ISSN 0818 - 335X
March, 1996

ASSOCIATION OF SOCIETIES FOR GROWING AUSTRALIAN PLANTS

THE AUSTRALIAN DAISY STUDY GROUP NEWSLETTER NO. 44

Brachyscome aff. *cuneifolia*

(Derrinallum) x 1/2

CONTENTS

OFFICE BEARERS

Leader: Judy Barker, 9 Widford Street, East Hawthorn, 3123. Tel (03) 9813 2916, Fax (03) 9813 1195.
Treasurer: Bev Courtney, 3 Burswood Close, Frankston, 3199.
Conservation Officer (including ADSG Herbarium Curator and Provenance Seed Co-ordinator):
Esma Salkin, 38 Pinewood Drive, Mount Waverley, 3149. Tel (03) 9802 6213.
Expeditions Organisers:
Esma Salkin,
Joy Greig, 10 Stanfield Court, Glen Waverley, 3150, Tel. (03) 9802 5990.
Displays Organiser: Maureen Schaumann, 88 Albany Drive, Mulgrave, 3170. Tel (03) 9547 3670.
Newsletter Editor: Judy Barker.
Everlastings Project Co-ordinators: Natalie Peate, 26 Kardinia Cres., Warranwood, 3134.
Bev Courtney
Judy Barker

PLANNING for NEXT MAJOR PROJECT

Our next major project will be the evaluation of a group of everlastings for horticultural potential, for use as cut or dried flowers and to see how they grow generally. It is visualised that this project will extend over five years and will include all species in the following genera: *Cephalipterum, Chrysocephalum, Hyalosperma, Lawrencella, Leucochrysum, Rhodanthe, Schoenia* and *Waitzia*. The information gathered from all over Australia should culminate in a book which will be based on the format of *Australian Brachyscomes*, but we hope with more colour. We will need a great deal of help and we hope that as many members as possible will take part in this project, even if only on a very small scale; members who feel that they can make only a small contribution to the project will be most welcome.

The eight genera will be divided into three groups, and three co-ordinators (Bev Courtney, Natalie Peate and Judy Barker) will be responsible for each group.

Bev's Group comprises *Chrysocephalum* (7 spp. including 2 subspecies), *Schoenia* (5 spp. including 3 subspecies) and *Waitzia* (5 spp. including 4 varieties).

Natalie's Group comprises *Cephalipterum* (1 sp.), *Hyalosperma* (9 spp. including 4 subspecies), *Lawrencella* (2 spp.) and *Leucochrysum* (5 spp. including 1 subspecies and 3 varieties).

Judy will have Maureen as assistant co-ordinator, and their Group will comprise only *Rhodanthe* (46 spp. including 7 subspecies).

Each group contains some perennial species. Since 1981, when ADSG was founded, many of these species have been collected, but there are still many species for which we have neither specimen nor seed. In the case of easily collected species the Study Group will try to obtain seed from several different areas because some will be easier to grow than others. For instance, *Rhodanthe polygalifolia* from the Mildura district is easier to germinate than that collected from Maccullochs Range east of Wilcannia.

Some species, e.g. *Lawrencella davenportii,* do not germinate readily in cool climates like that of Melbourne, and may not grow on in winter. It will be interesting to trial them in the hotter, drier climates of South Australia and elsewhere.

The aim of the project is to find answers to the following questions:

- Which species have horticultural value?
- Which species are useful as dried or wired specimens?
- Which species make good cut flowers?
- Size and habit of plants in cultivation?
- Size of head or cluster in cultivation?
- How do species perform in gardens?
- How do species perform in pots?
- Does seed germinate well?
- What are the best conditions for germination?
- When is the best time to sow seed in various climates and conditions?
- If species are difficult to germinate are there strategies which will break dormancy?
- Will harvesting seed over three generations improve the speed of germination and/or number of seeds germinating?
- What are the best conditions for storing seed of each species?
- Do cuttings strike well?
- When is the best time to take cuttings in various climates and conditions?
- What is the best plant material to use for cuttings?
- Do the subspecies within each species hybridize with each other?
- Is it possible to hybridize species within a genus?

Each member who wishes to take part in this project should choose a group, and should then write to the appropriate co-ordinator for seed and instructions. Please indicate how many species you are able to trial, and whether you have a preference for working on a particular genus or species within a genus. The co-ordinators will be equally happy if members have no special preferences, because then they can match species with climate or problem species with members who like challenges. Members who have no particular group preference should indicate this, and will be allocated to an appropriate group on the basis of geographic location.

Addresses of the co-ordinators appear under 'Office Bearers' on the first page.

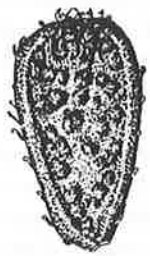
SPECIES or FORMS NEW to MEMBERS

Brachyscome microcarpa (Yamba, NSW)

Seed of this form was collected at the end of August 1993. A few plants were scattered among introduced grasses on an exposed headland. Only a little native vegetation was present but the grasses protected this brachyscome from adverse weather conditions. *B. microcarpa* would be competing with grasses for nutrients and space, rendering widespread regeneration of this species impossible.

I have now been growing this species for two seasons. Over the first season most plants remained in pots but a few were planted out in a sunny spot in the garden in early summer. This area is low-lying and acts as a rill after heavy rain. Water is slow to drain away, so at times plants sat in water for 24 hours. These plants are still alive, although not thriving.

In March 1995 I prepared more provenance seed for sowing and, with the aid of a microscope, selected 25 plump, black, presumably viable seed. Contrary to my usual custom I tossed in the 'trash' as well, i.e. small malformed fruit. Seed was sown on a mix 90% coarse sand and 10% cocopeat. The pot was immersed in water overnight, so the seed was well saturated. Pots were then placed on a gravel bed in the poly-house and hand watered with an atomiser spray as required. Germination took 6–11 days with 42 seed germinating! The 'trash', small seed, originating from disc florets was apparently viable.



Brachyscome microcarpa (Yamba, NSW) x 1 Fruit x 20

Seedlings of this *B. microcarpa* grow as small tufted plants which bloom freely within 6 months. About 20 seedlings were planted closely in a garden bed facing south and west. These plants bloomed well from September to October, yielding full heads of black seed. Since harvesting the seed, plants have put on new growth, sending out long leafy stems over the surface of the soil. A careful examination of my plants has not revealed any suckering although the form of the plant suggests that stems would be easy to layer. Spasmodic blooms are now reappearing on the plants (January). *B. microcarpa* benefits from close planting or mulching and protection from afternoon sun in summer.

B. microcarpa is a small procumbent perennial with branching stems. Basal leaves on seedlings are lobed and almost circular. As the plant matures the lobed leaves elongate and become narrower. They are 1–3cm long and 0.3–1cm wide and are sessile. Flower-heads about 2cm across have mauve or mauve-pink rays on flowering stems about 5cm long. Fruit is black, the faces covered with tubercles, and they have no wings. A short white pappus is present.

As stated in *Australian Brachyscomes* (p. 144), this form of *B. microcarpa* has a closer affinity with inland forms at Tingha and Tenterfield than with coastal forms further south. These more southerly coastal forms have brown seed.

*****

FURTHER COMMENTS ON *OLEARIA ASTROLOBA*

Olearia astroloba has been growing in my garden for nearly three years. Three plants were planted against the brick wall of the house under a south-west facing eave, and two were planted in a similar situation but were facing north-west. In both cases plants had a cool root run. Two of the plants facing south-west have since died, probably because they were over-run by *Scaevola* 'Mauve Clusters'. The plants with the north-westerly aspect have thrived and the root cover here is more open.

A couple of weeks back I noticed a seedling in the garden about 1 metre from the parent plants. *Olearia astroloba* does set seed in the garden although the seed set is low. These seeds germinate well. A hybrid between *O. astroloba* and *O. adenophora* (now dead) was inadvertently produced (see NL 42, p. 19). *O. astroloba* may prove to be easier to cultivate than first thought.

