

ASSOCIATION OF SOCIETIES FOR GROWING AUSTRALIAN PLANTSTHE AUSTRALIAN DAISY STUDY GROUP NEWSLETTER NO.31

Dear Members,

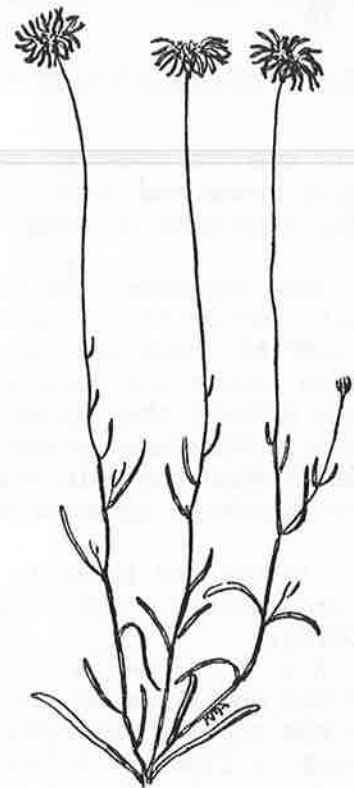
I'm getting mixed messages about the Seed Trials. Don't be discouraged by the poor results or even nothing at all! You may find a later sowing suits your conditions. I've also had mixed results. My seed pots were left under the automatic watering system while I was away. One pot dried out, slugs had a satisfying meal in another where the germination was good, no germination in two pots and, in another two, one seedling per pot. The latter two pots are of species I haven't grown before and they are getting plenty of TLC. Fortunately they do have mates from an earlier sowing, so in their case I'll be attempting hand pollination.

I've yet to devise my solution to isolating pots but, unlike Judy, I do not have daughters and a ready supply of pantyhose, so it looks like bags from terylene curtaining for me.

We have to plan well ahead with the Brachyscome Project so please note our requests for help. We still need seed of Brachyscome microcarpa. Many thanks to the following members for their provision of cutting material or seeds of B.tatei:- Beth Armstrong (with Rodger Elliot), Barbara Buchanan (with Jan Hall), Julie Strudwick and Gloria Thomlinson.

Seed Bank - we will occasionally ask for donations of seed of certain species that are usually not available commercially. Unless otherwise requested, enough seed for six packets is ample. This will save you postage.

Field Trip - to Mount Kosciusko National Park in February, 1992. (Details on p. 53) Sorry I can't order the weather or influence the season, but it is one of the best areas for alpine daisies. Despite opinions to the contrary, we don't lose or overtax our members. There is a range of walks to suit all abilities and we learn much more in a group activity than solo.



Brachyscome parvula
(inland form) x 2/3

Enjoy the spring flowering and keep the brachyscome observations coming in.

Best wishes for Christmas and the New Year,

Esma.

HELP HELP!!!

This season we would be most grateful if members would collect seed of the following species for the seed bank and for our various projects:- Brachyscome species, Helichrysum bracteatum (coloured forms), Helipterum anthemoides forms, Helipterum species and Schoenia cassiniana. We would also like to hear of any frost damage your plants sustained (as Colin has recorded on p.52 of this NL).

SPECIES OR FORMS NEW TO THE GROUP

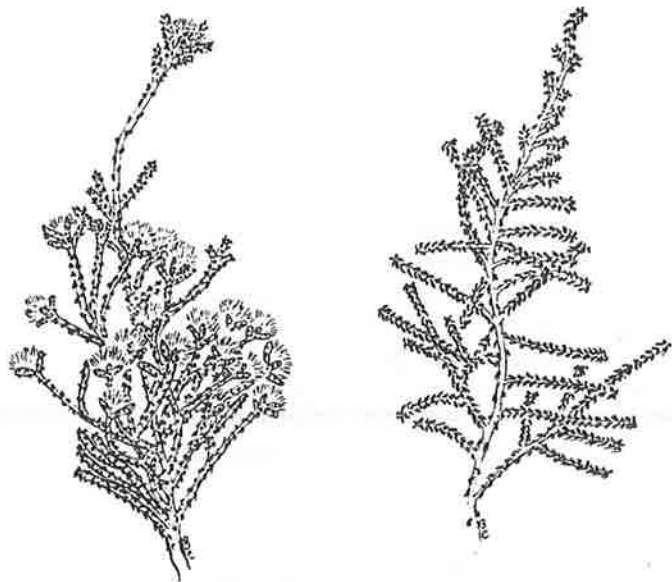
Helichrysum scutellifolium (J.D.Hook.)
F.Muell.

(James Baines calls this species the Dotted Everlasting in Australian Plant Genera, but it is hard to find that common name in the literature.)

scutellifolium = leaves shaped like small shields.

Helichrysum scutellifolium is a Tasmanian endemic which occurs on dry hillsides. In its original habitat it is a shrub, 0.3 to 1m tall, and it flowers in spring.

Esma presented me with seed collected from Bruce Champion's place in Tasmania in January '90. It was sown on 21/3/90 and germinated in 14-20 days. Fifteen to twenty seedlings dwindled to five after the winter struck, and finally only two seedlings were transplanted into tubes.



Helichrysum scutellifolium x 2/3

This species seems to need protection over winter for the seedlings which have hairy stems and fine, inconspicuous hairs on the tiny leaves. The tubes went into 12cm pots and then into a 30cm pot in March '91.

In late September the two plants together measure 80cm x 65cm. The habit is spiky rather than rounded, and the branches are quite dense and tangled. At this stage the stems are very white, with thick strands of white hair. The tiny, dark green leaves are attached at the broad end of the shield. Because they are concave beneath they appear as raised knobs pressed against the stems. Short branchlets, 2-6cm long, stand out at right angles to the main stems and bear more leaves than the main stems. The contrast of white and deep green gives plants a most handsome appearance.

The leaves are slightly sticky, 1mm x 1mm, with a few scattered hairs on the upper surface - especially on the young leaves. The lower surface is densely woolly.

It has not flowered for me yet, but I imagine I can see little yellowish knobs at the tips of the branchlets (in late September). Esma has a pressing of a plant in flower. It looks rather sweet. There are small clusters of stalkless heads (usually 3 to 5 together) which add a yellowish hue because the outer bracts are straw-coloured and the inner bracts remain erect.

I was fascinated by this species so I sowed the rest of the packet in January this year. Again it germinated quite well, and again I lost some of the seedlings in winter (until I remembered to put them under a sheet of stiff, clear plastic to grow a bit more robust before exposing them to the elements). Jeff Irons sent some seed from England too. It was sown in June, but has not germinated yet.

H.scutellifolium also strikes relatively easily from cuttings.

So far H.scutellifolium strikes me as a handsome foliage plant and it is most reliable in its growth (once the seedling stage is mastered). So great is my faith in it that two plants have been placed in positions of prominence in the actual garden. Mind you, when closely questioned about her views Esma seemed to indicate that it had not impressed her and that it was hardly worth picking up. Perhaps it is better under cultivation than in the wild.

The foliage could certainly prove useful for floral art, either fresh or dried. Two months ago I brought a piece inside to observe under the microscope. Once this was achieved the bit was forgotten and has just surfaced from beneath a pile of papers. It is still fresh and pretty.

Arne Anderberg lists this species as Ozothamnus scutellifolius Hook. f. in Opera Botanica (1991), No.104, p.89.

Judy Barker.

Brachyscome radicans Steetz ex Lehmann

radicans = rooting, referring to the stems.

(NSW, Vic, Tas.)

