to come into bloom, Among the first to flower has been the purple and pink monkey orchid which survives on only two sites in Kent and Oxfordshire. At the Oxfordshire site, on the slopes of a scrub covered hillside, Mr Andy Mitchell, a fulltime warden with the Berkshire, Buckinghamshire and Oxfordshire Naturalists' Trust, kept watch on six of the flowers from the cover of a small tent.

"We will be here 24 hours a day for two months until the orchids have stopped flowering" he said, "The seeds will be sent to Kew. So far no one has tried to steal them, but we are ready if they do,"

The orchids are vulnerable to unscrupulous collectors. Once dug up and removed, they are unlikely to survive away from their original soil conditions," (See also article in N.O.S. newsletter, no.10, June,1984, p.2.)