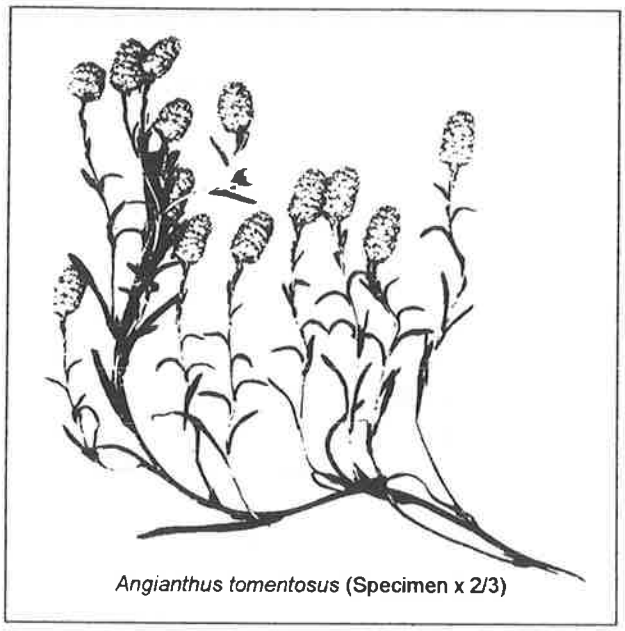
Esma Salkin

****

Angianthus tomentosus

HAIRY CUP-FLOWER, HAIRY ANGIANTHUS

(NSW, Vic, SA, WA)



Angianthus tomentosus (Specimen x 2/3)

At the November meeting two pots of a plant labelled *Chrysocoryne pusilla* were offered as swaps. Beth Armstrong had brought them back (together with a box full of other interesting plants for ADSG) from kind John Barrie at Coonalpyn in South Australia. Maureen and I put in bids for these two pots as we are very partial to plants with compound heads. Maureen observed that it had a look of *Calocephalus citreus* about it.

When I sat down with all my references around me to write about this plant for the newsletter I first found that *Chrysocoryne pusilla* (Benth.) Endl. was now *Gnephosis tenuissima* Cass. My method of identification is to write down a description of the plant with the aid of the hand lens, the ruler, and the microscope, and then to compare my description with that of the reference material. Of course, I often miss salient points and have to go back to look again, sometimes many times. In this case, with the best will in the world, I couldn't find any scale-like glandular hairs on the leaves, which should be present on *Gnephosis tenuissima,* but I could find cobwebby hairs which were dense at the tops of stems. A pappus was present but it did not look quite like that of *G. tenuissima.* In the *Flora of South-eastern Queensland* there is the following note under *Chrysocoryne pusilla* — 'The above species is similar in appearance to *Angianthus brachypappus* F. Muell. but can be distinguished by its glabrous branches or branches with white scale-like hairs. *A. brachypappus* has white woolly hairs at least just below the compound heads.' Here was a clue, and I turned to look at my references on *Angianthus.* From the key in the *Flora of South Australia* it is *Angianthus tomentosus.*

This plant is attractive, 20cm x 40cm in a 15cm pot, with an open habit. The stems are reddish at the base and grey-green above, erect at first but, as they begin to branch and develop terminal heads, the weight pulls them down. Cobwebby hairs cover the stems but are sparse where the colour is red. The leaves are also grey-green, 0.7–3cm x 1–3mm, sessile, and oblanceolate to almost linear. The tips of the uppermost leaves bear short, transparent appendages. The flower-heads are lemon-yellow, later becoming yellow, cylindrical, 9–11 x 4–6mm, and quite profuse. One main stem in early January bears 17 heads. The fruits are not mature but it is easy to see that the pappus consists of 2–4 fan-shaped scales with jagged edges, which are each tipped by one bristle with plumose apices. The pappus is slightly shorter than the corolla, and this is another distinguishing character for *A. tomentosus.*

In the wild this species is said to grow from 3–25cm high and the habit is described as erect or ascending. The leaves may be longer, to 5cm, and each pappus scale may terminate in 2 bristles. *A. tomentosus* occurs in mallee, coastal scrub, woodland and around clay pans and saline depressions.

Our plants have flowered from December until now (early January). They will probably continue to flower for some time if they are watered. The flowering period is recorded as Aug–Dec in South Australia and Oct–Dec in the Victorian mallee. This species should dry well. It is a pleasing plant which I would be happy to grow again. Although *A. tomentosus* is an outbreeder, it is also self-compatible (Short, Dr. P. S., 1983), and so I may be able to collect a little viable seed from my single plant.

REFERENCES

Cooke, D. A. (1986). *Angianthus* Wendl. In Jessop, J. P. and Toelken, H. R. (eds) *Flora of South Australia* Part III, edn 4. pp. 1496-98.
Short, P. S. (1983). A Revision of *Angianthus* Wendl., *sensu lato* (Compositae: Inuleae: Gnaphaliinae), I. *Muelleria* 5(2): 143–183.
Stanley, T. D. (1986). *Chrysocoryne* Endl. In Stanley, T. D. and Ross, E. M., *Flora of South-eastern Queensland*, Vol. 2, p. 545.

Judy Barker

****

RESPONSE TO NL 43

by **Barbara Buchanan**

I was interested in 'Taming' species. I think it is pretty widely accepted that striking cuttings becomes easier; one factor must be the ability to get suitable propagating material, but I suspect there is a further subtle selection for forms which take kindly to gardens and which strike easily. With seeds, again there is the potential for selection of forms which germinate well, early, etc., so I was amazed at the Little Desert weekend when James Will from Burnley claimed that seed rapidly deteriorated with successive generations and would die out in seven generations unless fresh material was added. There is no doubt that this sometimes seems to happen — the most recent written reference I've seen was to *Eucalyptus leucoxylon,* which I remember because I have grown quite a few very disappointing plants from seed gathered from handsome trees around Melbourne.

But obviously *Brachyscome iberidifolia* has been improved, and presumably the populations are large enough in the commercial operation to ensure that a substantial gene pool is present. I had one experience at Kallista, however, where the self sowings dwindled to nothing over several years, although there could have been any number of reasons, not least slugs and snails. On the other hand I have kept *Brachyscome* aff. *curvicarpa* going for at least four generations without any deterioration so far, from a very restricted gene pool, i.e. few plants. Self sown ones that I noticed last autumn disappeared — slugs? — but ones I specifically raised survived the winter, only to be pruned by rabbits when planted out. This is a real pain because wire netting does destroy the look of the garden, but they have grown back to flower. One of the parent group of plants that was netted last year is growing strongly again.

In animal breeding an accepted practice is to start with a few good animals and inbreed regularly, culling heavily, to eliminate all weaknesses and undesirable traits, and finish with very uniform line. These lines can then be crossed and produce a form of hybrid vigour. The theory is that all recessive genes for undesirable traits or general non-viability are eliminated in the culling, so that once you have been through a narrow bottleneck your population can and will expand again with all healthy specimens. My reading over the years has given me the impression that this is how a lot of flowers have come into gardens, i.e. a few original introductions from the wild that were successful expanded rapidly into big garden populations. I sometimes wonder about the gene pools of some of our cutting-grown plants in cultivation; how many introductions of plants of *Grevillea willisii* would there have been? Luckily the Asteraceae, bless them, come from seed readily and probably have been brought in many times.

A recent *New Scientist* has an article on the size of gene pool needed for the survival of endangered animals. Over the past few decades molecular biology techniques have been used to show that most wild populations do have a variable gene pool, which is seen as an advantage in coping with a variable environment and adapting to change. Comparisons of the breeding success of captive inbred populations and wild ones showed that the breeding success in the former was greatly reduced, with infant mortality, sperm counts, sperm viability and disease resistance all contributing. Some successful wild populations, however, have a very narrow gene pool, interpreted as evidence that they have passed through a genetic bottleneck similar to those used in farm animal breeding. Elephant seals of North America, which were hunted almost to extinction last century but are now thriving with protection from hunting, are an example. Other animals seem to have had bottlenecks as long as 10,000 or so years ago.

So the prospects for conservation and survival from a few individuals seem to depend on the chance quality of the genes at the bottleneck stage. There is no reason to suppose that this does not apply equally to plant populations and it would seem there is no way to formulate a rule that *x* individuals are needed for survival other than the very general one, as many as possible, since each species will be different. For garden

purposes we can select for garden conditions and narrow the gene pool but for conservation of endangered species the trend is now to try and preserve as seed and reduce the number of 'garden' generations needed so that unconscious selection does not occur. Every now and then there is a concerted breeding effort in one group of garden plants but mostly progress is slow and the first selections, probably from chance mutations or perhaps crosses, always selecting for garden-worthiness. The *Australian Horticulture* which came this week has a feature on *Olearia 'Gogophlappa'* and mentions a few others. **There** is a group of plants with potential for selection and crossing.

I was also delighted with Jeff Irons' conclusions on colour. I still feel there is a little more to it as my now deceased bushes of *Olearia frostii* used to open whitish but darken as the season advanced and the flowers aged. Alan has often stressed that soil pH can vary, depending mainly on soil moisture which affects aeration and which is seasonal. In wet conditions soil can become anaerobic and bacterial decomposition produces a lot of organic acid, and pH drops. As soil dries, oxidizing organisms break down these acids, and pH rises. Whether it is enough change and/or fits in with the colour changes in my plants and with Jeff's observations, I must check later when there is more time.

