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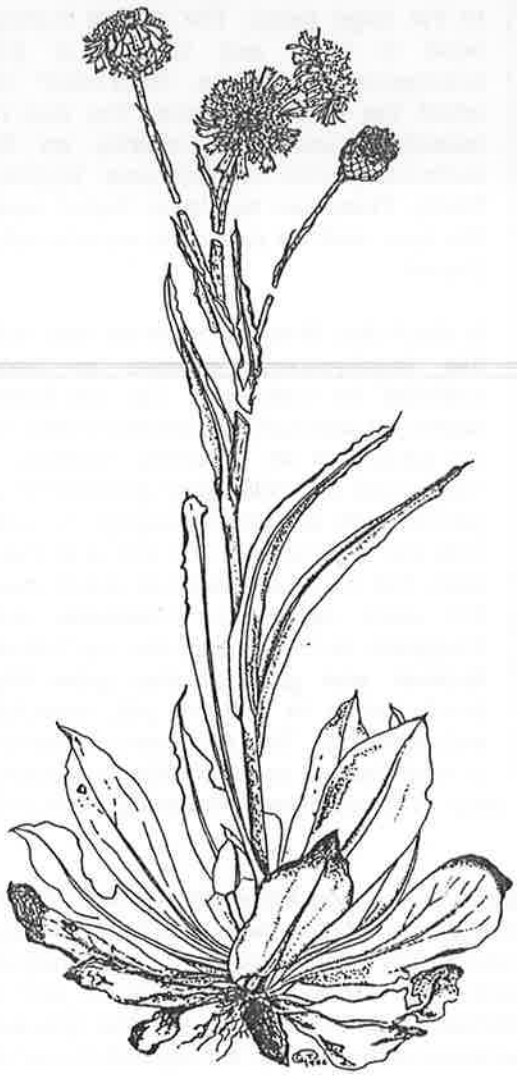
ASSOCIATION OF SOCIETIES FOR GROWING AUSTRALIAN PLANTS

THE AUSTRALIAN DAISY STUDY GROUP NEWSLETTER NO.50



Podolepis robusta x 1/2

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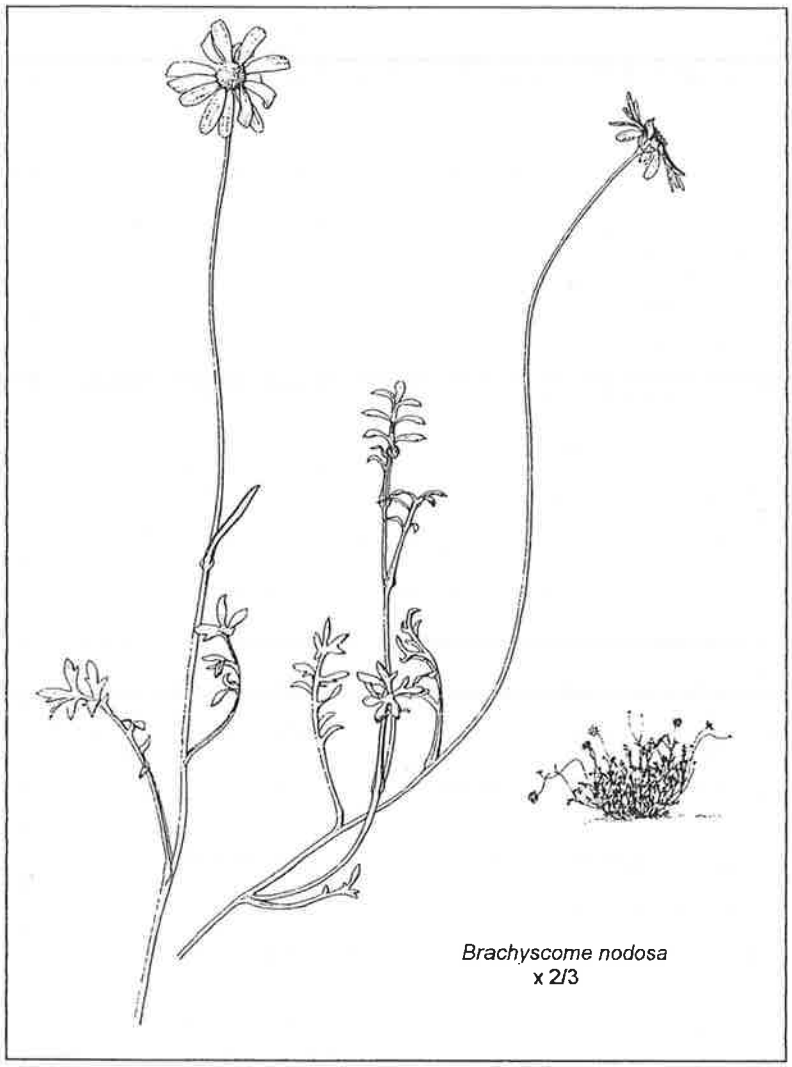
SPECIES OR FORMS NEW TO MEMBER

Brachyscome nodosa P. S. Short and K. Watanabe



Brachyscome nodosa
x 2/3

B. nodosa is a small, white, annual brachyscome, 15–20cm high and about 20cm wide, with soft green divided leaves. It is easy to see the scattering of septate hairs on stems and the underside of the pinnate leaves. The flowering stem is glabrous. The flowerhead of about 13 rays is 1.5–2cm wide. The developing seed head has a 'furry' appearance due to the large pappi. The mature fruiting head is black and is one of the brachyscomes with a 'hard-head' in which the fruit is retained. The fruit is beautifully sculptured, knobby on its surfaces (hence the nickname 'Knobby Fruit'). There are two large 'horns' near the apex and the pappus is eccentrically placed.

In *Australian Brachyscomes* we note that this brachyscome 'appears to have potential' for cultivation. This has been confirmed with further cultivation trials in my garden at Mt Waverley, Victoria. I have used this little daisy grouped in a garden with a westerly aspect. It gets little sun until spring. The soil is a clay-loam that has had plenty of mulch over the years. Apart from Osmacote and Easigreen in the potting mix, no further fertiliser was given. I also grow this brachyscome in a 20cm pot, crowded with seedlings. This has been placed on a north-facing patio outside a window where I can enjoy the mass of white flowers. It also makes it easy to collect seed. Flowering lasts 2–3 months.

The present crop of *B. nodosa* is the third generation of seedlings from a population 23.0km west of St. George, Queensland. I collected 2 flower stems with immature heads, and placed them in water until they 'matured'. ADSG first collected this species in 1989 in Cunnamulla, Queensland. It and another brachyscome collected at the same site were undescribed species, an exciting occasion for Alf and I. Further collections have been made in the Narrabri area and Milmerran and Quilpie in Qld. The species normally grows massed on disturbed ground, and is only a few centimetres high, but in the Rubbish Reserve at Cunnamulla there were plants to 30cm high.

Looking through my propagation records, germination of seed planted in autumn ranged from 0–90% (mean 50%) but in one trial all the seed germinated. This seed was 3 years old and had been stored in a sealed foil packet at 4°C (an aberration I think). Seed germinates in 5–20 days.

Seed mix and method:
Sow seed on top of mix (3 parts coarse sharp sand, 1 part cocopeat). Immerse pot in water up to level of neck of pot for 24 hours. Drain and spray with water as required.

Collection of seed from hard-headed brachyscomes:
Seed is difficult to separate without damage to the seed coat and embryo. Soak head in water overnight. Seed separates easily. I have on an occasion lost precious seed in a seed trial. A heavy downpour flattened

a pot of 'hard-headed' brachyscomes and, as the plants dried out, the loosened seed dispersed. If you wish to collect seed avoid overhead watering.