In this newsletter and subsequent ones I will introduce five alpine brachyscomes that are found in similar habitats (in wet, boggy or marshy sites) in areas under snow in winter along the Eastern Divide in New South Wales, East Gippsland and in Tasmania. Some species reach lower altitudes and one, B.graminea, is found at sea level.

I'll start with B.radicans because this one is variable in leaf size and shape, and it is primarily this variability that links all species. I've also chosen this species because I spent a couple of summer holidays looking for it and when it was found I was with about ten ADSG members. It made our day!

Illustrated within this article are selected prints of herbarium specimens and leaf prints from three Snowy Mountain sites and one Victorian site.

B.radicans is a stoloniferous, ascending perennial which grows to about 16cm high. Leaves are very variable, narrow to broad linear, with a blunt rounded tip, usually about 2mm wide, but can be spatulate and to 8mm broad, entire or irregularly lobed. The lobes are short, narrow and taper to a point. Leaves sheath the stem or stolon and are mainly basal.



Species East Gippsland

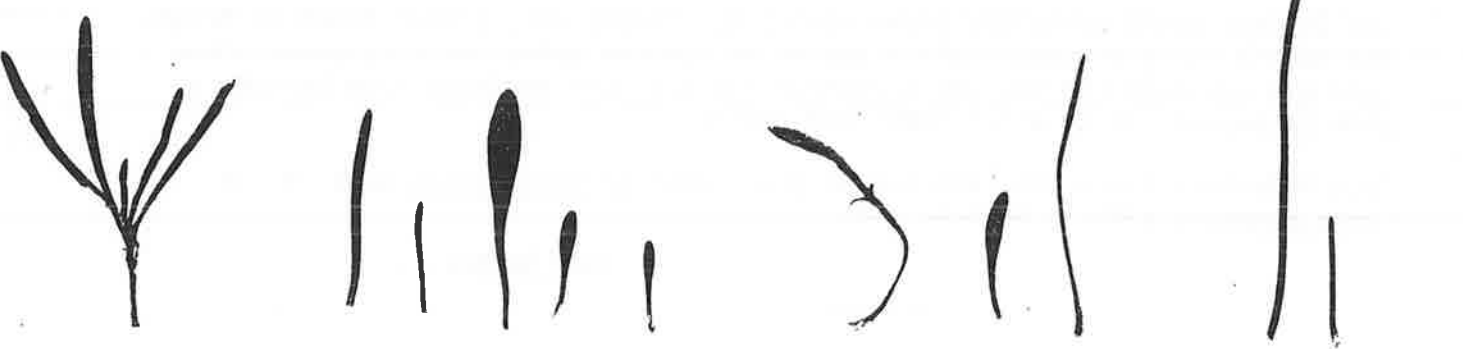
x 2/3

Brachyscome radicans Steetz
ex Lehmann.

Determined P. Barker Dec. 90

Australian Daisy Study Group Herbarium

On disturbed or exposed sites B.radicans forms a closely compacted colony; in damp grassy sites, in frost hollows in sod tussock or in pools or stream banks they form an open, stoloniferous network or are weakly scrambling plants among the vegetation. Flowering stems are unbranched, upright with one or two small leaves towards the base. The flower-head is 2-2.5cm across, with rays usually white, but sometimes pink, mauve or blue. The involucral bracts help to identify the species. The bracts are purple, with broad, rounded tips - torn and ciliate.



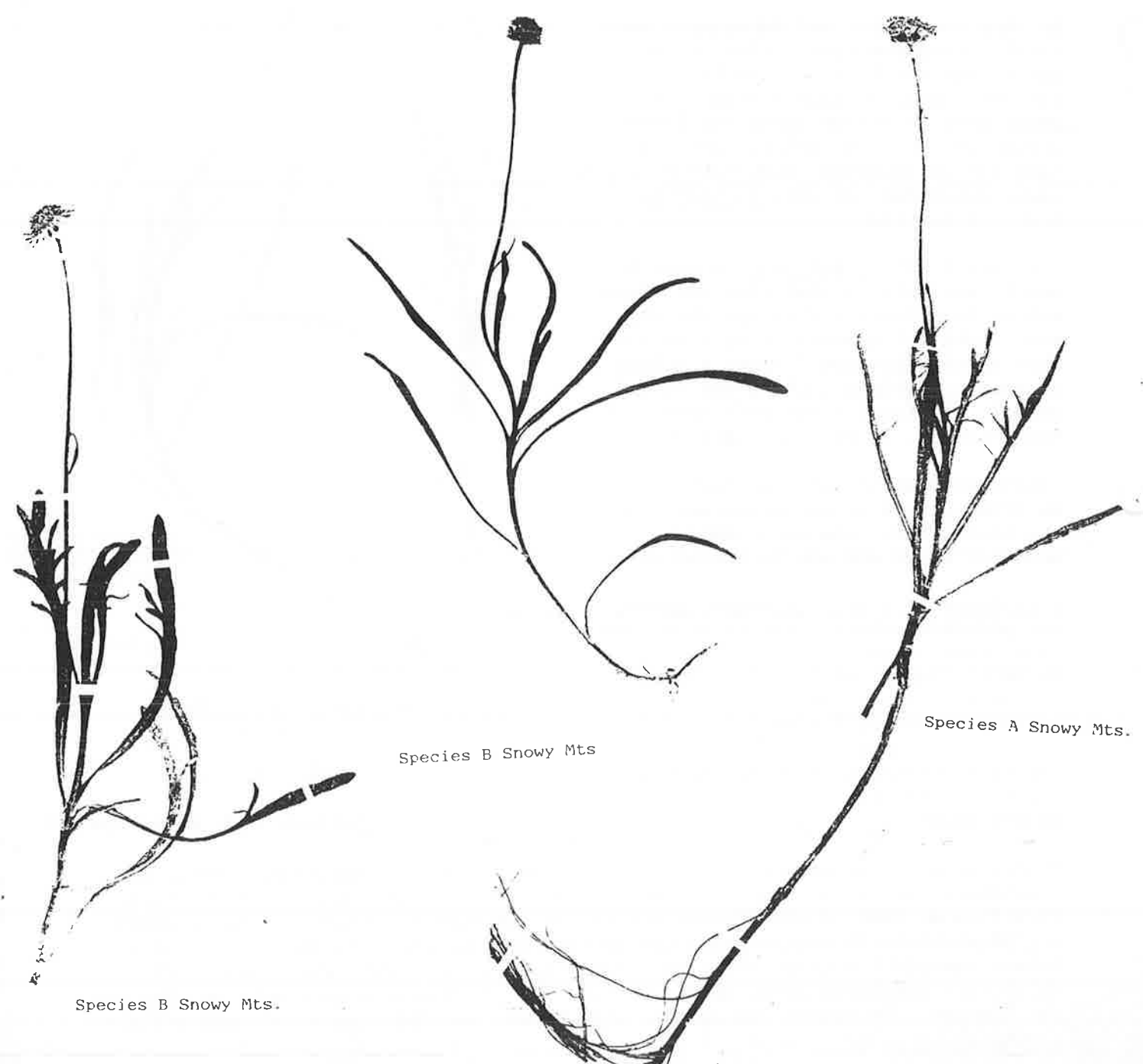
Species A Snowy Mts.

Species B Snowy Mts.

Species C Snowy Mts.

Species East Gippsland

Leaf prints x 2/3



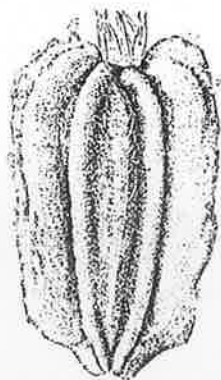
Species B Snowy Mts.