I will try and do the 'petal' movement study but wonder about the hour before sunrise. Because of our N-S valley we don't actually see the sun till about an hour after it has risen on the plain, and similarly it sets earlier but I guess there is no need to be too precise. (In early January this is still not done because we don't have a working torch.)

It's been the loveliest flowering season I've seen here. Apart from frost losses (which I am trying to adjust to) things are looking good. Of course the weeds are also rampant and I simply cannot keep up, an hour or two of bending and my back complains mightily.

****

AN ADDENDUM ON COLOUR

by **Gloria Thomlinson**

Brachyscome basaltica var. *gracilis* sometimes has very pink buds. I persuaded Jock to walk with me to check out the plants along our stretch of the Broken River. The enclosed pressings are from the patch of plants we found at the edge of the river bank and a badly eroded area. I have taken cuttings. *Calotis scapigera* and a species of *Wahlenbergia* were flowering in the same area. My patches of the local *B. basaltica* var. *gracilis* have only a pale salmon tinge to the bracts.

(Gloria was not exaggerating; the bracts in her pressed specimen were almost red! She was wondering whether the information in Barbara's article might explain the difference in colour. The water level in the Broken River had risen just before she explored the area.)

****

REPORT ON DAISIES, LOCAL and OTHER, in WIDGIEWA ROAD via BUNGENDORE

by **Ros Cornish**

This spring has been great for the local daisies. We've had quite a lot of rain, an early warm spell in August, and then moderate temperatures in September/October. There are masses of *Leucochrysum albicans* (white) on the Captains Flat road and also on our block. They started flowering in September which is a bit earlier than usual. The *Bracteantha viscosa* are also fantastic this year, and those that I propagated from seed off our block earlier this year are about to flower as well. (Some had a short setback from the flower-eating wallaby/wallabies but seem to have recovered and as a result are multi-stemmed already.)

The *Calotis scabiosifolia* var. *integrifolia* (we think) on the Captains Flat road is also very spectacular this year. Masses of purple/blue flowers are clearly visible from the cars whizzing by. We've found many more than we originally thought were there. It's also been a great spring for a *Craspedia* sp. We've had carpets of them on the grassy area leading into our dam in the orchard. I should be able to get lots of seed from them. Another daisy, *Leptorhynchos squamatus,* which I'd forgotten about and didn't mention in my first letter, reappeared in abundance also in the moist area feeding into the dam. I've managed to collect lots of seeds so will try them out in the garden.

The *Brachyscome aculeata*, that I have grown from seed and cuttings from the original population on the Captains Flat road, are doing very well. Some flowered before I planted them out and cast seed everywhere. (John now has one growing in his punnet of *Calothamnus* seedlings!) Those that I've planted out are about to flower. It will be interesting to see what they do 'in captivity'. So far the wallaby (ies) haven't found them.

I had great success with the *B. diversifolia* var. *diversifolia* (Nowa Nowa, Vic '95) seeds that Esma sent me. Several flowered before I planted them out and those planted out are now in bud or flowering. They look very vigorous. So do the *B. scapigera* that I also got from ADSG. None have flowered yet but they are producing lots of leaves. Stay tuned.

I only ended up with three *Helichrysum elatum* (maybe *H. boormanii* Grafton-Armidale) seedlings. Although initially very vigorous in their pots they are not looking well in their spot in my daisy garden (a raised bed with a sand/soil/mushroom compost composition where last year *Bracteantha bracteata* reached 1.5m!). They are near my one remaining *Ammobium alatum* which seems to be gathering strength from the last wallaby chew! My four *H. rupicola* are also looking a little stressed (in the same location) and although one flowered briefly they are likely to be on the way out.

I had some success with *B. chrysoglossa* which we collected on a walk with the Growing Friends in the ANBG. Several have already flowered, both in pots and in the daisy garden. I hope to get some seed from them this year. We saw a good display of them in the ANBG a few weeks ago — I'm hoping they're relatively frost hardy and will over-winter for us.

I managed to get three *Calocephalus citreus* seedlings to the point of planting out, which I did last weekend in my new daisy bed. Not a good germination rate at all.

Thanks to Bob Magnus' response to our wallaby problems — nice to know we're not the only ones with this problem. We are seriously considering fencing an area around our septic tank and making it a feature sunken garden where we can put all the wallaby-attracting plants. Our kangaroo paws and daisies will be the first ones in there! A recent product on the market has met with some success — Multicrop bird and animal repellent. It specifically mentions wallabies as one of the animals it supposedly repels. The active ingredient is aluminium ammonium sulphate. Our experience is that it seems to protect the foliage (theoretically for up to eight weeks) but unfortunately the flowers are still vulnerable as they develop quickly and don't necessarily have any of the spray on them. What's a daisy garden without the flowers? I suspect Bob is right — fencing is the only solution.

The wallabies seem to have deserted us for a while — perhaps it's the repellent or perhaps there's plenty of other feed around (or someone else's garden!). We may, however, have another problem. Just before Christmas John called me out to the front garden where my daisies and kangaroo paws were recovering nicely. There were signs of digging near my *Brachyscome iberidifolia* and unmistakable evidence of a wombat! We have at least one wombat down at the creek — about 500m from the house — which is fine but in the front garden is a bit too close for comfort. Luckily nothing further has happened — I suspect it discovered that the area around the house is just about solid rock and having dug into my raised bed, which probably gave it some hope, it discovered solid ground underneath and gave up. Just as well — the Hortico repellent doesn't mention wombats!

****

A CLOSE LOOK at the *RHODANTHE* SPECIES *from BALLADONIA* by Julie Strudwick

I noticed in the key in *How to Know Western Australian Wildflowers* (1975) by Grieve and Blackall that there is an illustration of the receptacle of *Helipterum chlorocephalum* with a very pronounced cone in the centre — as though that is a diagnostic feature. There was no illustration of the receptacle of *H. roseum*. I decided to have a look at the receptacles of both forms and they are significantly different. *R. chlorocephala* subsp. *rosea* has a small cone topping a noticeably convex receptacle. *R. chlorocephala* (small white) has an almost flat receptacle with a sudden rise into the cone (rather like a Mt Fuji rising out of a flat plain). I've also noticed, while collecting seed of both, that the plumose bristles on subsp. *rosea* are longer and more prominent in comparison to the rest of the achene than in the little white one. This could, of course, be due to the relative size of the plants, although the achenes of both plants are otherwise very little different in size. There is also the **very** different growth habit — the WA key mentions the 'numerous simple stems' as well as the considerable height difference.

****

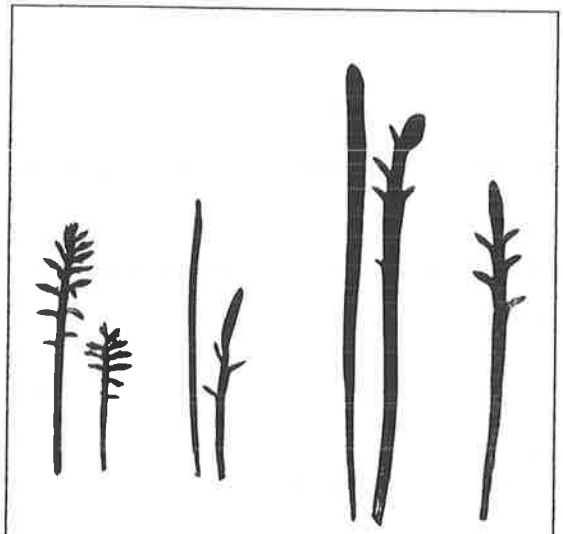
AUSTRALIAN BRACHYSCOMES

We have had several excellent reviews of *Australian Brachyscomes*: one from Tommy Garnett in *The Age*, one from Dr Don Foreman in the SGAP Vic December Newsletter, and one from Pat Shaw in the Queensland SGAP *Bulletin*. We expect that a few more reviews will appear shortly, and hope they will be equally encouraging.