B. nodosa has been confused with *B. goniocarpa,* and this member had a mental lapse and handed out pots labelled the latter at the May meeting. Gloria Thomlinson (Shepparton, Vic) notes that 'your *B. goniocarpa* (sic) ex St George seedlings were absolutely lovely in a wide bowl. Very presentable. I'm waiting for the seed to turn black'.

by **Esma Salkin**

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Helichrysum collinum

Helichrysum collinum
x 1/2

I first encountered *Helichrysum collinum* on one of my SGAP Wednesday Walks. We had decided to stay close to home one chilly July morning and chose a walk on the north to north west side of Black Mountain near the centre of Canberra. The walk was through dry sclerophyll forest made up of mainly *Eucalytpus rossii* and *E. macrorhyncha* with an occasional *E. polyanthemos*. There was a wide variety of understorey plants including species of *Acacia, Pomaderris, Leucopogon, Hakea, Brachyloma* and *Cassinia*.

I noticed a rather bedraggled, nearly desiccated plant with spent heads which was definitely a daisy. Those more knowledgeable than I, and who had done the walk many times, told me that this was *H. collinum* which was quite common on Black Mountain although we didn't see many that day. My interest was sparked and I decided to return at a later date to try and see it in flower.

We had a very short spring and virtually went straight into summer with heatwave conditions in November. Looking for a relatively short, cool walk in late November we returned to Black Mountain at my suggestion to see whether *H. collinum* was flowering. We had only walked about 50 metres when we came across a magnificent specimen in full flower in a small ditch beside the track. There were 11 flower heads on the plant and they were a glorious orange-gold in colour with very stiff, pointed bracts – to me quite unusual and spectacular. This turned out to be the best plant that we saw on the walk. As we progressed we saw many more scattered throughout the understorey but they were mostly small plants with one or two flower heads. They made an attractive display and provided just about the only colour as most other plants had finished flowering.

According to Flora of the ACT (Burbidge and Gray) *H. collinum* is not common in the ACT. This was the first time I had encountered it in the year of Wednesday Walks I had done with the group in the Canberra area. Flora of NSW (Harden) describes the plant as a robust woody herb to 70cm however we would not have seen any quite that tall – 30cm at most – and they were not particularly woody. Perhaps the area had been burnt in the not too distant past and the plants were still (re)growing to their maximum size. Distribution is stated to be widespread in NSW and it is also in Qld.

I was very taken with this plant – not only because of what seemed to be a miraculous transformation in a few months but also because of the colour of the flowers. They are quite different from our widespread *Bracteantha viscosa* and *B. bracteata* – much more orange-gold than yellow-gold. It would be a prized addition to the garden.

by **Ros Cornish**

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PROGRESS IN THE EVERLASTINGS PROJECT

Progress is slow but steady. We have managed to cut the Wanted List down by at least three species and possibly four. Soon after the last NL went to print Pat Fitzgerald sent us a marvellous package of *Rhodanthe collina* for which we are extremely grateful. Esma and I managed to find some seed of *Hyalosperma demissum,* and the Halls collected *Chrysocephalum pterochaetum* and perhaps *Waitzia suaveolens* ssp. *suaveolens.* If anyone knows of any source that can be tapped for seed still required please tell us.

WANTED LIST

Chrysocephalum
eremaeum
puteale
semicalvum ssp. *vinaceum*
Hyalosperma
pusillum
simplex ssp. *graniticola*
zacchaeus
Leucochrysum
graminifolia
Rhodanthe
corymbosa
forrestii
frenchii
fuscescens
gossypina
Rhodanthe
heterantha
nullarborensis
pollackii
polycephala
pyrethrum
rufescens
Rhodanthe
sphaerocephala
uniflora
Waitzia
suaveolens var. *suaveolens* ?
corymbosa
podolepis

The following table is an example of the results for members of the section *Helichrysoides* in *Rhodanthe*.. We have not been able to acquire *R. pollackii*, but we know that *R. battii, R. charsleyae,* and *R. spicata* are similar in the appearance of the seed, the production of small, non-radiant heads in clusters, and in the upright, linear shape of the cotyledons. It would be appropriate if they germinated in the same manner. The results tabled are those of '96 and '97 wild seed and seed harvested from garden plants. Trials were done in mid-January because we know that the optimum temperature for germination of *R. charsleyae* is 28°C (NL 47, p. 7). I expected that SISP would be the best pretreatment for all three species. The most recent results, to 10/2/98, have been included in the table but they may not be the final numbers.

					Pretreatment							
Trial Location	Source	4°C or RT	Date sown	No. seed sown	None	H_2O soak	H_2O + SW	SISP	SISP + SW or WK	GA3	GA3 + SW	Best pretreatment
R. battii												
Mulgrave	Murrum 10/96	RT	19/2/97	no count				1				
Lurg	" "	RT	9/3/97	30	0	1		0				
"	" "	RT	3/4/97	60						1		
"	" "	RT	9/8/97	50		2		7		5		inconclusive
"	" "	RT	30/9/97	50		0		17		1		SISP
Hawthorn	" "	RT	23/1/97	50		1		3	4 (WK)			
"	" "	RT	9/11/97	50		0	1	13	11 SW)			SISP, SISP + SW
"	" "	RT	13/1/98	50	0	0	0	2	2	0	0	SISP, SISP + SW
R. charsleyae												
Hawthorn	Meekatharra 10/96	RT	18/3/97	50		1						
"	" "	RT	9/11/97	50		1	0	18	4			SISP
"	" "	RT	16/1/98	50	0	0	0	8	6	2	0	SISP
"	JB pot 10/96 ex Atley Stn	RT	24/1/98	50	0	3	1	2	0	3	0	inconclusive
R. spicata												
Hawthorn	Paynes Find 10/96	RT	27/1/97	50		3						
"	" "	RT	16/1/98	50	0	0	0	4	1	1	4	inconclusive
"	JB pot '96	RT	26/1/98	50		1	7	14	11	9	14	inconclusive
"	JS pot '97	RT	30/1/98	50		20	20	19	19	15	18	none
"	Eurady, 10/97	RT	26/1/98	50		2	1	5	1	2	3	inconclusive

SISP = Smoke-impregnated Seed Primer, GA3 = Gibberellic Acid (100mg/litre), SW = Soil Wetter (Multicrop), WK = 5% White King.

Looking at results from *R. battii* at the end of 1997 I thought that it was a difficult species to germinate, that the after-ripening dormant period was probably coming to an end some time before August '96, and that the best pretreatment would probably be SISP, the addition of soil wetter not being worthwhile for this species. As you see from the results of the sowing on 13/1/98, the latter theory is correct so far, but I have been confounded by the percentage germination dropping from about 30% to 4% over the mere period of ten weeks. We had good downpours of rain on 25/26 January (31.5mm) and 20mm on 8 February. Heavy rain usually triggers some germination but did not do so in this case. We usually found this species sheltering

under trees when we saw it in WA, and so perhaps the conditions are too hot. I will try to sow this species again in March when conditions may be more to its taste.

Latest results for *R. charsleyae* and *R. spicata* have dashed my expectations. Perhaps it is too soon to draw conclusions. It may be that these species do **not** germinate in a similar manner. *R. spicata* appears to germinate more easily than the other two, and the seed harvested from several generations of cultivated plants needs no pretreatment. These trials will be repeated in autumn.

It is gratifying that one of our new members has offered to trial six species for us. There are plenty of trials to do — a daunting number of them — so please keep offering your services. We are deeply grateful to all those members who have returned their results, and who are willing to continue to trial species.

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COMMENTS ON THE PROJECT AND OTHER MATTERS

by Mark Saxon

I was attracted to a recent article reproduced from the SGAP newsletter by Luke Sweedman from Kings Park. He suggests most daisies are probably wind pollinated. I think it quite unlikely most species of our Western Australian daisies, particularly *Rhodanthe,* are wind pollinated as Luke seems to be suggesting. I grow some of these species quite close to each other without any out-crossing occurring.