Species B Snowy Mts

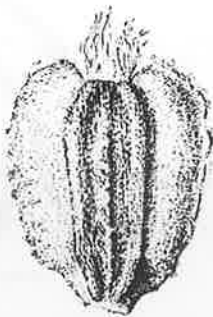
Species A Snowy Mts.

Prints of herbarium specimens x 2/3

The fruit is distinctive, brown, 2mm long and 0.8mm wide. It has a swollen wing lighter in tone than the body, and bears a few glandular hairs at the edge. The body consists of three folds; the central one is less obvious and bears a few hairs. The body appears to be a separate entity sitting on top of the wings. The pappus is uneven and conspicuous.



Fruit x 20 (Nunniong Plains)



B. radicans



Fruit x 20 (Kiandra)

B. radicans can be confused with B. tadgellii which is also found as a densely compacted colony. Its leaves are narrow linear and intermittently lobed. The rays are white. The fruit is brown and has a wing, but the wing is not swollen, but flat, thin and broader. The pappus is more indented between the wings. The involucral bracts are narrow, tapering to a point, not broad and rounded.

B. stolonifera is found in similar sites, mainly in clear pools with gravelly bottoms, frequently at high altitudes. It is much smaller in all characters. Leaves are entire, narrow and the rays white. The fruit does not have a wing.

B. obovata can often be found with B. radicans or B. tadgellii and this can make identification difficult when plants are small or fruit is immature. Leaves are narrow and entire, but can be 15cm or more in length in very wet situations. Fruit is light brown, smooth and swollen.

B. graminea, the last in the group, can be confused with some B. radicans forms. It can be a mat plant or may scramble up through grasses or reeds. Leaves are "thin" not fleshy as in B. radicans. rays are white. The character of the fruit is the key - it's light brown, swollen, and has a depressed central area. The pappus is inconspicuous.

B. radicans germinates easily from seed, and may be propagated from stolons or by division. In cultivation, in one leaf form at least, it spreads as vigorously as Couch Grass - "going berserk" as one member puts it. Because I had only observed it in very wet sites, I grew this species in pots standing in a saucer of water or in a shallow pool in the garden, where it has thrived. At lower altitudes it does not bloom well, if at all, and for this reason would not have horticultural potential. Nevertheless, it is a species with an important role in the environment, particularly in its response to disturbed bogs.

The Victorian population was very interesting and illustrated how plants respond to a specific environmental niche. The upper reaches of the stream habitat had been disturbed by road realignments and it was growing as a dense compacted colony in the disturbed sites. The flower-heads were on stems to 8cm and the rays were white. In the lower reaches in remnant sphagnum bog I found a pale pink brachyscome about 15cm high with pale green leaves. It was scrambling up through the vegetation. A new brachyscome? No. It was later confirmed B. radicans. On the large grassy plain above this site cattle were grazing behind a three strand wire fence when, as if on cue, a mob of cattle bounded through an insecure section of the fence, down the hill, through the daisies, around and back again over the broken fence. The Conservation Status of



Species East Gippsland



Species B Snowy Mts. Cultivated.

B. radicans in Victoria is "r", that is rare, with relatively few stands. I have not seen B. radicans in Tasmania and await reports from Tasmanian members.

I acknowledge the kind assistance of DCE, Bairnsdale, and Dr. Philip Short for species identification.

Esma Salkin.

Helipterum polygalifolium D.C.

Brilliant Sunray, Golden Everlasting, Milkwort Sunray

polygalifolium = leaves like those of the genus Polygala

(NSW, VIC, SA.) H. polygalifolium has been listed for Queensland by Dr. Jim Willis in Plants in Victoria, Vol. 2, by Elliot and Jones in Encyclopaedia of Australian Plants, and by Cunningham et al. in Plants of Western New South Wales, but this origin is not mentioned in other references.

This species is an annual that I first saw in the flesh when we made a quick trip into western New South Wales some years ago. It was only present in small numbers and was past its prime in early September, but I itched to grow it. The heads were golden yellow (one of my favourite colours) and large (one of my favourite sizes).

Seed did not germinate easily. This measured sentence does not begin to convey the untiring efforts, ensuing frustrations and wasted invective of our attempts to germinate it over the years.

Colin Jones won fame by germinating numerous seeds last year. This year Gloria Thomlinson has also germinated seed collected from Yarrara (near Mildura) in October 1990. Funnily enough, we had no trouble germinating seed from Werrimull (in the same area) when AD SG first



Helipterum polygalifolium

(seedling growth) x 2/3

started ten years ago. But from the Wilcannia area, Menindie, Bourke, Cobar and Yardea, no dice.

Gloria took pity on me and presented me with three tubes of her H. polygalifolium which she had nipped back several times. All three were put lovingly in one 30cm pot of rich mix, nipped back again, and implored to remain alive. They did more. They grew apace. First they formed whitish buds at the tips of the stems. As the stems elongated the buds turned bronze. At the end of August the first bud opened. How beautiful!

In late September the clump of plants measured 40cm x 55cm with many buds and flower-heads, in fact, a veritable sunburst. The heads, 2-3cm across, tip long, naked, robust stems, 16-21cm in length. The stems are hollow. While this is usually a great help in wiring the heads I have found these stems to be too hollow, but have wired just the same. The stems are shrinking onto the wires, but there is a dark "eye" developing in the centre of the florets. Maureen is inserting wires without penetrating the receptacle. This may yield more pleasing results. No more wiring now! The rest of the heads must be rubbed together for seed.

Some heads are open and flat, others are cupped rather like those of Helipterum anthemoides 'Paper Baby', but invariably the stem just below the head has expanded.

The leaves are quite large, 5-6.5cm x 1.4-2cm, blue-green and fairly limp in texture. They are lanceolate with bluntish tips, stem-clasping, and often have small ears at the base. The leaves must be quite variable in shape as other descriptions state that they may be oblanceolate, usually opposite at the base of the stem and becoming alternate.

This is a very attractive annual indeed - bold, large and generous in its flowering. We should foster its cultivation.

Judy Barker.

WESTERN AUSTRALIA ... SPRING 1991

by Bob Magnus.

Two years ago we were all booked and packed to go to Western Australia on the wildflower pilgrimage but, alas, the pilots' strike beat us. This year we tried again and our disappointment from the first time was more than compensated by the wonderful trip we had this last September.

We flew to Perth and spent the first day in King's Park which was alive with Kangaroo Paws, orchids, parrots and all so close to the city.

The next day we hired a car - a normal sedan, not a 4 W.D. - which was excellent and quite adequate even on dirt roads, and we set off north. Not long out of Perth, still in the Swan Valley, we encountered everlastings, only to find the council had planted them on roadside verges - cheats!

Our biggest problem getting north in a hurry was that there was so much to see. We kept stopping every quarter hour and ducking into the bush where each time we found something exciting and new - many Kangaroo Paws, Conostylis species, little Myrtaceae shrubs, Smoke Bush, Grevilleas and Nigger Boys. A trip to the Gingin cemetery to see the Anigozanthos hybridising is a must. Other travellers were a great help and people travelling south gave us good directions towards Daisy Country.

The first real encounters with everlastings occurred between Cervantes and Jurien where we saw helipterums and helichrysums growing in Kwongan scrub. Further north, just south of Geraldton actually, we found a beautiful carpet of

schoenias, Helipterum manglesii, Helichrysum lindleyi, Hyalosperma cotula and others we couldn't identify. Mixed with isopogons, banksias, calothamnus, verticordias and leschenaultias they created a garden as beautiful as any contrived by man.