BRACHYSCOME NIVALIS / BRACHYSCOME TADGELLII — A CONUNDRUM

by **Esma Salkin**

In January 1994, ADSG members set off on a half day field trip to Rocky Knobs at Falls Creek (Vic). We were to observe a population of a rare Victorian brachyscome. Once on Rocky Knobs we realised we should have allowed a full day for this excursion, and so we reluctantly dropped off the ridge to return to base for lunch. Seed of *Brachyscome nivalis* was collected on the descent. There were three batches of seed, two collected by one member and one by a second member. One batch of seed produced plants with atypical leaves.



i. *B. nivalis* ii. *B. tadgellii* typical form iii. Atypical form

Leaf prints x 2/3

I re-sowed 100 seed from each batch to observe whether there was variation in seedlings. No variation in seedlings was discernible in any of the batches. Each batch produced uniform seedlings but the cotyledons and seedlings of the batch with atypical leaves appeared to be *B. tadgellii* and not *B. nivalis*. There was some embarrassment amongst three members who all swore that the brachyscomes observed were *B. nivalis*.

Plants from the 'atypical' batch are now at maturity and, whilst they seem to be *B. tadgellii,* leaves illustrate more lobing and are much larger in all respects (see leaf prints). Is this hybrid vigour or is it a case of polyploidy and we missed seeing *B. tadgellii* among numerous *B. nivalis*?
I have re-examined seed from all batches and can detect no difference.

Seed in all cases appears to be *B. nivalis* but please note that seed of the two species are similar.

The resolution of this puzzle requires a return visit to the site for a more thorough examination. *B. tadgellii* would be expected to be within pollinating distance. Maybe there's another answer that is more complex. It does prove that botanising should not be hurried, doesn't it? We also wasted a lot of time deciphering routes on the map. My skills here are low.

****

DAISIES IN TERRIGAL (NSW)

by **Bruce Wallace**

(Bruce's daisy growing is confined to growing in pots since his garden is very small. He made a valuable contribution to the chapter 'Brachyscomes in Gardens' for *Australian Brachyscomes*.)

From the brachyscomes we grew last year we saved the seed and have grown the following: *B. basaltica* var. *gracilis, B.* aff. *curvicarpa, B. dentata* (syn. *B. heterodonta*), *B. gracilis, B. iberidifolia, B. parvula* and *B. tadgellii. B.* sp. (Darling Downs) from the Group's seed bank is a pretty little daisy growing well in both 6" (15cm) and 4" (10cm) pots.

From Sydney wholesalers we have picked up *B.* 'Just Jayne', a hybrid the ticket states between a species from the central NSW coast and one from western Queensland. It has pale pink buds and the palest pink flowers about the size of *B. multifida*. The growth habit is similar to that of *B.* 'Sunburst'.

B. nivalis, being alpine, was planted in an 8" (20cm) pot and this pot was placed in a 10 litre bucket filled with polystyrene beads to act as an insulator. This seems to be working as it is growing and flowering well. *B.* 'Lavender Mist' is a selected form of *B. ascendens* with lavender/blue flowers.

Other results of seed sown from the seed bank:

- *Craspedia variabilis* produced two plants and both have flowered though they are only small.
- *Pycnosorus thompsonianus* — six small plants are surviving.
- *Olearia frostii* — we received two envelopes of seeds, one marked 'old seed' and the other from England. One seed only from each packet germinated.

- *Rhodanthe* sp. (Darling Downs) — I like this one and intend to collect as much seed as possible for next year.

We are trying two other *Pycnosorus* species: *P. globosus* — 6 x 8" (20cm) pots grew and flowered well but look very sick now. We still have 20 or so small pots. *P. chrysanthes* was sent to us by a friend in Bendigo (Vic) and we have three small plants with flowers.

We also tried *Cephalipterum drummondii*, both the yellow and the white forms. Only the white form flowered, the yellow form failed to germinate.

I started growing this year's daisies using the potting mix recipe from other years but results were poor. I began to use a potting mix that Buds and Blooms Nursery (where I am working) use to produce geraniums, pelargoniums and fuchsias. Apart from the usual peat moss, pinebark and sand, a fertilizer mix is added during the preparation. It consists of superphosphate, 3–4 month Osmocote, 8–9 month Osmocote, gypsum, lime, dolomite, UF 38 and Micromix. Results have been much improved, showing that Australian daisies respond to an increase in soil nutrition.

****

OBSERVATIONS on ASTERACEAE / PROTEACEAE

Observation by Anne Dealtry (One Tree Hill, SA)

I don't want to 'stir the pot', but we have many examples of daisy family plants living in close contact with Proteaceae. Our best example is a white waratah with *Brachyscome formosa* as an understorey, both planted together in a wooden wine half barrel. Each of these plants has been very difficult to cultivate in other situations in the garden. Last spring it was a stunning sight, masses of large white waratah flowers with a carpet of pink-mauve brachyscome around the base.

Bracteantha species self-sow at the base of our banksias and grevilleas. Even in the nursery *Bracteantha* seed germinates and grows in our large stock pots of *Grevillea*.

(As proof Anne included some pretty prints of *Bracteantha bracteata* and *Rhodanthe chlorocephala* subsp. *rosea* growing in the middle of various plants of the Proteaceae family .)

*****

Observation by Esma Salkin

'Stirring the Pot' was one of the aims of my article in NL 41, p. 8, and I did say it was a subjective observation. (Tongue in cheek probably.)

Banksia conferta var. *penicillata* and *Hakea neurophylla* have since been removed from the garden. *Brachyscome microcarpa* and *Craspedia variabilis* are still clinging to life and have not taken advantage of the open space. I think a good dose of fertiliser is in order.

In the raised north-facing sand bed, the *Isopogon* is thriving and putting on good growth. Already one long term resident, *Brachyscome aculeata,* is dead and a second specimen is looking poorly.

Since writing in NL 41 I have mulched the sand bed with 5mm quartz pebbles. This has resulted in numerous seedlings of *B. rigidula* (alpine). *B. tenuiscapa* var. *pubescens* has been appearing throughout the bed, with one seedling venturing near the root zone of the petrophile. It has dared to bloom; I expect it to produce seed and die. As this species seems to be self-perpetuating I'm not too worried. It does not remain alive for long as a clump in this northerly aspect.

Good luck to Anne with *B. formosa.* We Melbournites find that this species responds to adequate watering. In the garden, where it relies on infrequent watering or rain, it dies back to reappear once the ground is thoroughly moistened.

****

NAME CHANGES

June Rogers pointed out to Esma that *Spilanthes grandiflora* Turcz. is now ***Acmella grandiflora*** (Turcz.) R. K. Jansen var. ***brachyglossa*** (Benth.) R. K. Jansen. (**Reference**: Murray, L. [1992]. *Acmella.* In Harden, G. H. [ed] *Flora of New South Wales.* Vol. 3 , p. 273.)

Senecio lautus ssp. *maritimus* S.I. Ali = ***Senecio spathulatus*** A. Rich. (**Reference**: Ross, J.H. [1993]. *Census of the Vascular Plants of Victoria* edn 4.)

The following name changes appeared in *The Victorian Naturalist* Vol. 111 (3): 156 (1994). This journal publishes the full updates to *A Census of the Vascular Plants of Victoria* edn 4 by J. H. Ross as they come to hand. The article is titled Census of the Vascular Plants of Victoria . Update Bulletin No. 4.3 compiled by Dr T. J. Entwisle.

Senecio lautus G. Forster ex Willd. = ***Senecio pinnatifolius*** A. Rich, *Sert. Astrolab.* 117 (1834). *Senecio lautus* is thought to be endemic in New Zealand. The Australian members of *S. lautus* are extremely variable. The name *Senecio pinnatifolius* has been applied to all of them.

Senecio sp. aff. *squarrosus* (South West Swamps) = ***Senecio psilocarpus*** (Belcher & Albr., *Muelleria* 8: 113 (1994). This is a name change for an entity occurring between Wallan and south-eastern South Australia. The fruits are reddish-brown to brown and entirely glabrous, whereas those of *S. squarrosus* are blackish and have short white hairs in dense rows between the ribs.

****

MEMBERS' REPORTS

Jeff Irons from Heswall (England) sent seed of *Vittadinia* sp. from the garden, originally collected at Adaminaby. He writes: 'Previous experience indicates that germination of this *Vittadinia* sp. is slow and erratic. Is it programmed to need a winter?

An hypothesis — hot weather causes some daisy plants and seeds to go dormant.
Reasoning — even though watered, *B. spathulata* and *B. tadgellii* did not flower during our eight weeks of hot weather. When the weather turned cooler *B. spathulata* flowered. *Rhodanthe* 'Paper Baby' too was watered during the hot weather. Now one seedling has appeared. Maxima now are 10–15°C, and 20°C in the greenhouse.

Brachyscome Book. I gave this to the taxonomist at Ness. His verdict — just the right balance between botany and horticulture, but why no key?* Having spent the morning peering down a reflexion microscope trying to identify 'lost label' acacias for the RHS, I agree. With no knowledge you can go wrong in a key, but it is even worse without one.'