Fred Mazzaferri sent in an *R. chlorocephala* ssp. *splendida* head with a lateral bud arising from the stem. I guess this is not really an explanation but I have seen this feature in this species before, and on more than one occasion. I have also seen similar multiple buds (more than six) on a single stem on *R. chlorocephala* ssp. *rosea* induced by hormone based herbicides such as 2,4D-B, 2,4D-Amine, Eclipse and Lontrel.

You also mention in the newsletter about the prohibitive cost of using SISP. I'm not sure if I have mentioned it already but it is possible to buy Kings Park Smoked Water commercially now. The other ingredients are likely to be GA_3 and potassium salts. It could be possible to make a do-it-yourself low cost alternative.

In your discussion under the heading 'Everlastings Project' you suggest the possibility that after-ripening may shorten with repeated cultivation. After-ripening in *Schoenia filifolia* ssp. *subulifolia* appears unchanged for the cultivated form, and it can be some time (years) before most seed will germinate unless pretreatment is applied. *Schoenia filifolia* ssp. *filifolia* cultivated form does not have this rigorous after-ripening requirement. I have never grown this form from wild seed. Are there any results on this one? It could yield an interesting comparison. If you have any wild seed available I would like to test this.

(We have taken up this kind offer of Mark's. Bev has sent the seed he requested and we will all be interested in the results. After-ripening is a fascinating topic. ...Judy.)

****

EVALUATION OF *RHODANTHE* SPECIES TRIALLED

by Julie Strudwick

I've been 'evaluating' the *Rhodanthe* species I've trialled so far as regards their appeal as garden plants. I wonder if others share my opinion or not. To this date (30/10/97) I haven't been able to get *R. charsleyae, R. cremea, R. haigii* or *R. stuartiana* to grow on to the flowering stage, so I can't comment on them but my opinion of the others, for what it's worth, is as follows:-

- *R. battii* — wouldn't give it garden room. It grows well but there is no show from tiny, dull flowers.
- *R. chlorocephala* ssp. *rosea*, ssp. *splendida* and Balladonia form — all grow well and make a great display. Well worth growing in ground or containers.
- *R. citrina* — have only got one small plant to flower so far but, on the basis of that, would like to grow it if I could learn how!
- *R. corymbiflora* — current batch of seed is not germinating but I have grown it before. It is probably useful as filler in dried arrangements but doubt if I'd bother with it.
- *R. humboldtiana* — seems easy to grow and is nice and showy (though very floppy) in containers. It would probably be much better if massed in ground or grown among other plants to hold it up. Worth growing anyway.
- *R. polygalifolia* — lovely when I can get it to germinate. Worth persevering with, and good in containers.

- *R. psammophila* — plants collapsed badly after September rain, and are just sticks with a few leaves and a couple of compound heads on top. If plants were bushier and healthier this one could be worth garden space but not on present showing.
- *R. rubella* — as with *R. citrina* I've so far got just one tiny plant to flower. A lovely colour. There are a few coming on from September sowing so am hoping for better things.
- *R. spicata* — your dried specimen was dainty, Judy, but I find this does nothing for me as a garden plant, and I definitely would not grow it from choice.
- *R. sterilescens* — may be a useful bedding plant if it would grow properly but it does not like Upper Lurg. I've only tried it in containers, perhaps it would prefer the ground with less watering. It dampens off badly in winter.
- *R. stricta* — grew and flowered well in containers, and dries well when hung upside down as a whole 'branch'. Would probably be most effective grown among other plants rather than as a bedding plant. Could be a good 'cottage garden' plant I feel.

Add *Lawrencella rosea, Rhodanthe diffusa* ssp. *leucactina,* and *Schoenia macivorii* to the 'worth growing' list. I've tried to view them as Mr and Mrs Average Gardener would. Things like *R. battii, R. propinqua* and *R. spicata* don't make a 'show' so I doubt if anyone would want to grow them, and there are plenty of others that are much more attractive.

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CONTINUATION OF WA FORAY REPORT (Written at Cape Peron) by Jan Hall

We are slowly learning to recognise a fair number of the 'everlastings' listed. This obsession certainly has its highs and lows with, some days, my inability to recognise anything of use leading me off in the *Eremophila* direction. These have been flowering everywhere and one can at least see the identifiable features!

Some areas have not had the desirable sequence of rainfall required to produce uncommon species — which leads me to think this is the very reason why they are uncommon. Due to irregular rainfall the desert does not perform with regularity. Therefore, in areas such as Mt Augustus, the annuals were sometimes present but only a few centimetres in height — dwarfed and inhibited through lack of winter rain. This finally came too late for a good show in that area, and a 'no-show' at all for *R. forrestii* and *R. frenchii.* There were, however, plenty of other things to see and I enjoyed interesting walks in that area.

The first patches of colourful annuals were along the Oodnadatta Track and up to Alice Springs. By the time we had travelled down the Docker Community Road we realised that *Lawrencella davenportii* and *Rhodanthe charsleyae* are common right across the Centre, with *R. chlorocephala* ssp. *splendida* and *Cephalipterum drummondii* gaining a lot of the big picture. *Schoenia cassiniana* is another pretty plant which crops up throughout that area, and neither can one ignore *Brachyscome* spp. and *Calotis* spp. in their drifts along the road verges.

After six weeks of travelling and stopping frequently for a look, we are now quick to notice anything different and, as well, to see more variety. Yellow patches may be *Erymophyllum ramosum* (especially on limestone) or *Rhodanthe haigii* and *Helipterum craspedioides.* We eagerly looked ahead at Salt Gully for *Haptotrichion conicum* only to find bare roadsides instead. We stopped at the exact spot and there was one plant only. On further investigation they were about, but quite small. I hope the seed is viable.

Today at our camp in the Shark Bay area we have again sorted out the bulging plant press and endeavoured to match the waypoints and names ... a lot of work awaits in the sifting of information later. From this area we think we have *R. cremea* (rather small), *R. citrina, W. suaveolens* and *C. drummondii.* The yellow form is abundant but I fear the seed is immature. There are others we cannot find but will keep trying.

I am so grateful to have the colour photocopies and extra information as it's been a steep learning curve for us, and we'll need to do the trip again to find the real 'teasers'.

Jan and Alan brought their collections down to the November Meeting, and we were able to make preliminary identifications. Between them they had done a magnificent job — as we had known they would. There were quite a few specimens whose identities were unknown to us at the time but we were able to pore over them with books and microscopes later. Bev was very excited to find that she had *Chrysocephalum pterochaetum* and *C. puteale* amongst the specimens she had taken home. One more off the Wanted List! Unfortunately there was no seed with *C. puteale.* Bev thinks she may also have a *Waitzia* she needs. I have been delighted to find some more mature-looking *R. oppositifolia* and *R. cremea* and other goodies, and Natalie was overjoyed to receive the *H. conicum* seed which looks riper than the lot I collected in 1996. I wrote to Jan and Alan to enthuse about their wonderful effort. Jan replied on November 25th as follows:-

We were delighted to read your letter this morning, and so pleased to learn that we had collected something of value. We really had little idea of what would be useful and what plants to ignore at the time. However, I really enjoy that sort of field work (and the travelling to outback places!). It would be so much easier if we had the chance to go again but no chance at present.

We both got a lot out of attending the meeting. Alan, I know, was rewarded for his efforts by realising he now generally understands the language and is familiar with a lot of names on the list — not to mention the relevance of his keeping of the records.