We had an address to visit in Port Gregory and though the road on the map (60Km of gravel) looked dodgy, it was fine. The whole road was lined with Helipterum roseum, yellow podolepis species and the first cephalopterums - the creamy white one. As it turned out it was an excellent decision because we entered Kalbarri National Park from the south. It has recently been badly burnt, but the waitzias there were just about the high point in our trip. Large, robust plants, both pink and bright yellow, were growing in profusion as far as one could see.

The journey south was mostly inland through the wheat belt - it could almost be called the Capeweed belt - more and more agriculture, but still with vestige vegetation in marginal areas and on the roadsides. Finally back to Perth.

All in all a wonderful journey! Beforehand, by way of preparation, we bought Beard's "Plant Life of W.A." and it proved to be an invaluable, almost indispensable, companion - recommended. Also no daisy trip would be complete without an overnight stay at the Mullewa Pub. You'll see what I mean if you ever get there. It's the antithesis of modern sterile motel accommodation. Some of the 'Wildflower Farms' are awful with dyed banksias, Smokebush, helipterums and greedy tourists hungering after a bit of the action. But don't be deterred! Early September next year! It's the trip of a lifetime and something you'll never forget.

'TOSS IT INTO THE GARDEN'

by Bev Courtney.

Esma is always telling us not to throw out old seed but to 'toss it into the garden', in the faint hope that something unexpected will come up. So when I gave my seed collection a much needed clean-up and sort-out earlier this year, I found that I had about two cupfuls of assorted seed, not just daisies, but a mixture of species - acacias, banksias, hakeas and many others.

The trouble is that my garden has heavy, compacted clay in the open areas, and ground covers and heavy mulch everywhere else. I needed an open area that could be protected from sparrows and blackbirds, easily baited for snails and easy to check for germination. The vegie beds looked ideal - bricked around, built up and reasonably friable soil. I raked out an area about 1m x 50cm to what the gardening books call a 'fine tilth', scattered the seed, covered with wire netting, watered and waited.

In about three weeks a few patches of green began to appear. I had kept a list of everything sown, but it was fascinating to watch tiny cotyledons unfold and wonder what they were going to be. I was surprised that so many acacias germinated considering that they had not had the usual boiling water treatment. Could the seed coat be just as easily broken by fungi or bacteria in the soil? It made me think twice about the presumably sterile perlite/peat medium I normally use and the germination failures which sometimes occur with it.

Two little seedlings appeared next to one another. They had long, slender cotyledons unlike the cotyledons of most seedlings. (Billardiera scandens, the Common Apple-berry is the only species I have grown with similar leaves.) I potted them up, along with lots of others and put them aside to grow on.

Some time later I was browsing through my collection of newsletters and came across Judy's articles on Helichrysum davenportii, (NL28, November, 1990). H. davenportii had been in my collection, but of course I never expected it to germinate. However, the description fitted and there was even a drawing of the little cotyledons. My two seedlings are flowering now and Judy has confirmed

that they are indeed the elusive species. I have been busy with the paintbrush and there are seeds pushing up in the centre of the flowers. What will I do with them when they mature? I'm not game to throw them back in the vegie beds, but I bet they won't germinate for me by the usual method!

TRIVIA FROM THE DATABASE

by Joy Greig.

So far 2247 separate attempts by 27 growers to germinate 292 different species or varieties of daisies have been recorded in the database. Members may be interested in some of the facts emerging.

- * Twenty attempts have been made to germinate Brachyscome aculeata from 10 different provenances and 3 gardens. Better than 50% germination was obtained in 10/20 cases using a variety of methods, none of which included pretreatment of any kind. The germination times varied from 4-42 days, but averaged 13 days. Unfortunately, details of the date of seed collection are not always reported by growers, but were known in 7 of the 10 successful cases. In all of these the seed had been sown within 18 months of collection.

In 8/10 cases where germination was less than 50% the seed sown was at least 12 months old, but in the other 2 the seed was fresh.

Two growers obtained good germination from seed collected in Jenny Rejske's garden in 1988, a third obtained fair results, but seed collected from two other gardens was less rewarding.

- * Brachyscome melanocarpa has been recorded 26 times, 17 from garden collected seed. 4/17 gave better than 50% germination in 7-26 days and all from seed less than 14 months old. In the 13/17 cases where germination was less than 50% the seed was known to be more than 1 year old in 10 of them.

In the 9 cases where seed had been collected in the wild germination was always less than 50% (nil in 4 cases). In 6/9 the seed was more than 1 year old.

Of the 4/26 cases where germination was greater than 50% seed was collected from Judy's garden (in 1986, January 1987, February 1987 and 1989). The only provenance of B.melanocarpa recorded was Kinchega, NSW, in 1984, courtesy of Esma, and 3 attempts to germinate this produced less than encouraging results. From where, then, did all the garden collections arise?

- * Maureen, who uses the pure sand/bog method, has had better than 50% germination in 44 of the 96 attempts recorded. In only 4 of these successful cases was the seed known to be more than one year old, and these were B.dentata, Minuria integerrima Rutidosis leucantha and Vittadinia bicolor. Three other growers have used the same method a total of 101 times, but have had better than 50% germination in only 27 cases. In 14 of these the age of the seed was recorded as less than one year old on 13 occasions. Of the 74 poor results the age of the seed was recorded 31 times and was less than one year old in 19 of them.
- * Helipterum rubellum has been recorded only 4 times, 3 from Harper's seed and one from Jemberlana Hill, WA. In each case results have been poor.

Fascinating, isn't it? Keep the results coming (good and bad) and eventually we will be able to draw more definite conclusions. Please give ALL the information you can about the seed, particularly its provenance, source and age.

PROPAGATION OF HELIPTERUM ANTHEMOIDES (WHITLANDS FORM) FROM CUTTINGS

by Julie Strudwick.

In 1989, before I joined the A.D.S.G., I visited Whitlands with Barbara Buchanan and Beth and John Armstrong to see the Whitlands form of Helipterum anthemoides. There was little seed ready at that time (early November) and I decided to try propagating from cuttings. On Beth's advice I took material which included some of the basal cambium layer. All five pieces rooted and grew on into vigorous plants. When I mentioned this at a Daisy Study Group Meeting in April, 1990, Judy asked me to write up the method I'd employed for the Newsletter.

At the time of taking the cuttings I was unaware that this form had proved difficult to grow for some people and I made no notes with the result that, after my usual procrastination about putting pen to paper, when I did try to record my method I found I couldn't reliably remember the details. I then decided to try again in 1990 and keep notes!

I was unable to get back to Whitlands in November to take cuttings at the same time as the previous year, so decided to use material from one of the two plants I'd kept myself from the 1989 strike. I had planted one in a 30cm pot in Debco Potting Mix (with a boronia which later died) and the other in the ground at the top of a rock retaining wall. Since the former was the more vigorous plant I took material on 22nd. November and tried cuttings of various types in two different mediums - Debco Propagating Mix and Debco Seed-raising Mix (which I have previously found successful for many cuttings).

Cuttings tried were:-

1. Base of stem with a heel of cambium layer.
2. Base of stem without a heel of cambium layer.
3. Portion of stem from above these from old flowers (leaves yellowing).
4. Portion of stem from above these from young flower-heads and buds (leaves green).