(*See *Australian Brachyscomes* p. viii.)

Irene Cullen from Algester (Qld) writes on 30/10/95: 'On our way home from the Ballarat Conference we did a bit of a 'Nursery Crawl'. Bought a few more daisies — including a punnet of *Waitzia acuminata.* Although labelled 'Golden Waitzia' there are some pink buds, and some I gave Pat Shaw could be red. I am also trying an *Ozothamnus ledifolius,* but doubt it will like Brisbane. I found a *Leptorhynchos squamatus* and hope it originated from nearer to Queensland than the Snowy Mountains. I now have *Calocephalus citreus* for the first time.

I have lovely borders of *Bracteantha bracteata* (1770) and now I have a white form. It appears to have crossed with a creamy pink *Bracteantha* — much smaller than the robust coloured forms of *B. bracteata.* (We have ones with large heads of white, cream and gold — mostly seedlings of 'White Cockatoo' and such.) This small cream/pink edge has beautiful, delicate pink buds, heads about 2–3cm across and, when wired, makes delightful posies and trailers for bouquets. A friend made some into a corsage to great effect, so you can imagine it is spread around all our floral art ladies. This *Bracteantha* was a seedling I got from Study 72–73 which was called 'Pink Helichrysums'. They turned out to be annuals from white, gold, orange, deep rose-pink to almost wine. This gem is a perennial.'

On 14/11/95 Irene added: 'When we returned from England Pat's *Brachyscome* 'Sunburst' bushes had spread to 1 metre across and had smothered a couple of my precious little shrubs. "Sunburst' was in flower and looked a picture. About six weeks ago I cut them back to within 10" (25cm) of their lives. Now they are in full flower again — in perfect semi-spheres of about 20" (50cm). Moral of the story — don't be afraid to

take the hedge shears to *B.* 'Sunburst'. Should anyone care to make a formal border of it, it may respond quite well. These two plants are eighteen months old. I will be interested to see just how long I can keep them looking in their prime.'

Pat Tratt from Metung (Vic) writes on 16/10/95: 'Life here rushes by as I am engaged in some Botanic Guardian work, which happily involves many field trips. Also I am temporarily monitoring *Prasophyllum correctum* west of Bairnsdale for La Trobe University. I am looking forward to the coming months, hopeful of finding daisies among other things. I think I have located *Brachyscome radicans* at Bentleys Plain, but will check it out further in December.

Gardening activities continue apace — growing, weeding and expanding daisy/grass areas. These are looking good at the moment. *Olearia astroloba* is very poorly but I have a couple of small cuttings coming along. *Ozothamnus adnatus* is quite bushy, with flowers forming, and I have a few plants from seed and some cuttings coming on.

(10/10/95) — I am off to Marble Gully tomorrow for the weekend with the Field Nats so will be on the lookout for seed on *O. adnatus* amongst other things. I am planning to walk over a much wider area than previously. *O. adnatus* is on the roadside between McKillops Bridge and Deddick. Only one plant was observed but a further search of the area will be carried out in a few weeks. *B. petrophila* was found at several locations around there; it appears to be having a good year. I will make some more precise notes regarding population sizes and locations.'

On 30/10/95 Pat sent a specimen of a brachyscome that she thought was akin to *B. formosa.* She wrote that it was from the Omeo Valley, growing on a grassy, lightly timbered hillside near the Mitta Mitta River. Plants were quite numerous but scattered, mostly with white rays although some were lilac. She said the rains they have had in October have certainly given a burst of growth to everything after months bordering on drought.

[Pat's identification proved correct. The specimen was of *B.*aff. *formosa* Entity 2 and was almost identical with Gloria's illustration in *Australian Brachyscomes* of *B.* aff. *formosa* (Buckland Valley). ... Judy.]

Colin Jones from Orange (NSW) writes on 1/11/95: 'Re "Taming" species from the last newsletter, have we ever listed our species that have taken to self-sowing and are maintaining or expanding their presence in the garden? Of course it is a bit hard to tell what is happening with *B. formosa* and other species that go underground. I have found the following species are doing very well: *Brachyscome* aff. *multifida* (Hat Head) — discounting frost damage, *B. ptychocarpa* (Canobolas), *B. stuartii* (1 and 2, ES) and *B. stuartii* (complex, ES), *Bracteantha bracteata* — all types, *Calocephalus citreus* (Orange area), *Ixiolaena brevicompta, I. leptolepis,* and *Pycnosorus* sp. (Delungra) — possibly *P. chrysanthes.*

I have two *L. albicans* plants from Julie which I will keep under observation. Most *L. albicans* I've seen have been growing in the driest and hardest conditions imaginable. Maybe we mollycoddle them too much with water and fertiliser.

I must report that *Brachyscome* 'Colin Jones' (*B. angustifolia* var. *angustifolia* [mauve form] *x B. formosa* [mauve form]) is a picture of health and a mass of colour. Now that they have survived one season I must pot on some pieces and try them in more open aspects.'

(Esma kindly undertook to identify Colin's *B. stuartii* plants grown from her seed. She thinks '*B.stuartii* 1' is a *B. dissectifolia* form similar to that from east of Tingha, or else it is a hybrid which has arisen either in her garden or in Colin's garden. Plants from Tingha–Bundarra seed should have looked like *B. stuartii*; the leaves should have had secondary lobing and the fruit should have had a thickened margin, not a wing. '*B. stuartii* 2' from south-east of Tingha is *B. dissectifolia*. '*B.stuartii* complex' is one of the forms of *B. stuartii*.)

June Rogers of Horsham (Vic) writes on 2/11/95 about the SGAP Flower Show in October: 'Our display this year was very interesting as we emulated a "bush " garden at one end of the marquee, and along one side a fernery, and then the other end was a formal native garden — paved patio, large specimens in ornamental pots and complete with outdoor furniture. My "rockery" was in the centre, immediately opposite the entrance, which was along one side. It was well done and drew lots of comments. It was hard to name things in the bush garden, though I had labels in the daisy pots.'

Gloria Thomlinson of Shepparton (Vic) writes on 4/11/95 after returning from three weeks away from home: 'The garden was an absolute delight when I came home. The best of the *Prostanthera* was missed while I was away but the chocolate lilies are making up for it. I must say the Bendigo form of *Chrysocephalum semi-papposum* is the best form I have — upright grey foliage which stays that way. Now grown well into the second square metre, the patch looks very handsome even though the heads are still not fully open.

- To John Armstrong whose drawings adorn the glossary and help to explain 'What is a Brachyscome?' in *Australian Brachyscomes*. John has also been drawing pultenaeas for the *Flora of Victoria,* and has recently sold four of his superb paintings.

- To Rodger Elliot for being awarded the Natural History Medallion and the Australian Plants Award in the professional category. All members will be delighted that Rodger has been honoured with these awards. When one reflects on the multitude of tasks he undertakes for SGAP nationally and internationally, his work for the environment and his writings on Australian plants, it is possible to believe he is superhuman. ADSG has many reasons for being grateful to Rodger, not least for his unfailing kindness, patience and generosity.

- To Doris and Bill Gunn who have recently been awarded SGAP Victoria Honorary Life Memberships. Doris rejoined ADSG at the Ballarat Conference and we are very happy to have her back.

- To Fred Rogers for sharing the Australian Plants Award in the amateur category with Dave Gordon. Fred's books, *Growing Australian Plants* and *Growing More Australian Plants*, stimulated much interest in the cultivation of our native plants. His wife, June, often contributes to our newsletter and is a treasured member.

SNIPPETS

- Dr Tony Slater proffered some advice on the growing of *Ozothamnus obcordatus* during a telephone call in November '95. He suggested plants should be cut back fairly hard when the stems are harvested. Species are usually harvested in October and November. This may be the correct treatment for most of the *Ozothamnus* species we grow, e.g. *O. cuneifolius, O. diosmifolius* and *O. rogersianus,* in order to produce strong, new shoots and stop the browning of the leaves on the old stems. Dr Slater warned that the cutting back should take place even when plants flowered at an early age but he was not sure of the result if we cut back into old wood. I will try it and report on the result. (In mid-January my young plant of pink *O. diosmifolius* has shot forth energetically after hard pruning in November but an old plant of *O. obcordatus* has done absolutely nothing.)

- Doris Gunn has bought the last ADSG jumper, and says it fits her very well.