We do hope Bev's work on *Chrysocephalum puteale* is going well, and of course we are thrilled at the possibility of a new one we've added to the list. I remembered *R. oppositifolia* was on one of your lists, 14km north of Norseman to Jimberlana Hill. (It was really only 5km north.) It had received little rain and the daisies were present but so small! I climbed this hot, rocky hillside and was about to give up when those sparse little plants appeared between the rocks. I could not find (nor did I have the endurance) *C. semicalvum* also listed for that spot but I do remember seeing little *Hyalosperma glutinosum* and *Lawrencella rosea.* It is probably one of those places that was marvellous last year!

Yesterday I had the pleasure of a letter from Esma with results of her identification of *Pterochaeta paniculata* (formerly *Waitzia paniculata*). It is so tiny, even with the microscope, that it is hard to pick the characteristics, so I enjoyed following her lead as to what to look for, and then finding it in Blackall & Grieve.

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The "*Chrysocephalum confusum*" group

by **Bev Courtney**

As a co-ordinator for the Everlasting Book Project, I scored three genera to deal with — *Waitzia*, *Schoenia* and *Chrysocephalum*. I hadn't grown the Waitzias before, so they promised an interesting challenge. I was familiar with some of the schoenias, especially *S. filifolia* subsp. *subulifolia*. *S. cassiniana* had always been a favourite. The chrysocephalums — well, everyone has grown them at some time or another, even me. I expected *C. apiculatum*, *C. semipapposum* and *C. baxteri* to be a pushover. But there were four strangers on the list — *C. puteale*, *C. semicalvum (with two subspecies)*, *C. eremaeum* and *C. pterochaetum.* I hadn't even heard of them, much less grown them, but fortunately everyone else seemed to be in the same boat. I saw some slides, was given some pressings and seed that didn't come up, decided that they all looked superficially the same, put them into a group which I called the "*C. confusum* group" and hoped that they would sort themselves out if I ignored them. That didn't happen of course, and eventually I had to knuckle down and unconfuse them. The result is the accompanying comparison table. It was produced from descriptions in the *Flora of Central Australia*, the *Flora of South Australia* and sundry bits of information provided on scraps of paper by Esma and Judy. By sitting down with the table and the pressings and the microscope, I think I'm beginning to see light at the end of the tunnel.

Briefly, if the foliage smells strongly (like tomcats to me), and the achenes are glabrous, it's probably *C. semicalvum* subsp. *semicalvum*. The other subspecies, subsp. *vinaceum* apparently occurs only on Aboriginal land so we aren't likely to see that one, but it sounds attractive with its burgundy coloured branches on the new season's growth.

If the achenes have only 5-8 pappus bristles with feathery tips, then it's *C. eremaeum.*

If the heads are in corymbose clusters, then it has to be *C. pterochaetum*, although the *Flora of Central Australia* says the heads can be single or clustered. Esma has an interesting slide which shows what looks like a single plant, but the heads on the right hand side of the picture are clustered, while those on the left are single. We have decided that it is two plants growing close together — one with single heads and one with corymbose heads.

Jan Hall came back from her trip to WA with a pressing which she called *Chrysocephalum eremaeum* but which fits the description of *C. puteale*. The foliage is very sticky and the leaves are pressed against the stems, with the tips curved outwards. Immature seed pulled out of the heads has 12 pappus bristles, so it is not *C. eremaeum*.

I now have pressings of all four species in the "*C. confusum*" group. With the comparison table and the four species spread out in front of me, I feel much more comfortable with them and wonder why I was ever confused. The only task remaining is to get seed which germinates!

	C. puteale	*C. semicalvum* subsp *semicalvum* Hill Everlasting	*C.eremaeum* Haegi sp. nov.	*C. pterochaetum* (F. Muell.) F. Muell.
Habit	Densely-branched shrub or subshrub, 10–30cm. Erect c numerous twiggy branches	Malodorous bushy tap-rooted perennial herb, 20–40cm tall, up to 50cm wide, c successive seasons growth from the lower woody branches or the rootstock	Much-branched, tap-rooted herb, 20–40cm high & wide, c a perennial rootstock	Rigid bushy perennial herb, 15–40 cm high & wide, or subshrub c woody stock or lower woody branches
Stems & branches	White, tomentose	Glandular-scabrid c sparse to dense vestiture of woolly-cobwebby hairs or rarely such hairs absent	Moderately to densely woolly-cobwebby c underlying inconspicuous glandular hairs	White-felty c somewhat matted woolly-cobwebby hairs
Leaves	Viscid, linear-subulate, 3–10mm long, appressed to stems but c tips spreading, uppermost c scarious tips	Linear or linear-lanceolate, margins recurved to revolute, sometimes undulate, acuminate to apiculate, with a broadly sessile base, 0.8–3cm long, 1–4mm wide, c woolly-cobwebby hairs at least on the underside	Linear to oblanceolate, c a recurved sometimes undulate margin, acute to apiculate apex, broadly sessile base, 0.5–1.5cm long, 1.3–3mm wide, glandular-scabrid & additionally c a sparse to dense vestiture of woolly-cobwebby hairs especially on underside	Linear to linear-oblanceolate c recurved margins, blunt apex & broadly sessile base, 1–3cm long, 1–1.5mm wide, glandular scabrid on both sides, sometimes c scattered woolly hairs
Peduncles	Leafy	2–8cm long, naked or c a few distant much-reduced leaves, terminating leafy branches	1–3 cm long with a few distant, much-reduced leaves, terminating leafy branches	Short, to 10mm
Capitula	Hemispherical, 4–8mm wide, solitary; involucre hemispherical, 3–6mm long	Broadly campanulate to hemispherical, 6–10mm long	Broadly campanulate to hemispherical, 6–8 mm long	In subcorymbose clusters of 3–8, terminating long branchlets bearing reduced leaves, narrowly campanulate to obconical, 5–7mm long, 5–6mm wide (see notes below)
Involucral bracts	Yellow gold, scarious c ciliate, laciniate margins; outer bracts narrow-ovate to oblong, acute, sessile to shortly clawed; inner bracts lanceolate, acute to subulate c distinct yellow claw	All about equal in length, c laciniate margins extending into long cobwebby hairs loosely enveloping the involucre, the majority hyaline to scarious c ± opaque tips, stramineous to golden-brown, the outer ones lanceolate, the inner ones with linear herbaceous glandular-pubescent claws and subulate laminae	Graded in length c inner ones longest, all or most c a glandular & cobwebby vestiture, c long-ciliate margins, the cilia in length about equal to the width of the bracts, majority of bracts hyaline to scarious, c ± opaque tips, pale golden-yellow, outer ones linear-lanceolate, inner ones c linear-herbaceous glandular-pubescent claws and narrowly ovate-acuminate laminae	5- or 6-seriate, the inner ones longest, translucent, stramineous, papillose, c a basal glandular-pubescent herbaceous mid-vein passing into a short claw, shortly ciliate c the cilia in length a fifth to a quarter of the width of the bracts; outer bracts c golden-brown to brown almost opaque tips; inner bracts c wholly scarious laminae
Florets	20–33, occasionally c up to 3 female florets c 3-lobed corolla & lacking a pappus	Exceeding the involucre by 1–2mm	Exceeding the involucre by c 2mm	Slightly exceeding the involucre
Achenes	Papillose	Oblong, compressed, glabrous	Oblong, compressed, papillose	Obovoid-oblong, densely papillose