All cuttings were approximately 12cm long and were dipped in half strength IBA rooting compound. The results were a spectacular 100% failure! One of the type 1 cuttings produced a new shoot from the base, but formed no roots and finally gave up the ghost in March 1991.

A further attempt was made in December 1990 with base stem cuttings only, again dipped in half strength IBA - this time four in Debco Propagating Mix and four in a 3 to 1 granitic sand to peat mixture. One of the latter rooted and was potted up on 30th March 1991 - the other seven died.

When finally getting round to cutting off the old flower stems in February 1991 (there were in excess of 200 flowering stems on the plant potted in Debco Potting Mix) some new growth was accidentally removed as well so I decided to try this as cutting material. Six were put in Debco Propagating Mix in a small container in the propagating house, seven in Debco Propagating Mix in a polystyrene box of mixed cuttings in the fernery, and a further seven in another polystyrene box in the granitic sand/peat mix. Three of the latter struck and were potted up on 21st. March. All the rest either died or were looking very sick and I threw them out in April.

On 1st March I decided to try material from the plant in the ground before concluding that the 1989 attempt was a complete fluke. (This plant was smaller and had shorter stems than the plant in the pot in Debco Potting Mix and had had much less water, but had still produced about 170 flowering stems during the

season.) I took twelve clumps, each consisting of several stems (3 to 6) joined with basal cambium layer, and put six each in the poly boxes of Debco Propagating Mix and sand/peat mix, again dipped in half strength IBA. On 13th April I potted up three from the Debco Mix and ALL SIX from the sand/peat mix, all with good roots. The remaining three clumps from the Debco Mix box all had multiple good new growths (though no roots) and I split them into two pieces each and returned them to the sand/peat box where they all look healthy at the time of writing (1st May). The upper parts of the stems were also made into cuttings. Most were still green though unrooted on 14th April when I threw them out because I wanted the space in the boxes for other cuttings.

While these propagating attempts are certainly not conclusive it would appear that the Whitlands form of Helipterum anthemoides will propagate with good results from cutting material containing a portion of the basal cambium layer if the plants are growing in soil (roadside 1989 and garden 1991) but little, if any, success can be expected from material taken from plants grown in soil-less mediums. It also seems as if the time of taking cuttings is not critical (November 1989 and March 1991).

Since this is such an attractive plant and does well in cultivation in this district at least (north-eastern Victoria), I will be trying to propagate more plants in future and probably over an extended period - say early spring to late autumn - and this may produce some more reliable information on the propagating of this form.

Footnote: The three plants potted up on 21/3/91 from the new growth cuttings from the Debco Potting Mix plant are still healthy as at 3/5/91 but have, so far, made no new growth.

All the basal cambium layer cuttings potted up (one on 30/3 and nine on 13/4/91) are looking good and the new growth from the base has grown further.

SUMMER WATERING (refer to June 1990 Newsletter)

by Colin Jones.

In regard to Helipterum albicans f. purpureo-album I am now finding that with full sun and a mulch of pine shavings to maintain moist soil the flowering period is still going in May at Orange in New South Wales. By contrast the seed source (which is at Trunkey, some 70km south-east of here) was finished by late January, with the plants shrivelling up waiting for the next rains.

In another article in the June 1989 Newsletter (NL24,p.30) I had said that I would continue to experiment with H.albicans looking for a hardier form. Well, I believe that H.albicans f. purpureo-album fits this requirement and is well worth including on a sunny edge of your garden. As the name implies, it has purple buds, white flower-heads and yellow florets which do provide a nice high spot in the garden.

(Please note that Colin presented us with a "Toxed Paper Bag" of this seed which germinated like a dream in no time at all and grows on with passion (in tubes at least) ... Ed.)

BRACHYSCOME PARVULA - BRACHYSCOME IBERIDIFOLIA

by Beth Armstrong.

Last spring I had a pot of beautiful dark purple B.parvula on a bench with other prized daisies. Between Christmas and New Year we were on holiday and the pots were watered by an automatic sprinkler. Unfortunately, I had not anticipated the extremely hot weather and the subsequent low water pressure, and several plants (including B.parvula) died.

Hoping for a miracle resurrection, I cut the plants back and kept them watered. Seedlings appeared quickly (no, I don't know how quickly because I was hoping for regrowth) but it was soon obvious that they were not parvulas. They grew fast and in no time I had a handsome pot of B.iberidifolia in full flower — the seed had spread from a nearby plant. They are still flowering in June, but lately the aphids have caused some distortion of the foliage and flowers.

I think that cutting back the dead plants increased the light to the seeds and triggered germination.

P.S. I am waiting to see if any of the seedlings, grown from seed I had collected earlier from my B.parvula, will be as good as its parent. There were several plants in the pot so I don't know what my chances are.

REPORT FROM OUR MAN IN ENGLAND

by Jeff Irons.

Last April the Newsletter's long arm reached out half way round the world, and 'requested' a contribution from me. This is it.

Brachyscome nivalis seems as good a starting point as any. In 1989 when on a summer visit to Kew Gardens I noticed a squitty little plant at the side of a path on the rock garden. It was the middle of a drought and the label declared the miserable specimen to be Brachyscome nivalis coll. Mt. Baw Baw. Kew's rock garden is being reconstructed. In future it will have streams and a bog. Perhaps then a more suitable home will be found for that gem from the Australian Alps. The 1990-91 northern winter was not good to my garden. Much of it was under water for nine weeks, and all was frozen solid for two weeks. B.nivalis did not like that treatment, and died. B.tadgellii was unaffected, and because of a cold spring did not flower till mid-May. I find that its flowering season is much shorter than that of B.nivalis. The latter blooms continuously up to the end of August.

The colour forms of Olearia phlogopappa always give a good display, but this year they were exceptional. In Britain it is usually said that the colour forms of O.phlogopappa are less hardy than the white ones. However, mine were mainly untouched by the severe weather of our 1990-91 winter, but some of the white ones received leaf damage. I ascribe the lack of damage to the dry weather of the 1990 summer, and an October frost. The latter would have caused the plants to 'shut down' for the winter. Pink is thought to be the least hardy colour. I have had two pink forms; the nicer one died in its first winter, the other (which came from Kew) has a good hint of purple in it (RHS chart 78C). Nevertheless it is hardy and last year flowered into December and began again this March.

Smell is another aspect of O.phlogopappa that I find puzzling. My two specimens of the variety subrepanda were grown from Tasmanian seed. They used to have the 'cat-wet' smell which is common in the species. In 1990, however, one of them had a strong and pleasant smell. The other, next to it, had a slight 'cat-wet' smell. In May 1991 I noticed, for the first time, a pleasant smell from my dark lavender specimen — but not from the pale lavender one. I wonder whether the smell changes as soil nutrients get used up.

Olearia lirata is usually regarded as not hardy in Britain. My four specimens are of a form seen by Dandenong Creek. They were grown from Pinewood Drive seed. This year they flowered for the first time. The blooms were small, and were not displayed well. Unless next year's performance is better, the plants will have to come out. They suffered moderate frost damage last winter and seedlings given to Liverpool University's Botanic Garden were killed.

In autumn 1990 I noticed seedlings in a pot of Hilda Crouch's Ozothamnus ledifolius seed, but was unable to overwinter them. More came up in March 1991, but were eaten off in May by a snail which had managed to get onto the seed bench.

The craspedias flowered in June. The first was one which Alf Salkin described as "grey leaf 18cm x 1cm". Both last year and this my plants have leaves 22 to 23cm long. Their flowers are a good bright yellow. Perhaps the best garden plant among the craspedias is Alastair Lockey's species from Mt. Kosciusko.