- Esma is continuing to isolate and hand pollinate *Brachyscome* species in order to collect true seed. She is working on *B. chrysoglossa, B.* aff. *formosa* Entity 2, *B. riparia* and *B. sieberi* var. *gunnii.* She will turn her attention to *B. muelleri* next. Judy is isolating *B. sieberi* var. *gunnii* in Sandy's cage for the same purpose.

- Natalie Peate reported that the daisy collection from her trip to Camerons Corner was moved from the top of a table in a polyhouse to the ground without her knowledge. Rabbits got in and almost demolished the lot. The only ones to survive were *Olearia pimelioides* and *O. rudis.* Most of the *Calotis* were also untouched. This might indicate that these species could be left unprotected from wallabies.

- The unknown recorder of *Podolepis neglecta* (NL 41, p. 5) has been tracked down. It is none other than Jenny Rejske. It really comes as no surprise, although that brisk, no nonsense style might also have belonged to Beth Armstrong.

- Paul Thompson reported that he has been using a grey-leafed form of *Calotis scabiosifolia* in his landscaping work recently. It is consistently compact and flowers well in pots. About two thirds of a landscaping order sent to him had green leaves and the habit was not as neat as that of the grey-leafed form. He is impressed by *Haeckeria ozothamnoides* and will plant it in groups in the future, with grasses at the base to hide any untidiness.

- In an article on the Melbourne Zoo in *Garden Living* Vol. 17 No. 3 , Jan/Feb, p. 5, there is a report that the zoo holds the Ornamental Plants Collection of *Olearia,* with more than 20 of the 140 species growing there. They have eight forms of *O. phlogopappa,* and the collection includes a number of rare species, of which one is *O. astroloba.*

****

LEADER'S LETTER

Dear Members,

With Esma's retirement the leadership of ADSG has fallen to me. It is with some trepidation that I take up this challenge. I follow two splendid leaders.

Maureen started the Group in 1981 with nothing but a love for Australian plants in general and daisies in particular. The membership grew slowly, our knowledge grew fairly swiftly, and assets began to grow because **all** receipts were ploughed back into the Group. Our major income at that time was derived from the sale of seed, and we had to have funds in order to buy bulk seed so that we could sell it at a profit. Later we collected seed from plants growing in our gardens and were not so dependent on seedsmen. Members grew plants as donations for sale at talks or displays, and petrol money and speakers' fees were also donated to the Group. Almost the only thing we didn't try was a chook raffle. When Maureen retired after seven years ADSG had a healthy bank balance, a seed bank containing a wide range of species and a strong membership. We had acquired much information about how daisies behaved under cultivation and which species could be useful in floral art. We had written our first book, *Australian Daisies for Gardens and Floral Art,* which was published by the Lothian Publishing Company.

Esma took over in 1988, promising to be leader for twelve months and then to see how she went. She too has stayed for seven years and has advanced the Group's knowledge markedly with her botanical and conservation interests. She has forged excellent links with botanists, conservationists and naturalists all over Australia, and this Group has benefited greatly from these associations. One special attribute Esma has brought to the job is her ability to find the unusual species we have sought. We have written another book under her aegis, *Australian Brachyscomes,* and we have been able to finance the printing of this largely from the royalties and public lending rights and profits earned by Group sales of the first book.

With these two examples before me, is it any wonder I am a bit nervous? Fortunately, Maureen and Esma remain as very valuable members and have agreed to continue to do those important jobs that they do so well, as indicated in the list of office bearers. While Esma was away on her species-hunting expeditions I presided over the monthly meetings in her stead. This gave me some experience of the job, but on each occasion it has been all fun and no responsibility. Now the responsibility is mine, you can be sure that I will do my best, and I hope that it will still be fun.

We are working on a new project which we hope will culminate in another book after about five years. The primary aim is to gather information on another group of genera rather than just to write a book, and the most efficient way to do this seems to be to plan the project as we did for *Australian Brachyscomes.* We hope to enlist the help of as many members as possible. Your assistance is invaluable. I hope you are aware that the two books which we have produced have come from the work of the majority of members, and that credit should be shared accordingly.

I am retaining the job of newsletter editor because I love it. Your letters always enlighten and amuse me, and form the basis of the newsletters. I have used many paragraphs from them for the 'Members' Reports' without necessarily asking for your permission, because this saves both time and money. If you don't want me to do this, just add a note to that effect to your letters. We know that these reports are much enjoyed by members and others. I am grateful to those members who respond to the content of articles in many ways; some send cutting material or seed to those expressing an interest in certain species, and others write articles or letters describing their experiences or seeking reasons for what has been written. This seems to indicate that many read the newsletter with interest and attention. Please keep the letters coming. They are a source of great pleasure to me. I feel I know you through your words even if I haven't met you. Thank you also for your articles, which are usually forthcoming whenever I plead for them.

We are extremely fortunate that Camberwell Grammar prints our newsletters for us. We merely pay the cost of the paper. They present us with one hundred beautifully printed copies, the pages in order and neatly stapled together. We thank the staff of the printing department and Neal and Joy Greig for their parts in this production.

The December meeting (the Christmas Break-up) was a happy occasion. We met at Natalie Peate's PGA nursery at 9.30 am. Natalie had collected seeds of numerous species on her trip to Camerons Corner and had germinated them. In her usual generous fashion she was offering those tubes that were surplus to her needs to other members. I came home with *Olearia rudis, Ixiolaena* sp., a possible *Minuria* sp. and many

Rhodanthe floribunda on which to practise my taming methods. We then moved to Peg McAllister's house in Mooroolbark for the meeting but I couldn't get the members out of her garden for the business part of the day. Some of the interstate members may not know that Peg's gardens have always been held in awe by SGAP members (and non-members also). Somehow the most unlikely and difficult species grow beautifully for her. This time I could not get over the fact that she had a clump of *Leucochrysum albicans* subsp. *alpinum* flourishing in the open, masses of flannel flowers and little tussocks of *Johnsonia lupulina* placed strategically. Many thanks to Natalie and Peg.

The Study Group will still meet every month from February to December, usually on the first Tuesday, and all members are most welcome to attend even if they can come only to an occasional meeting. Our policy is to have the meeting at the home of a different member each month in order to see as many different gardens as possible, and so please telephone me (03 - 9813 - 2916) for the venue if you are able to come to any meeting. We bring our lunch and meet at 10.00 am. The meeting usually concludes at about 2.30 pm. In May the meeting is held on a Saturday in order to allow country, interstate and working members to attend. This meeting runs from 2.00 until about 10.00 pm, and the Group provides dinner. Later in the year we are planning to hold a meeting at Shepparton, tentatively on the second or third weekend in November. The details will be presented in the July newsletter.

This year already looks like a busy and interesting one. Our man in the UK, Jeff Irons, is visiting Victoria in January and February. Since our summer has been unusually cool and fairly wet we are hoping that he has seen some of our Australian plants in flower. Daisies can usually be relied upon for summer colour. This year I will be present at the SGAP Vic Autumn Plant Sale at Freshwater Creek at the end of March. There will not be many plants ready for me to sell but it will be a good weekend. About five talks to various SGAP and Garden Groups have been planned up to June. There will be a Study Group Leaders' Workshop at some time, possibly July, the aim of which is to provide a manual on how to run study groups. If there are good rains in Western Australia I intend to make a quick foray with my husband, Lee, in August or early September. I have never seen these carpets of wildflowers with my own eyes. Now that I have had two cataracts removed and lenses replaced I expect to be blinded by the glory of the floral display. Any old carpet will suffice to blind me. In late September I always take part in the Angair Nature Show. October is a busy month — wiring and drying daisies for display at shows and talks is almost a full-time occupation. That's enough! I'm exhausted at the very prospect!

I hope you all have good health in the next year, that your daisies grow well, and that you continue to tell us about your experiences.

Best wishes.

****

MAY MEETING: SATURDAY, 4th MAY at 2.00 pm at 9 Widford Street, East Hawthorn, 3123.
Tel (03) 9813 2916

PROGRAM (Tentative)

2.00 pm: Coffee and plant sharing.
2.40 pm: Show and Tell.
3.15 pm: Short talks by members.
Progress on new project.
Topics of interest requested by members?
6.00 pm: Dinner.
7.30 pm: Talk (to be arranged).

Accommodation will be arranged for any members who require it. Please try to give us advance notice if you can come so that we can cater and allot beds for everyone.