Pappus bristles	Of bisexual florets 10–16, plumose	Of bisexual florets 12–20, barbellate, more strongly so towards the apex Of female florets absent or rarely 1 or 2	Of the bisexual ones, 5–8, barbellate towards the base, penicillate at the apex Of female ones absent or 1	Of bisexual florets 8–19, subplumose from the base where very shortly connate, barbellate towards the apex Of female florets lacking
Synonym	*Helipterum adpressum* W.V. Fitzg.	*Leptorhynchos ambiguus* (Turcz.) Benth. *H. semicalvum* F. Muell.	*H. ambiguum* Turcz. var. *paucisetum* J. Black	*Chrysocephalum pterochaetum* F. Muell. *Helipterum pterochaetum* (F. Muell.) Benth.
Derivation	*puteale* — of or belonging to a well *adpressum* — from appressed, meaning pressed closely to the stem	*semicalvum* — half bald, possibly referring to the leaves *ambiguus* — doubtful	*eremaeum* — solitary, uninhabited, hence the desert, refers to the habitat in arid central Aust.	*pterochaetum* — having winged hairs, a reference to the plumed pappus bristles.
Distribution	WA Occurs in rocky valleys and on slopes of low hills. Grows on red sands and stony soils, often near water.	SA WA NT NSW ?Vic Usually found on shallow stony soils on timbered slopes of ranges, hills & rocky outcrops. Widespread but occurring as scattered plants	SA WA NT Open sites on sand dunes & in swales or on sandplains	SA WA NT Qld NSW In sand among rocks, in or near dry creek beds, sandy gibber & rocky hillslopes
Flowering	Winter to late spring	Most of year	Most of year, especially July–Sept	Most of year, esp June–Oct
Notes	Appears very similar to some specimens of *C. eremaeum* but is distinctive in possessing 10–16 completely plumose bristles on the bisexual florets and 3 female florets, compared with *C. eremaeum* with 4-8 partially plumose bristles on bisexual florets and more female florets	Subsp. *vinaceum* differs from subsp. *semicalvum* in lacking woody above-ground parts, branches of current seasons growth a deep purplish-red, subglabrous; leaves (except near the base of the plant) essentially lacking woolly-cobwebby hairs; involucral bracts entirely lacking cobwebby hairs *vinaceum*, wine-coloured, referring to the burgundy-coloured branches	Distinguished from *C. semicalvum* subsp *semicalvum* in having ciliate involucral bracts, fewer pappus bristles & papillose achenes	Flora of Central Australia says heads can be single or clustered
Specimens	1. 169k E Tjukayirla, JH, open acacia shrubland, sandy clay c quartz pebbles/gibber among grasses 2. 150k S Kumarina ES 7/88	1. Blackheath form, plants – JB; seed – JI 2. Aroona Valley, SA, plant – ES	1. Old South Rd, Ghan Tk, JB 2. Kings Canyon Rd, 8/96 3. 200m N Kings Can Car Pk 4. Well 36, Canning Stck Rte 9/86 (smells, too many pappus bristles, not penicillate at apex, but ID'd by L. Haegi) 5. Well 24, Canning S R, 9/86 6. Erldunda, MS, 7/90	1. Ormiston Gorge, ES 2. 160k S Coober Pedy, MS 3. A/Springs Wildlife Park, ES, Sal 229, 8/96, single heads (smells like *C. semicalvum* & has woolly-cobwebby hairs on undersides of leaves) 4. Wilson R. W Qld, ES, 8/89 5. Cassia Hill Walk, Simpson's Gap MS, 6/90

REPORT FROM A NEW MEMBER

by Lyndal Howard

You ask me for my reasons for wanting to join the Study Group. I have always liked and grown the common 'helichrysums' and brachyscomes but did not realize till recently how many there are. I also like to have grey and silver plants in my garden, and they have provided that, added to some South African ones I have.

I have almost always grown plants from cuttings and have not had much experience growing from seed. I guess I can learn. I am willing to grow 5 or 6 species and leave it to you to decide which group I join.

We moved to Belair from the Adelaide Plains six and a half years ago. The block is irregular, large for a suburban block, and on a slope of approx. 1/5. There were about ten large gums then, now they are larger. However, most of the garden gets morning sun, some of it up to 8 hours in summer. The soil was sticky clay. I have applied gypsum and mulch, and now it is much better on top. The soil is neutral, slightly acid, which is very different from the alkaline soil of the Adelaide Plains. Our weather is about 2° cooler than Adelaide and slightly wetter. I have not had trouble with frost.

I have planted practically every native shrub I could find and now we are starting to see results. Almost every week something blooms which I have never seen before except in pictures! Exciting! So now I have time to concentrate on smaller plants and ground covers and Australian Daisies.

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THE BALLADONIA FORM of *RHODANTHE CHLOROCEPHALA*

by Julie Strudwick

Rhodanthe chlorocephala has definitely crossed with *R. chlorocephala* ssp. *rosea*. I collected seed last year from the plants that I suspected were crosses, and they have produced very similar flowers — various shades of pink, smaller than *rosea* but bigger and flatter than Balladonia and with the upright habit of *rosea*. Some of the plants from the seed collected from Balladonia have produced the same habit and colour — about 90% are typical Balladonia in appearance and habit. I suppose that if the upright-growing plants are pulled out each time one might get back to pure Balladonia seed The crosses are very pretty, and are daintier than *R. chlorocephala* ssp. *rosea* — would be lovely wired. I think Maureen said she had some like the photo I showed at Gloria's last year. I'm wondering if it proves that the Balladonia form is *R. chlorocephala* ssp. *rosea* after all or just that they cross because they are the same species even though they are different subspecies.

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USING *BRACTEANTHA BRACTEATA*

by Peg McAllister

My plants came from the breeding program by Natalie Peate where she produced a range of good colour forms on hardy plants. Very soon I found them useful for wiring and drying in quantity for my daughter's business. Buds are picked when the outer layer of bracts has opened. While drying, the other bracts open and loosen over but not revealing the centre. Plants need to be propagated from cuttings for replacement each one or two years as they get woody and produce smaller and fewer flowers with buds that feel soft to the touch. This means that the inner bracts have become thin and narrow and, if dried, the flower will open out and the small bracts, having little attachment, will brush off easily.

After three or four years I have met other users along the way. The obvious one is the Australian Painted Lady butterfly which I enjoy sharing with as it does no harm. In Charles M°Cubbin's book *Australian Butterflies* is an excellent illustration of a branch of *Helichrysum bracteatum* as it was at that time, with *Vanessa kershawi* pupa and larva thereon. So I was able to identify the small dark hairy, spiny caterpillars well down from the tips on my plants in no great numbers, and to read that the larvae leave the food plant to pupate with no harm done.

I'm sure everyone knows the Tip Roller, Tortricidae or Bell Moth, a small brown moth with its many progeny sewing together the tips on our plants. They really attack my *Bracteantha* with sometimes as many as three ranged from the tip down, the buds enclosed in web, chewed leaves and droppings. The flowers are not eaten but hand cleaning is required for the growth of the plant.

I used to discard a lot of healthy looking buds because of a neat, round hole a good pinhead size at the base of the receptacle. I tried probing the hole and even cut into it but could find no damage or leftovers. I found that the hole was a pit not bottomless where a small moth of the Bogong group has been and gone unseen and requiring very little for its life cycle.

There is one user I could well do without. It is entirely unseen at all stages leaving chaos in its wake. I cut the tops off milk cartons and stand them in a cardboard box to store the daisies after wiring until they are required, maybe months ahead. They look quite perfect until one or two in a batch on being picked up simply disintegrate at a breath. I am left holding a wire with a hard lump of corrosion of wire and sap that is for holding the flower on the wire securely. The bracts scatter as they have discarded as worthless, and the frass is just powder and droppings, not an edible scrap left and no sign of life past or present. I presume the egg was present when buds were cut, and the damage was done during storage. This could suggest the work of one of the weevil family. I haven't seen any extra small moths in the house before or after so it could be the perfect crime.

I have taken an interest and learned a lot from my friend, that quiet entomologist Nigel Quick, who purely from my descriptions has suggested the identities of these other users that I have met along the way.

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CORRESPONDENCE FROM SMITHS LAKE

from Marcel Terry

17/11/97: 'Margaret and I leave on Monday for Canberra where I have to call on the Australian National Insect Collection for identification of fly larva I have found in various daisies (including *S. spathulatus*), and of adult flies I have reared from *Ozothamnus diosmifolius* and *Senecio madagascariensis* (fireweed). We then go on to Adelaide to meet a researcher into one of the fly families in which I am interested — apparently he is the only expert in Australia for that particular fly family.