Olearia frostii x 1.

I used to have a form of Olearia frostii from the Munich Botanic Garden. Rodger Elliot said that it had small flowers. It died in 1989 and has been replaced by seedlings from Barbara Buchanan's collections. All are doing well, but have yet to flower. They were uninjured by the severe 1990-91 winter. That is significant because in Britain O. frostii has the reputation of being tender.

Helichrysum alpinum germinated this year. It is too early yet to ascertain what the seedlings are. A previous germination turned out to be Ozothamnus secundiflorus, and is planted close to a plant of that species from Alf Salkin's seed. Both have yet to bloom. I find that they need regular spraying to control aphids.

Olearia lepidophylla is perhaps a collector's plant. At last I have found a home for it - in a dry spot against the house wall. There it survived last winter.

Once again O. ciliata seed has failed to germinate. Perhaps one day I shall get viable seed. That will probably be the year when I actually obtain O. iodochroa - in other words the year of a Preston Guild!

Helipterum albicans var. incanum can be bought here from a Scottish nursery. It is winter hardy, but I've never been able to make it more than a biennial. The form is quite small, with leaves up to 4cm long, and the whole plant no more than 8cm high.

Finally I turn to another Brachyscome. This spring I noticed the leaves of a small brachyscome which I call Brachyscome (Mt. Wilson). Thinking that the tiny scattered leaves were seedlings I dug them up. They were in fact all on stolons that had survived the winter. Now I have an incentive to work out exactly which species this diminutive plant is.

ERODIOPHYLLUM ELDERI - Removing Seed from the Fruiting Head

by

by Irene Cullen.

I requested seed of E. elderi from the AD SG seed bank and was sent two rock hard seed heads, with instructions to place in boiling water and leave for 36 hours. Even so, I found the seed very hard to remove. One head was given this treatment.

With the other I followed the advice of member Pat Shaw's late husband, Harvey. I recalled he said to squash it in a vice. I was less subtle; I took my meat mallet and chopping board, gave it a sharp blow and was able to remove the seed. (No, I'm sorry, I didn't count them.)

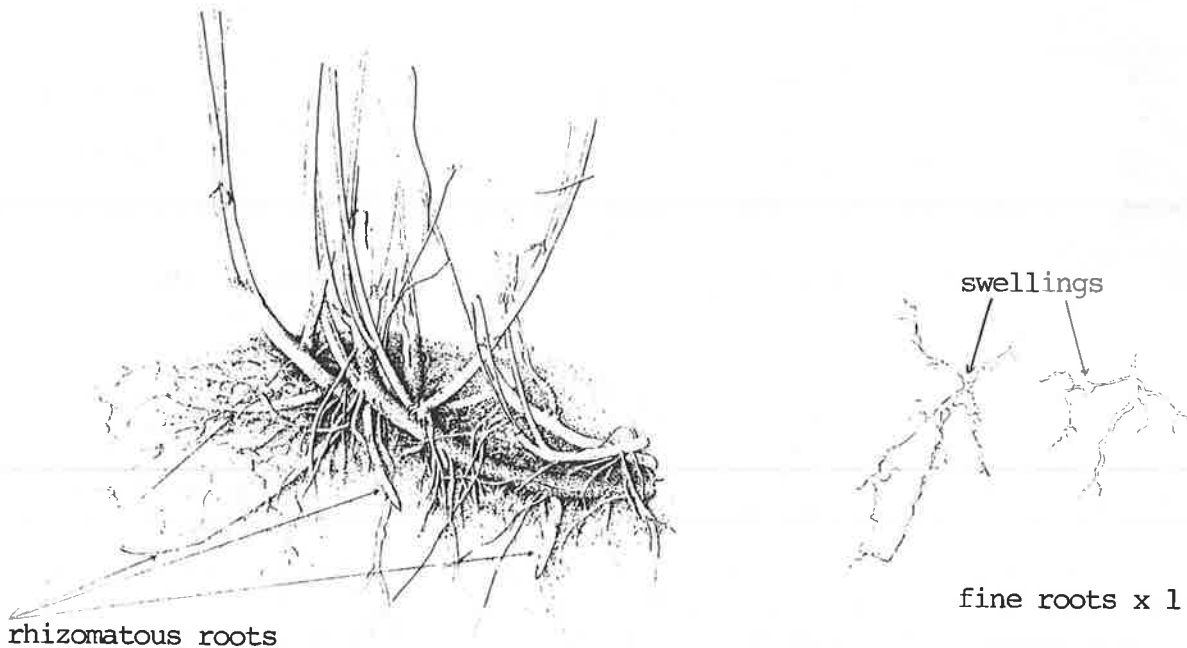
I planted both lots separately, using the bog method, in full sun. Result - soaked seed - 1 after 10 days and unsoaked seed - 7 in 6-14 days. The sun was very strong at that time, the end of March.

I am not inferring that the unsoaked method resulted in better germination. I just found it easier to extract the seed. Elliot and Jones in the Encyclopaedia of Australian Plants suggest cutting the fruit with a knife to remove the seed and say no further treatment is needed.

ADVENTURES WITH THE ROOT SYSTEM OF BRACHYSCOME BASALTICA VAR. GRACILIS

(from letters written by Gloria Thomlinson)

(3/5/91) ... Brachyscome basaltica var. gracilis has been a mass of flowers for ages. My plants are the local ones found around the rivers here. I dug up a plant to see if the roots were rhizomatous and have drawn the root system. This is how it behaves underground. Mine has little nodules on the fine roots. Are these nematodes or does it have nitrogen fixing abilities?



Brachyscome basaltica var. gracilis x 2/3

(4/5/91) ... Elliot and Jones in the Encyclopaedia of Australian Plants say that a few non-leguminous plants can fix nitrogen, e.g. Casuarina species. There is an illustration of root systems in acacias, with and without nodules. Under a glass they look like what I was seeing.

Nematodes apparently like moisture and prefer infertile soils. They cause yellowing of leaves because the uptake of water and nutrients is disrupted and this results in the stunting of plants. My plants show none of these symptoms, but it could be a fresh infestation, I suppose.

(2/6/91) ... I would bet on something nasty in the root system of B. basaltica var. gracilis. Not that the vigour of the plant is impaired yet because there are numerous underground shoots - many more than when I last looked. Since I first noticed the nodules on the fine root system there has been a change from little round nodules on fine roots to distorted roots now branching out from what I think were original nodes. I have enclosed a sample of this distorted material. The whole clump is still flowering well.

(Not long after Gloria sent this sample I had the brilliant idea of slicing a thin piece off one of the nodules and looking at it under my "new" microscope. I saw a lot of very thin, clear, hairlike, linear structures with vertical partitions. Next day I met Gretna Weste at the Great Ocean Road Appeal Launch and asked her what nematodes looked like. She said they were very narrow, transparent, segmented worms, pointed each end. Oh, no! I wrote to Gloria with these evil tidings and telling her that Jeanette Conacher in Pests, Predators, and Pesticides suggests that plants are burned or put in the bin and the soil is sprinkled with kaolin or sugar (among other things). Meanwhile, Gloria had the same brilliant idea of looking at the problem under her own microscope, this time using live material. She saw worm-like things appearing from the tips of soft, white, roundish structures and decided they were indeed nematodes. J.B.)

(24/6/91) ... I am declaring war on nematodes by pulling out a most healthy-looking, infested plant of B. basaltica var. gracilis while refusing to enquire about the situation under another of this species one yard away. Much sugar has been sprinkled on this area of the garden.