****

NEW MEMBERS

A warm welcome to the following new members:

And welcome back to these two members:

****

AUSTRALIAN DAISY STUDY GROUP

Financial Report July 1994 - June 1995

Receipts		Payments	
Cash at bank 1.7.94		Cash at bank 30.6.95	
Term deposit	$1,738.75	Term deposit	$1,810.85
Term deposit	$768.89	Cheque account	$2,156.75
Cheque account	$1,102.26	Cash in hand	$71.10
Cash in hand	$75.80	Cheques in hand	$7.00
Cheques in hand	$68.00		
Subscriptions	$556.00	Postage/phone	$61.60
Donations	$34.50	Newsletter	$222.30
Seed	$526.55	Seeds/seed envelopes	$129.90
Windcheaters	$418.00	Art materials	$225.52
Interest	$122.38	Computer	$78.85
Sundries	$56.10	Stationery	$68.95
		Photocopying	$52.25
		Windcheaters	$435.00
		Australian Flora Foundation	$25.00
		Sundries	$116.15
		FID	$6.01
	$5,467.23		$5,467.23

****

SEED LIST

A full seed list is published in each March newsletter. Please keep this list for reference; additions and deletions only will be recorded in other 1996 newsletters. A STAMPED, SELF-ADDRESSED ENVELOPE MUST BE ENCLOSED WITH EACH REQUEST FOR SEED. Please write to Esma for provenance seed or to Judy for garden or commercial seed. (The addresses are on the front page.) If a member requires both types of seed a letter to either Esma or Judy will suffice.

Most seed for sale comes from cultivated plants or from commercial sources. please note that much of the seed listed below has been collected in members' gardens and some species may have crossed with others. **One parent only is guaranteed.**

Seed will be kept in the refrigerator from March '96. Some is already ensconced there, and the rest awaits room. Like Esma, Judy is gradually testing seed bank seed for germination. It is a slow process. We would both welcome feedback on this subject. Please note that the full seed list has been published but some of the everlastings may be needed for our new project.

GARDEN and COMMERCIAL SEED

Ammobium alatum, alatum 'Bikini'. *Anemocarpa podolepidium. Angianthus tomentosus. Asteridea athrixioides.*

Brachyscome angustifolia complex (Barrington Tops, Namoi, Nandewar),*ascendens, basaltica* var. *gracilis, ciliaris* (Enngonia, SA), *ciliocarpa, chrysoglossa* (isolated and not isolated), aff. *cuneifolia* (Derrinallum), aff. *curvicarpa* (Quilpie), *dissectifolia* (Dawsons Springs), *diversifolia* var. *diversifolia*(Beechworth, King Island, Mt Samaria, Reids Lookout), *diversifolia* x *gracilis, exilis* (Iron Knob, Yorke Peninsula), aff. *formosa* (Neville, Sydenham Inlet), *goniocarpa, gracilis* (Namoi), aff. *gracilis* (Kings Billabong), *graminea, halophila, iberidifolia, latisquamea. lineariloba, melanocarpa, microcarpa* (Yamba), *muelleri* (not isolated), *multifida,* aff. *multifida* (Hat Head), *nodosa, nova-anglica*(Mt Kaputar, suckering form), *parvula* (Huntly), *petrophila, ptychocarpa* (Mt Canobolus, Mt Mitta Mitta), *readeri, rigidula* (alpine, single), *riparia* (not isolated), *scapigera, segmentosa, sieberi* var. *gunnii* (isolated and not isolated), *smithwhitei spathulata* var. *spathulata* (Mornington Peninsula, New England, pale mauve double form),*spathulata* var. *glabra, stuartii* complex (Emmaville type, Tingha), *tadgellii* (Central Victorian Highlands), *tenuiscapa* var. *pubescens*(New England), *trachycarpa* (Southwood NP), sp. (Darling Downs [Dalby]).

Bracteantha bracteata (Ebor, Pambula, dwf. mixed form, orange, yellow, white, mixed colours), *papillosa* and hybrid forms, *subundulata, viscosa* and *viscosa* crosses.

Calocephalus citreus. Calotis scabiosifolia. Cephalipterum drummondii (garden, WA). *Chrysocephalum pterochaetum, semicalvum* (Tibooburra), *semipapposum* (Mt Slide). *Craspedia variabilis.*

Erigeron pappocromus. Erodiophyllum elderi. Erymophyllum tenellum.

Helichrysum adenophorum var. *waddelliae, elatum, rupicola, scorpioides.*

Hyalosperma cotula, glutinosum subsp. *venustum praecox* (yellow a and white forms), *simplex.*

Ixiolaena brevicompta, leptolepis (Horsham). *Lagenifera huegelii. Lawrencella davenportii, rosea. Leptorhynchos squamatus*(Anglesea).

Leucochrysum albicans subsp. *albicans* var. *albicans* (Longwood Vic), var. *tricolor,* subsp. *alpinum, fitzgibbonii, molle, stipitatum.*

Leucophyta brownii, Minuria integerrima, leptophylla. Myriocephalus guerinae. Olearia frostii, lirata, magniflora.

Ozothamnus hookeri, obcordatus, secundiflorus, thyrsoideus.

Podolepis canescens, gracilis, jaceoides, lessonii, neglecta, rugata, sp. (Werribee).

Podotheca gnaphaloides. Polycalymma stuartii. Pterocaulon glandulosum. Pycnosorus globosus, pleiocephalus, thompsonianus.

Rhodanthe anthemoides (red-bud, branching form; unbranched forms, Burrendong, Liverpool Range, Whitlands, mixed forms), *chlorocephala* subsp. *rosea* (black-centred form, mixed, and subsp. *splendida,* and Balladonia form, *charsleyae, citrina, corymbiflora,*

diffusa subsp. *diffusa* and subsp. *leucactina, floribunda, humboldtiana, manglesii* (commercial, small form), *polygalifolia, pygmaea. stricta, sterilescens, stuartiana.*
Schoenia cassiniana, cassinia 'Gabriele', *filifolia* subsp. *filifolia* and subsp. *subulifolia, ramosissima. Waitzia acuminata* var. *acuminata.*

PROVENANCE SEED

Provenance seed to be used for the Everlastings Project has not been listed. Many *Brachyscome* species have been added to the Provenance Seed Bank. Species collected between 1989 and 1992 were not stored at 4°C but were stored either in glass jars or in seed packets in a large plastic storage bin. This seed was gradually transferred to 4°C storage. I would appreciate your assistance in testing the viability of this seed. Better germination of seed may occur if seed is soaked in water for 24 hours prior to sowing. Do not expect to obtain good germination with provenance seed. Crude viability test: Cut seed in two. The embryo should be white and plump.

Esma Salkin (Provenance Seed Bank Co-ordinator).