I note your comments about the flies seen by Syd Oats on *Bracteantha bracteata*. The range of insects visiting the flower heads of daisies obviously is extensive and they include more than pollinators. Whenever I pass a daisy in the garden I stop to see what is going on and I note that many a time the welcoming committee in the flower head includes one or more flower spiders!

Plants of interest in my study include *Ozothamnus diosmifolius* and some *Cassinia* species, both growing locally. I have found larvae of 2 different fly species in the former plant but none, so far, in *Cassinia uncata* which flowered here a short while ago. When next Margaret and I go to Darwin we must go through Helidon and examine Esther Cook's hybrid for insect larvae and, of course, look at the morphology of the flower head.

As soon as I have a chance, I will attempt to grow the *S. spathulatus* (syn. *S. lautus* var. *maritimus*) seeds you forwarded and compare results also with those collected from the dunes in nearby Booti Booti National Park. *S. spathulatus* seems to be the only locally occurring species of the *S. lautus* complex. I note Maureen Schaumann's comments about the extent of *S. spathulatus* along the coast at Hat Head, Evans Head and Sawtell. When I first located this species in our local area I didn't find all that many plants but later on I found extensive patches in a number of locations. I have collected some seed of *Bracteantha bracteata* growing on the side of the road between Gloucester and Walcha. The plants were up to 1m high.'

12/1/98: 'Frass can be defined as the faeces and other waste matter left behind by feeding insects. With free-living, moving or flying insects frass often is not particularly noticeable but, in the case of larvae confined to tight places, frass can be clearly seen. Whilst frass can consist of very small pellets, in confined spaces some larvae tend to compact it behind them, and I have seen long channels of compacted frass spiralling down *Banksia* inflorescences among the bracts, particularly in the case of *Lepidoptera* larvae. Careful exploration will lead to the larva unless, of course, it has already pupated and flown the coop, or rather the *Banksia* inflorescence. I have noted with interest Peg McAllister's experience. I am not an entomologist but from the many papers I have read regarding the presence of *Diptera* (fly) larvae in Compositae flower heads I have gained the impression that mostly the part of the insect's life cycle in the flower head starts with eggs being laid by the adult female in flower head buds at a stage where the involucral bracts are still closed over the florets. In many cases the eggs are laid alongside the corolla tubes of the florets, among the pappus bristles where these are present.

While the fly's ovipositor would leave a mark if it passes through an involucral bract, such a mark would be very small and not easily noticeable. I am not sure that I ever have found these marks except in the perianth parts of some grevilleas. When the larva emerges from the egg it would then enter the corolla tube, eat its way down to the ovary, and consume the developing seeds. Sometimes the larvae may also eat their way into the receptacle, particularly when there are many of them. In doing so, they may also tap the vascular bundles in the receptacle as a source of food.

But from what I have seen the fly larvae don't leave all that much frass behind and, if Peg McAllister found a lot of it, a *Lepidoptera* may be the culprit. Eggs may have been laid on the peduncle, and the emerging larva could have entered the stem at that point and worked its way up to the flower head. In October last year I sampled some flower heads of *Senecio vagus* ssp. *eglandulosus* on a hillside in nearby Booti Booti National Park, and in one flower head I found a large *Lepidoptera* larva in a channel on the periphery inside the flower head at the level of the achenes. The sample I took comprised only the flower head and part of the peduncle, but that part was filled with frass, as was the space below the receptacle which in mature flower heads of this plant is mostly hollow. In addition there was a hole in the receptacle. I noted at the time that nothing was visible from the outside of the flower head! This, indeed, is somewhat of a hallmark of the lifestyle of the immature stages of *Diptera* in Compositae flower heads, as I have found in my field work. The particular mode of operation must afford the immature insect **some** protection from predators.

Peg McAllister may also be interested to know that, when I sampled some flower heads of *Bracteantha bracteata* on the Gloucester–Walcha Road in August this year I found in one flower head two (black) pupal cases. These were standing upright and both were sunk into the receptacle to different depths. One of them was 4½mm high and 2mm wide. In this case, however, damage to the flower head was clearly visible from the outside.'

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***Brachyscome aculeata* (and a few notes on *Lawrencella davenportii*)** by Barrie Hadlow

Brachyscome aculeata

In early March 1997, I walked with a group of SGAP "Wednesday Walkers" (including another ADSG member, Ros Cornish) to 'Square Rock'. This geographic feature is at an altitude of 1400m within the Namadgi National Park A.C.T., and occurs within the Brindabella Range, a heavily forested granite area about 54km from Canberra city.

We recorded 70 plant species on this very special walk, which includes forested slopes of *Eucalyptus dives* — 'Broad-leaf Peppermint', *E. pauciflora* — 'Snow Gum', and *E. delegatensis* — 'Alpine Ash'. A high country swamp feature is also encountered on this walk, with a range of plant species preferring 'soggy' conditions. These include *Oreomyrrhis, Epilobium* and *Euphrasia* spp. Close to this swamp was the very showy *Podolepis robusta* flowering well. Of the 15 'daisies' identified on the day a brachyscome, *B. aculeata,* was noticeable for its many 'snow' white flower heads, tall but lax growth, and ability to tolerate shade in the moist open woodland habitat.

Having subsequently obtained a small quantity of *B. aculeata* seed, I found no germination difficulty. Approximately 50 seeds sown on the 30th September began germinating on about 17th October and resulted in 24 plants over three weeks or so. Three plants placed into a sunny well drained garden position in November grew relatively quickly, developing many stem leaves as growth increased to take over from the initial whirl of basal foliage. Flowers were opening in December from typically lax, elongating stems, and soon a constant show of flower heads provided a permanent summer display. This occurred in spite of some very hot December weather, atypical for Canberra. Watering was provided throughout, however there was no evidence of wilting even when some irregularity in watering occurred. These November plants continue to brighten the garden (and me) with their many flower heads in mid-January, and I'm sure will go on producing for many weeks or months yet.

As a corollary, I have planted a further 12 *B. aculeata* seedlings in a sheltered and shaded area which retains good soil moisture; whether this will be at the expense of flower quantity remains to be seen.

Lawrencella davenportii

A second '97 sowing of my 5 trial species in September provided success again only with one of the group. This time it was the turn of *Lawrencella davenportii.* Three plants are growing strongly (?) in a garden bed

close to our front door in a 'courtyard' area. Two of these are flowering, and look great with their yellow/gold disc florets and mottled pink ray florets. The involucral bracts are green, the flower heads are about 2.0cm in diameter, with 5 or 6 heads per plant. The tallest plant stands 18.5cm and there are a few stem leaves to 5 x 0.5cm (or broader) — short fine hairs on these are abundant. An interesting feature of the ray florets is that they are, as a group, recurved in the heat of the day, however, they may reverse this to a 'dish' shape floret position in cooler, temperate, or moist conditions. This, with their fascinating colour, makes this species very special; the colour reminding me of the Hyacinth Orchid, *Dipodium punctatum,* but there the similarity stops.

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Postscript on Wallabies

by **Ros Cornish**

When I first joined ADSG you may recall I mentioned (NL 42) having problems with wallabies eating flowers, particularly my daisies, and asked whether any members had a solution. In NL 43 Bob Magnus told of his ultimate solution — a high fence. Two and a half years later, after trying everything including a four strand electric fence, we have a dust bowl in the front garden apart from 6 kangaroo paws which have survived – only because they are surrounded by chicken wire cages. The wretches have even started munching the correas and some of the less prickly grevilleas. We have now given in and I have just finished digging the holes for the fence posts – a 2m high security mesh fence with three strands of wire. It will cost a packet but we are doing it all ourselves to cut costs (the blisters will heal). I have now regained my enthusiasm for growing plants and will soon sow a lot of seeds which I had confined to a cupboard in despair. I am tempted to sit up on the night we finish the fence to see the dismayed look on the wallaby's (or should I say wallabies') face(s) when they bounce off the mesh. With luck they will wear a path around the perimeter, providing us with a fire break!