(8/91) ... Did you know that there is a spray for nematodes? "Nemacure".

DAISIES IN THE PACIFIC STATES OF NORTH AMERICA

by Esma Salkin.

On my recent trip I was too early for spring flowering in the cooler areas and it was only in the desert areas of southern California that I saw massed flowers reminiscent of some of our arid areas in a good season. To the north, in the conifer forests of Canada and on rocky hills below the snowline, there was promise of good things to come.

There's a bonus from sitting on the ground peering at plants as you consult the Field Guide. You notice things like the seedlings of flowers next in the flowering cycle. From the myriads of seedlings maturing I could visualise the scene - a slaty tor covered with masses of pale mauve Erigeron peregrinus. Meanwhile there was much for me to admire - saxifrages, anemones, pale yellow Louseworts, the common little herb Dryas drummondii with its nodding bright yellow heads, and Senecio cymbalaroides with a cluster of bright orange flower-heads standing 15cm above a basal rosette of spatulate leaves. Everywhere in this spring garden was the dainty little Erigeron compositus. This was an old friend, my first daisy of the snowy regions. I had found one lone plant growing in shale scree on the shore of an Alaskan lake some weeks earlier. This daisy is about 15cm high, with white terminal flower-heads ascending from a basal rosette of fine pinnate leaves.

The most common daisy seen in the conifer forests of Canada was Arnica cordifolia, which grows 30-75cm high. Leaves are large, pale green, heart-shaped, low on the stem and they clothe the forest floor. A large, terminal, bright yellow flower (with maybe a couple of lateral ones) is 6-8cm across. This species is a good coloniser, prefers disturbed sites and is a grand sight as you stroll the forest trails.

In the desert areas of southern California we saw our first expanse of massed blooms. As we entered the Joshua Tree State Park we were greeted by the lemon Dandelion-like Malacothrix glabrata, other species were lemon tipped with white, white ones and a lowly clump, White Woolly Daisy, Antheropeas lanosum. In another dry region the small golden annual Coreopsis bigelovii masked huge areas of desert sands. One daisy species I could soon readily identify was Goldfields, Lasthenia chrysotoma, a bright orange coloniser of woodland and open pasture. It grows to about 10cm.

Perhaps the most remarkable daisy I saw was Coreopsis gigantea. This grew to about 1m, with a big thick trunk supporting a rounded mass, 0.75 x 0.75m. Bright yellow flower-heads, 6-8cm across, covered the whole bush. Dozens of these plants on coastal dunes were a spectacular sight. This very extensive dune system had been saved from a nuclear power station many years ago by a remarkable eighty-three and a half year old lady. She was recovering from a second hip fracture and, as we escorted her up and down the steep unstable dunes, she remarked "I really think three tours in a week is too much!"

Probably excluding Alaska, the most widely grown daisy was Brachyscome multifida var. dilatata. I noticed this in a planter at the entrance to a collection of plants in a Canadian Heritage Garden in Vancouver and this suggests it's been grown for decades. Helipterum anthemoides 'Paper Baby' and two forms of Helichrysum apiculatum were struggling in a low lying site at Huntington Botanic Garden, Pasadena. This location was not suitable for Australian flora, the horticulturalist lamented, and her plans to greet us with a bed of Helipterum roseum were stymied by a "tidy" gardener. At Santa Cruz Arboretum south of

San Francisco Helipterum anthemoides 'Paper Baby' fared no better — it was out in full sun on rock hard sandstone soil. The Calotis scabiosifolia var. integrifolia alongside was thriving and blooming well, as were Brachyscome angustifolia var. heterophylla (? Mt. Lind form) and B. formosa. I was very surprised to see this latter species in a hanging basket of mixed species at the University of British Columbia, Vancouver. It looked very attractive with long tendrils and magenta flowers cascading down over the edge. (I've since put one in a hanging basket.) In America this species seems to be known as B. melanocarpa as I read in an article in a popular American home and garden magazine.

Misnomers in the horticultural industry are hard to change. When I spied a floriferous white shrub in the flower beds at Filoli I dashed across to read the label and, sure enough, "Olearia scillonensis". This is a form of Olearia phlogopappa selected on the Scilly Isles many years ago (see NL24, p.31).

I was privileged to join SGAP members invited to speak at the annual conference of the Californian Society for Growing Australian Plants. Our Californian host feted us well — arranged tours to private and public gardens, to nurseries, and arranged for local experts to be on hand to show us a marvellous wildflower display in the mountains, in the desert and on the coast. We were fortunate to spend four weeks with fellow wildflower lovers and experience their excitement when they found a rare or rarely seen species.

MEMBERS' REPORTS

Colin Jones (from Orange, NSW) writes on 6/8/91:- "The locals keep assuring us that we haven't seen winter yet, even though day temperatures have been as low as 3°C, but are mainly around 5-10°C. Last Friday week (26th July) gave us a beautiful frost — everything was white on Saturday morning, minus 5°C. In the fibreglass house it was minus 3°C. What was the cost to the plants?"

B. sp. (Bemm River) — top leaves burnt.
B. multifida (low compact form) — top badly burnt.
" " " (Cape Conran) — medium burn.
" " " (Evan) — badly burnt.
B. segmentosa — badly burnt.
Helichrysum subulifolium — badly burnt.
Helipterum splendidum — flowers badly burnt.
Myriocephalus helichrysoides — badly burnt.
Olearia argophylla — top leaves burnt.
O. tomentosa — immature branches sagging.

It will be interesting to watch and see whether the plants recover. ... We had above average periods of warm weather up to the beginning of July — with an occasional 0°C of frost thrown in. The result was that many plants took on a spring flush. It's amazing how much colour there is in the daisies at the moment."

Jeff Irons (from Heswall, England) writes on 15/7/91 an addendum to the comment about changing smell on p.48. "My father had a greenhouse which he used for Argyranthemums (florists' chrysanthemums) in the winter and tomatoes in the summer. After fifty years my memory of what he did is hazy. I think that he may have changed the soil every three years. however, that would be a big job, so perhaps it was that he sterilised the soil every three years — or did he sterilise the soil every year and dig in horse manure every three years? What I do remember though is that the first year after the 'event' the tomatoes were acid. By the third year they were nice and sweet. Presumably sweetness was linked to some change in soil states."

Corinne Hampel (from Murray Bridge, SA) writes on 7/6/91: "I can't tell you how much pleasure I have in raising and growing daisies!!

The brachyscomes are in, and I put in some that I had left from last year's

order of seeds, and some B.ciliaris which I collected from the outskirts of Murray Bridge. They germinated within a few days - sowing in April. We had a very mild autumn this year.

I borrowed the Daisy Group's newsletters from Colleen Simpson last year and photocopied them. I've found them a great reference. I had about 100% germination of B.bellidioides but couldn't find anything about the habit to know where to put the seedlings. Saved by the newsletters!

I've come to the conclusion that Olearia pannosa needs to be cut back almost like a perennial. When the cooler weather began two of them shot from the base in the way of a perennial. Olearia tenuifolia seems to do quite well in the poor gravelly limestone mounds I have them in.

I read that Helichrysum leucopsidum is difficult to germinate. I collected quite a lot of seed last summer so must persevere. Helichrysum bilobum was very pretty last summer. I am attempting some seed of that and also some of Cassinia uncata.

My aim has been to raise as many mallee daisies as I could. I found Olearia lanuginosa last summer and have some cuttings in. I'm trying some seed also."