BRACHYSCOME species

Brachyscome aculeata (NSW; Kiandra, Snowy Mts, ACT; Captains Flat, Vic; Buchan 3/91, Hamilton Gap 3/91), *basaltica* var. *gracilis* (NSW; Menindee Lakes 9/94, Narrabri, Vic; Goroke 12/92, Kerang 1/91, northern Vic; 10/90, 10,91), *breviscapis* (SA; 9/94) *cardiocarpa* (Vic; Mt Wallace), *cheilocarpa* (WA; Exmouth 8/92, Lake Moore 7/92, Monkey Mia 8/92, Mullewa 9/91, Old Onslow 8/92, Tallering 8/93), *chrysoglossa* (NSW; 10/92), *ciliaris* (NSW; Bundarra, Enngonia 8/93, Gunnedah '92, SA; Cowell 9/90, Iron Knob 7/92 , Marree 9/90, Pt Augusta 6/90, Simpson Desert , WA; Cowalellup 10/91, Mukinbudin 9/91, Norseman 9/91, Stirling Range 10/91), *ciliocarpa* WA; Cleary 9/91, Coral Bay 8/92, Menzies 7/92, Mongers Lake 9/91, Yalgoo area 9/91, 9/92), *cuneifolia* (SA; Tintinara 9/93, 10/95, aff. *cuneifolia* (Vic; Natimuk 11/89, 2/91), *curvicarpa* (NSW; Bourke 8/93), *decipiens* (Vic; Dargo High Plain 1/96), *dentata* (Qld; Cunnamulla 8/89, NSW; Armidale 1/91, Bundarra 10/92, Dalgety 2/92, Enngonia 8/89, Mootwingee area '89, '90, Moree 9/93, Rankins Springs '91, '92, Sofala 10/93, West Wyalong 10/92, Vic; Little Desert 10/91, West Wail 11/89), '*dimorphocarpa*' (WA; Mongers Lake 9/92, Thundelarra 9/92), *diversifolia* (Vic; Grampians 5/93, Nowa Nowa 3/93), *eriogona* (NSW; Tibooburra 8/89), *exilis* (SA; Cummins area 10/91, Iron Knob 10/91, PS 3908, Yorke Peninsula 10/94), *formosa* (NSW; Coonabarabran 10/91), aff. *formosa* Entity 1 (NSW; Neville 11/93, Vic; Warby Range 10/90), *goniocarpa* (SA; Keith 10/91), aff. *gracilis* (Vic; Kings Billabong 3/91), *graminea* (NSW; Adaminaby 3/91, Mallacoota 3/93), *halophila* (WA; Yarra Yarra Lakes 9/91), *iberidifolia* complex (WA; 'Wreath' 9/91, 9/92, Carnamah '91, Cervantes 9/91, Corrigan, '91, Cowalellup '91, Dongara 9/91, Dookanooka Res '91, Geraldton 9/91, Mongers Lake 6/91, Pindar 9/91, Stirling Range 9/91, Watheroo, 7/91, Wickepin 10/91, Yarra Yarra Lakes 9/91), *latisquamea* (WA; Exmouth area 8/92 [white, mauve]), *leptocarpa* (NSW; Lake Cargelligo 9/91, SA; Gawler Ranges), *lineariloba* (Qld; Cunnamulla 8/89, NSW; Broken Hill 8/89, Hay '92, Lake Cargelligo 9/91, Vic; Kiata, SA; Burra 10/90, Lake Gilles 10/91 Pt Lincoln '88, Wirrulla 10/91, Yardea 10/91, Yorke Peninsula 10/94, WA; Coolgardie 9/91), *melanocarpa* (Qld; Cunnamulla 7/89, 9/89, Bourke 8/93), ? *melanocarpa* x *dentata* (NSW; Moree 9/93), *microcarpa* (NSW Hat Head 10/92, 9/93, Yamba 9/93), *multifida* var. *multifida* (Qld; Millmerran 8/93, NSW; Lake Cargelligo 9/91, Mt Kaputar 9/92), *multifida* var. *dilatata* (Vic; Stawell 11/94), aff. *multifida* (NSW; Hat Head), *nivalis* (Vic; Falls Creek 1/93, Mt Hotham 2/93), *nodosa* (Qld; Cunnamulla 8/89, 8/93, Millmerran 8/93, St George 9/93, NSW; Narrabri 10/93), *parvula*(Vic; Huntly '90, '91, Mornington 1/94, Otways 11/95), *pusilla* (WA; 10/91) *procumbens* (NSW; Mt Kaputar 10/92), *ptychocarpa* (NSW; Gulgong 10/93, Mt Canobolas 12/94, Vic; PS 4151), *obovata* (NSW; 3/91, Vic; Lake Mountain 2/89, 5/92, Mt Baw Baw 2/91, 3/93), *radicans* (Vic; Nunniong Plateau 3/92), *rigidula* (NSW; Kiandra 3/91, Vic; Snowy River NP 3/92), *scapigera* (NSW; Kiandra 3/91, Snowy Mountains 2/93, Vic; Dargo High Plains 1/96, Nunniong Plateau 2/90), *sieberi* var. *gunnii* (Tas; Burns Bay 2/95, Midway Point '94), *smithwhitei* (NSW; 8/93), *spathulata* subsp. *spathulata* (NSW; Mt Canobolas 132/91, Neville 11/90, Snowy Mountains 3/91, 2/92, Vic; Falls Creek 3/93, Mt Howitt 1/90, Tiger Hill 10/93, ? small ecotype Falls Creek 1/94), *stuartii* form (NSW; Emmaville 10/93), *tadgellii* (NSW; Snowy Mountains 3/91, Vic; Dargo High Plains 1/96), *tatei* (SA; 10/92), *tenuiscapa* var. *tenuiscapa* (NSW; Snowy Mountains 3/91, 2/92), *tetrapterocarpa* (Qld; Winton 8/89), *trachycarpa* (Qld; Inglewood, Meandarra, Southwood NP 9/93, SA; Gawler Ranges '91), *whitei* (NSW; Bourke 8/93, Enngonia 8/93), sp. (Tingha) (NSW 10/92).

SPECIES OTHER THAN *BRACHYSCOME*

Actinobole uliginosa (SA; Gawler Ra. 10/95). *Asteridea asteridioides* (SA; Gawler Ra. 10/95).
Bracteantha bracteata (Qld; Bundaberg). (NSW; small form, Armidale, Barrington Tops 9/93, Emerald Beach 9/93, Hat Head 9/93, Yamba 9/93, SA; Yardea 10/95). *papillosa* (Tas; Bruny Is. 2/95). *subundulata* (3/95). *viscosa* (Vic; 1/92).
Calocephalus citreus (ACT; '94). *Cassinia subtropica* (Qld; Nerang).
Craspedia paludicola (Vic; 11/93), *variabilis* (NSW; 9/90), sp. (SA; Yorke Peninsula 9/94).
Helichrysum elatum (NSW; Barrington Tops, Grafton, Pambula, Tenterfield), *rutidolepis*(Vic; Dunkeld 12/95), *scorpioides* (Vic; Falls Creek 3/93, Tas; 2/95). *Leptorhychos panaetioides* (NSW; '91). *Millotia tenuifolia* (SA; 10/95).
Olearia brachyphylla (SA; 10/95), *ciliata* (Vic; Grampians 12/92, SA; 10/91), *pimelioides*(Qld; Hungerford, NSW; Menindee Lakes 10/94, SA), *muelleri* (SA; Eyre Peninsula 10/95), *ramulosa* (SA; 10/95), *rudis* (WA; 10/95).
Ozothamnus diotophyllus (Qld), *turbinatus* (Vic, 10/95). *Podotheca gnaphaloides* (WA; 9/91). *Podolepis lessonii* (WA, 10/91).
Pycnosorus globosus (NSW), *Pycnosorus pleiocephalus* (SA; Yardea 10/95).
Vittadinia sp. (NSW; Adaminaby), *cuneata* complex (s-w Qld).

SEED DONORS

Many thanks to the following seed contributors: Judy Barker, Ros Cornish, Pat Fitzgerald, Joy Greig, Yvonne Ingeme, Jeff Irons, Colin Jones, Beth McRobert, Esma Salkin, Maureen Schaumann, Pat Shaw, John Storey, and Pat Tratt.

This Study Group is especially dependent on seed donations for testing new species or old species in new locations, and for revenue from seed sales at talks to groups and at displays. It is much easier to send seed than to organise the transmission of cutting material at suitable times. We are very grateful to those members who make time to collect for us.

****

NEWSLETTER DEADLINE for NL 45 is JUNE 1st 1996.

****

LIST OF GENERA FOR INCLUSION IN EVERLASTING BOOK

TITLE — Australian Everlastings Part 1

Rhodanthe

anthemoides — branching
— unbranched
ascendens
battii
charsleyae
chlorocephala subsp. *chlorocephala*
subsp. *rosea*
subsp. *splendida*
citrina
collina
condensata
corymbiflora
corymbosa
cremea
diffusa subsp. *diffusa*
subsp. *leucactina*
floribunda
forrestii
frenchii
fuscescens
gossypina
haigii
heterantha
humboldtiana
laevis
manglesii
margarethae
maryonii
microglossa
moschata
nullarborensis
oppositifolia subsp. *oppositifolia*
subsp. *ornata*
pollackii
polycephala
polygalifolia
polyphylla
propinqua
psammophila
pygmaea
pyrethrum
rubella
rufescens
sphaerocephala
spicata
sterilescens
stricta
stuartiana
tietkensii
troedelii
uniflora

Species we know to have little horticultural potential, therefore meriting half a page perhaps — *laevis, pygmaea, uniflora.*

Waitzia

acuminata var. *acuminata*
var. *albicans*
corymbosa
nitida
podolepis
suaveolens var. *suaveolens*
var. *flava*

Cephalipterum

drummondii

Lawrencella

davenportii
rosea

Schoenia

ayersii
cassiniana
filifolia subsp. *filifolia*
subsp. *arenicola*
subsp. *subulifolia*
macivorii
ramosissima

Hyalosperma

cotula
demissum
glutinosum subsp. *glutinosum*
glutinosum subsp. *venustum*
praecox
pusillum
semisterile
simplex subsp. *simplex*
simplex subsp. *graniticola*
stoveae
zacchaeus

Leucochrysum

albicans subsp. *albicans*
var. *albicans*
var. *buffaloensis*
var. *tricolor*
subsp. *alpinum*
fitzgibbonii
graminifolium
molle
stipitatum

Chrysocephalum

apiculatum
baxteri
baxteri 'Midget'
eremaeum
pterochaetum
puteale
semicalvum subsp. *semicalvum*
semicalvum subsp. *vinaceum*
semipapposum