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NON-MEMBER'S QUESTION

John Clark of Lovers' Leap Nursery at Elaine (Vic), who has donated plants of *Bracteantha* aff. *subundulata* (the Dam Daisy) to ADSG last spring, wrote with a question on 17/12/97: 'I have not tried SISP before so I am keen to see the results. I bought two lots of *Pimelea physodes* seed this year and have grown 60 from the first batch so far. I am trying some different methods of germination with the second batch, including SISP. I notice you soak your seeds in SISP in sherry glasses. An interesting idea! Do we sterilise the glasses with sherry first and dispose of it in the approved manner?'

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MEMBERS' REPORTS

Barbara Buchanan of Myrrhee (Vic) writes on 4/8/97: I've not very much to report on the Daisy front. *Cassinia subtropica* flowered but I think the drought savaged it a bit, not the frost. It has two shoots from the ground and one of them is quite dead. The other is seedy, flower heads OK although now old, but leaves yellowing and burnt-looking. Frost / drought / poor roots / borers? It's about 0.5m x 0.2m. The foliage has been attractive but is not now. I daren't prune it before spring.

A lot of my May plantings were from the November meeting and have all stood up to the frost as far as I can tell. We had the pleasure of June Rogers talking about Wimmera daisies, which went off very well. The topic is a guarantee of success in itself, but she put across a personal involvement and had the material very well organized.

We had a *Cassinia arcuata* appear in the drive last year, the first I have seen on the place although they were thick on a nearby area where the soil had been disturbed. It was a nice fresh green until it flowered, then with the drought etc. it went very brown. Now it is shooting fresh green again but it has not been pruned so it looks a bit pie-bald. Of course it is right on the drive, not a foot back, so it may have to be shifted but I hope there will be seeds floating around, and some may germinate where they will be really welcome. It's still no more than 2 feet high, if that, and very slender.

Irene Cullen of Algester (Qld) writes on 4/11/97: 'Of the plants you sent via Pat Shaw after the Ballarat Conference, three have proved extremely good under the harsh conditions they've had to endure. They are:

Brachyscome angustifolia x *B. procumbens* — very vigorous, almost a year round flower display.
Brachyscome 'Sylvia' — another good doer, not as vigorous as the above.
B. formosa (Coonabarabran) x *B. angustifolia* — dormant in winter.

So it seems the *B. angustifolia* crosses respond well here although, strangely enough, I have lost both *B.angustifolia* var. *angustifolia* and *B. angustifolia* var. *heterophylla* since bringing them here. The answer is probably that they had morning shade and afternoon sun — which is the reverse of the crosses you sent.'

Ray Purches of Wangaratta (Vic) writes on 5/11/97: 'Yes, Riceflower is the in thing at Bald Hill, with the dreaded Queensland Selections (see Tony Slater's comments in *Australian Horticulture*) looking extremely good so far — to our surprise.

We are pedalling like mad to catch up with all the production knowledge needed for successful (wildflower) farming, and continuing contact with experts like Tony Slater (Agric-Knoxfield), Peter Beal (QDPI-Redlands), Graeme and Esther Cook (Helidon-Qld) has been extremely useful.

One little gem came recently from Tony Slater who commented that our growing conditions at Wangaratta would be less harsh than that of the Cooks at Helidon in Queensland. In response to my quizzical tone he said that the Cooks once went four years without a drop of rain! Perhaps this says as much about Graeme and Esther Cook's strength of character as it does for the arid adaptability of this beautiful daisy.'

Colin Jones of Orange (NSW) writes on 9/11/97: 'You mentioned that Rodger Elliot was trialling *B.* 'Betty Campbell' and *B.* 'Maureen'. My namesake *B.* 'Colin Jones' (which flowers from September to May) is planted adjacent to Betty (which flowers from October to May), and it has performed in our climate much more robustly, etc. Another plant that has established itself strongly is *B. angustifolia* (mauve) x *B. formosa* (mauve).

I have started collecting seed of *B. sieberi* var. *gunnii* and *Pycnosorus* sp. (Little Desert). It seems earlier than usual this year.

Over the last two years I have collected a number of *Chrysocephalum apiculatum* and *C. semipapposum* forms from Queensland to Victoria. After losing a number of specimens I decided that I would have to save the situation. As the *Ixiolaena leptolepis* out in the back lane had either died or gone very woody I reckoned that it would be a good area to put them — even if they did sucker. So now I have about 14 *C. apiculatum* and 5 *C. semipapposum* out there.'

My email address is: **C.JONES@cww.octec.org.au**

Brian Walker of Greenacres (SA) writes on 20/11/97: 'In the last two years I grew Julie's and John's hybrid yellow brachyscome (*Brachyscome* 'Jumbo Yellow') on a trial basis in our revamped front garden. Soil, of course, alkaline plus and loamy clay. I can report that the plant has done exceptionally well; it is drought tolerant, doesn't appear to attract insect attack, is a strong grower, strikes easily from cuttings and, more importantly, does not suffer from lime-induced chlorosis! It is a very happy garden plant for our locality and it is in flower all year round. It's what you might call a success story (once again for our conditions).'
(Despite the fact that Brian is the Barrie's brother-in-law, he would be completely detached in his evaluation. ... Judy.)

Betty Taylor of Maleny (Qld) sent us seed on 24/11/97, and the following report on the results of her previous germinations. This is the sort of report Esma and I dream about as it is so helpful to know what is germinating and what is not, and how the seed was stored:-

Brachyscome aculeata (Hamilton Gorge) — NIL
B. basaltica var. *gracilis* (Narrabri, 4°C) — V. Good
B. aff. *curvicarpa* (ex Quilpie, 4°C) — Good
B. microcarpa (ex Yamba, 4°C) — Good
Chrysocephalum semipapposum (Lorne, 4°C) — Excellent
" " (Inglewood, 4°C) — V. Good
Ammobium alatum 'Bikini' (4°C) — Excellent
Helichrysum rupicola (Pat Shaw, 4°C) — NIL
H. rutidolepis (4°C) — NIL
Ixiolaena leptolepis (4°C) — NIL
Ozothamnus diosmifolius Orriell's Seed — NIL
Ozothamnus obcordatus (4°C) — Good

Julie Strudwick of Upper Lurg near Benalla (Vic) writes on 8/12/97: 'It looks as if my new Project Daisy Garden is going to be a success. The little plants of *R. haigii* and *R. citrina* I planted out before I went down to Melbourne for the December meeting are standing up happily and have made some growth already. I planted a row of Natalie's *Bracteantha subundulata* along the back on an overcast day, put in *C. apiculatum* from Anglesea, *Pycnosorus thompsonianus* and *Leptorhynchos tenuifolius* from Rowan's nursery and they, too, are standing up stiffly and looking happy. The garden is in full sun for about 3 hours from 2.30pm. The plants have had no water since being watered in when they were planted, so here's hoping the promising beginning will be fulfilled. The plants are mulched with the new Debco Mulch & Feed.

The leaves on the seedlings of *C. apiculatum* (Mt William) given to me by Maureen are grey but not silver like her plants, and they are smaller. Presumably it had crossed with another form in her garden. While not spectacular like her "Mt William" it is a lovely little plant.'