KOSCIUSKO TRIP

The indefatigable Salkins will be staying at the YETI SKI LODGE in Perisher Valley from Sunday, February 9th. to 16th. They expect to lead expeditions in the area from that base. There are eight double rooms, each with its own bathroom. Tariff is \$9 per head or \$45 per week. Book through Natalie Peate at (03) 876 3648 at night or (03) 876 1097 in the daytime.

PLANT INDEX OF 1991 NEWSLETTERS, Nos. 29, 30 and 31

(The NL no. is followed by page no. in brackets. Illustrations are in **BOLD.**)

Annobium alatum 29(9)
 Asteraceae list (Mt.Baw Baw) 30(31)
Astridea athrixioides 29(4)
Brachyscome aculeata 31(45)
angustifolia 29(10-13,15),30(26,32,33)
 31(52)
basaltica 31(50,51)
bellidioides 29(6),30(24)
campylocarpa 30(32)
campylocarpa C 29(17),30(32)
 sp. aff. campylocarpa 30(32)
ciliaris 29(14,15)
ciliocarpa 29(14)
 aff. curvicarpa 29(14),30(27,28,33)
dentata 28(53),29(15)
dichromatica 29(14),30(25)
diversifolia 29(1),30(33)
formosa 29(10-13),30(26,33),31(52)
 aff. formosa 29(11-13),30(32,34)
goniocarpa 30(25)
gracilis 29(1)
graminea 30(34),31(39,41)
halophila 30(24)
iberidifolia 31(48)
lineariloba 29(14),30(25,32,34)
melanocarpa 29(15),30(31-33),31(45)
microcarpa 31(37)
multifida 29(14,16,17),30(32-35)
 31(51,52)
nivalis 29(1),30(34),31(48)
obovata 30(31),31(41)
parvula 30(34),31(37,47)
ptychocarpa 29(15)
radicans 30(34),31(39,40,41,42)
rigidula 30(34)
segmentosa 29(1,14,15),31(52)
spathulata 29(14,15)
stolonifera 31(41)
stuartii 29(15),30(27,28)

Brachyscome
tadgellii 28(53),31(41,48)
tetrapterocarpa 30(23,24,32)
 'Valencia' 29(1,16)
 whitei 29(3,4)
Calotis inermis 29(4)
 scabiosifolia 31(52)
Cephalipterum drummondii 31(44)
Craspedia chrysantha 29(8)
 glauca 29(16)
 globosa 29(8)
 Daisies for cut flowers 29(7-9)
Erodiophyllum elderi 31(49)
 Frost Damage 31(52)
Helichrysum acuminatum 29(9,17)
 alpinum 31(49)
 apiculatum 30(33),31(51)
 bracteatum forms 29(8,9,17)
 buftoni 30(22)
 costatifractum 30(22,23)
 cuneifolium 30(30)
 davenportii 29(13,14),31(44)
 diosmifolium 29(16),30(30)
 diotophyllum 29(16)
 elatum 29(17),30(30)
 ledifolium 31(48)
 lindlevi 31(44)
 milliganii 29(5,6)
 obcordatum 29(6)
 papillosum 30(34)
 purpurascens 30(21,22)
 reticulatum 30(22)
 selaginoides 29(13)
 semifertile 30(33)
 scorpioides 29(16)
 scutellifolium 31(38,39)
 semipapposum 28(53),29(8),30(33)
 subulifolium 29(9),31(52)
 viscosum 30(33)

Helipterum albicans 29(17),31(47,49)
 anthemoides 29(8),31(46,51,52)
 condensatum 29(14)
 fitzgibbonii 28(53)
 humboldtianum 29(17),30(34)
 jessenii 30(33)
 manglesi 29(16),31(44)
 polygalifolium 29(14),30(25),31(42,43)
 roseum 29(8,16,17),30(34),31(44,51)
 rubellum 31(45)
 splendidum 31(52)
Hyalosperma cotula 31(44)
 Hybrids 29(1,14,15),30(25-28)
Ixodia achillaeoides 29(9)
Myriocephalus querinae 30(34)
 helichrysoides 29(14),31(52)
 Nematodes 31(50,51)
Olearia argophylla 31(52)
 ciliata 31(49)
 frostii 31(49)
 lepidophylla 31(49)
 lirata 31(48)
 pannosa 29(7)
 phlogopappa 31(48,52)
 scilloniensis 31(52)
 tenuifolia 29(2)
 tomentosa 31(52)
Ozothamnus costatifractus 30(22)
 ledifolius 29(17),31(48)
 purpurascens 30(22)
 secundiflorus 31(49)
Podolepis sp. 30(33)
 Propagation
 from cuttings 29(6);31(46,47)
 " seed 29(9,13,14),30(29,34)
 31(44,45,54)
Schoenia cassiniana 31(44)
 Seed collection 30(31,32)
 Snails (native) 30(29)
Waitzia spp. 31(44)

SEED LIST

ADDITIONS * denotes garden or commercial seed.

Brachyscome nova-anglica*, parvula*, procumbens*, segmentosa*, tetrapterocarpa*.
Craspedia globosa, Helichrysum alpinum, elatum, filifolium*.
Helipterum albicans var. incanum f. purpureo-album*, anthemoides (snowy Mountains)
charsleyae*, roseum var. nigropapposum*.

DELETIONS

Bedfordia linearis, Brachyscome graminea, nivalis.
Helichrysum bracteatum (Siam, Barrington Tops*), rogersianum.
Helipterum anthemoides (Higgins Plains), stipitatum.
Helipterum involucreatum (now Erymophyllum ramosum ssp. involucreatum).
Hyalosperma semisterile. Leptorhynchus squamatus.

A STAMPED, SELF-ADDRESSED ENVELOPE MUST BE INCLUDED WITH EACH REQUEST FOR SEED.
Please write to Esma Salkin, 38 Pinewood Drive, Mount Waverley, 3149.

Seed is for sale to non-members at 50c per packet. Larger amounts may be bought by arrangement. Most seed for sale comes from cultivated plants or from commercial sources.

SEED DONORS

Many thanks to the following members (and their relations) for seed donations:-

Betty Campbell, Corinne Hampel, Jeff Irons, Colin Jones, Christina Leiblich, Bill Owen, Esma Salkin, Maureen Schaumann, Julie Strudwick, Gloria Thomlinson (and her mother).

NEW MEMBERS

We wish to welcome the following new members:-

Lotte von Richter, 60 Panorama Crescent, Blaxland, NSW, 2774.
Myall Park Botanic Garden Ltd., c/o Joan Schwenneson (Secretary),
"Telqazliel", Surat, Qld, 4417.

SUBSCRIPTIONS

Subscriptions are \$5.00 per year or \$10.00 for overseas members. Cheques should be made payable to the Australian Daisy Study Group and forwarded to the Leader or to the Treasurer, Bev Courtney, 3 Burswood Close, Frankston, Vic, 3199. Fees are due in June each year. If you intend to resign, please notify Esma as soon as possible because she has a waiting list.

GREEN BRACHYSCOME SEED WHICH GERMINATES

(List compiled by AD SG members)

Green seed of the following Brachyscome species was found to ripen later and to germinate (provided the fruits looked reasonably mature when they were collected) - Brachyscome ciliaris, decipiens, exilis, graminea, obovata, spatulata, stuartii, tatei, and whitei. Please let us know if more names should be added.

NEWSLETTER DEADLINE

Deadline for the March newsletter is 1st February, 1992. Please send articles to Judy Barker, 9 Widford Street, East Hawthorn, 3123. My thanks to all contributors.