Judy Barker of East Hawthorn (Vic) reports on 1/1/98: I'm not happy with the seedling growth in my seed mix of 1 part cocopeat to 4 parts perlite — even with the addition of a pinch of Hoof and Horn to each margarine container. Seedlings germinate but are terribly slow to grow thereafter. I have returned to a mix of 1 part peat moss to 4 parts perlite, and I

add IBDU when the seedlings are about two weeks old and when the weather is cool. I will also try the new Yates seed mix because my memory is not always reliable these days. It would be easier to have inbuilt fertilising.

David Penn of Epping, NSW has written to tell us his email address is dpenn@netspace.net.au

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HELP

Could members who are growing *Brachyscome* 'Purple Mist' furnish a few details about size of plant, colour of flower, type of foliage, flowering period and suitable conditions, please? Does anyone know from whence it came? How does it compare with *Brachyscome multifida* (Peg's large form) or *B.* 'Amethyst'?

SNIPPETS

- There is a report in *Australian Horticulture* (Dec 1997–Jan 1998) that Kevin Handreck and Arthur Yates & Co. Ltd. co-operated in the release of a new seed raising mix which has slow-release fertiliser already added. This mix is said to have the best balance between water holding and drainage capacities, and the fertiliser added is Nutricote. The permeable polymer coating of the granules releases food at a safe level — even for the young roots of seedlings. The mix is also suitable for propagation from cuttings. It is available in 5l and 15l bags. Yates say it is sold at K-Mart and some Target stores. (PS — it is sold at the Box Hill Target, and a 15 litre bag costs $6.95.)

- (An extract from an article which appeared in the SGAP Journal of SA, November 1997 issue. This article is titled 'Recovery Projects For Endangered Plant Species', and is a summary of a seminar by Birgitte Sorensen, a scientist from the Black Hill Flora Centre, delivered at the SGAP Regional Meeting on October 24th, 1996) ..... 'Only one known South Australian population of *Brachycome muelleri* remains in the Baxter Hills, on north-east Eyre Peninsula. Being an annual species, it emerges during late winter, and senesces in early to late spring. Field trials were recently established to determine the significance of threatening factors such as weed competition, grazing and/or trampling by stock, goats, rabbits and kangaroos. Trials were also set up to study seed production, mechanisms of seed dispersal and environmental demography (the effect of factors such as climate, soil type, aspect, vegetation association, exposure, light / shade on population dynamics such as seedling emergence, regeneration, plant mortality, etc.). Preliminary experiments indicate that germination is enhanced if the seed is irrigated with smoked water. Further tests will be conducted to investigate the efficacy of smoked water as a pretreatment.'

- Greg Powell, an ADSG supporter, works as a volunteer at Serendip Sanctuary in Lara at the foot of the You Yangs. He reports that a new area of grassland has been prepared which includes over 40 species of grasses, herbs, Brittle Greenhoods, Little Dumpies (rare lilies) and other wildflowers. Greg has been harvesting the native grasses and chaffing. Up to 1 million seeds have been spread at Serendip on a windy day. He collected and cleaned 680g (1lb. 8ozs) of Clustered Everlasting seed from the area! Other wildflower seed will also be harvested and spread in a similar manner.

  Greg found that 100–200 or more local indigenous snails have taken up residence in the new grass area. They are creamy white, about the size of a one cent piece or smaller. Many species of birds are coming in to graze on this grassland. In the 1997 season native ducks have laid eggs in at least 5 nest sites, and the eggs have hatched. They include ibis, parrots, finches, robins, wrens, wattle birds, kookaburras, and magpie geese. Wetland and dryland areas are also being landscaped and planted with various species of native plants, the total number to date being of the order of 40,000. As a result of these large regeneration projects there has been a marked increase in the numbers and varieties of native fauna, from spiders, butterflies and moths to two Blue-tongue Lizards and a rare baby Tawny Frogmouth, many of which are now permanent residents of Serendip.

- Ness Botanic Gardens, associated with the University of Liverpool, are holding a centenary program throughout 1998. Jeff Irons is the speaker on the first Sunday in November; his subject is 'Adventurous plants for lazy gardeners'.

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MAY MEETING ARRANGEMENTS: SATURDAY, 2nd May at 9 Widford Street, East Hawthorn, 3123. Tel (03) 9813 2916

PROGRAM (tentative)

1.30–2.30 pm	Plant sharing. **PLEASE NOTE THE EARLIER START TO THIS SEGMENT.**
2.30–3.00 pm	Afternoon tea
3.00–3.30 pm	Show and Tell
3.30–6.00 pm	Short talks by members on new species in cultivation Progress on Everlastings Project Members' questions
6.00pm	Pre-dinner drinks and dinner (provided by Melbourne members)
7.45pm	Talk (to be arranged) Slides collected for the Project (and others)

This is a most enjoyable gathering of members, stimulating but not too arduous. In order for us to cater adequately and to avoid last minute nervous breakdowns, we should know whether you are coming at least two weeks in advance. **Please don't forget to advise us.** Let us know if you need beds, and we will arrange them. It is not necessary to bring plants for sharing. We are a generous mob! On the Sunday morning we hope to arrange one or two garden visits and/or plant-buying opportunities.

LETTER FROM THE LEADER

I hope your Christmas holidays were enjoyable. The quiet period between Christmas Day and the end of January is always a peaceful time for me. I collect seed, try to clean it and count it while watching cricket on television, edit the next March newsletter, and do some seed sowing in a bid to have something for sale at the SGAP Vic Autumn Plant Sale. On cool days I get into the garden to pull weeds and plant all those plants that have been accumulating since May, and I can also pot the seedlings that never did get potted due to lack of time. This is a time for entering Project results on our beautiful charts (drawn up by Bev and Natalie), for tidying the study, the Seed Room, the shed and the potting shed. Best of all, it is a time for thinking. At the end of January I should have a new crop of theories, and a new set of ways to test them. Don't think it's all daisy work. I also have time to see family and friends.

At our meeting on 5th August Rodger Elliot and Mark Lunghusen came to talk to us about the good selected forms and hybrids that Koala Blooms are involved in growing, and selling here and overseas. They showed us many impressive posters, photographs and slides of daisies and other species that were selling well in USA and elsewhere. Ten members were present, including two country members. It was an interesting and informative meeting, extremely enjoyable. Thank you, Rodger and Mark.

The December meeting is usually all play and no work. This time we spent Tuesday 2nd December on a nursery crawl. We met at Richard Cuming's Westernport Native Nursery at 10.00am and bought numerous plants. Richard's 2" pots of fairly unusual species had us all clustering around them, trying to curb our tendencies to snatch delicacies from beneath other hovering hands. We then moved off to Rowan Cuming's indigenous nursery about 2km away. Rowan's forestry tubes are keenly priced, and we bought up a goodly number of them. Nanette and Brian Cuming very kindly invited us to lunch on their lawn, overlooking their dam (which looks more like a lake to city dwellers). After lunch we tried to pack our purchases into tidier, smaller spaces, and set off for Richard Anderson's Merricks Nursery. Richard was away on holidays but he had arranged for Brian Mole to show us around. We were extremely impressed by this nursery. Immaculate is the word for it! It was beautifully set out, neat, colour co-ordinated, and the area containing the pots appeared to be totally free of weeds. One of the nicest aspects was a very large raised bed containing many daisies, tufties, small plants and ground covers — all seemingly in excellent health. At the end of our tour we discovered that we could purchase plants here too, and we proceeded to do so with enthusiasm. As if all this was not enough, Marj Anderson had baked us delicious fruit scones and we had a most pleasant afternoon tea around a couple of tables under a tree. We thank all the people involved in this happy day most sincerely. With the extra pots we had acquired we had another serious attempt at packing the cars before we set off home, but in my car the back seat passengers had pots around their feet and possibly even on their knees.

It was lovely to have country members, Gloria Thomlinson and Julie Strudwick, with us for the above crawl, and it was a particular pleasure to have the company of interstate members, Corinne and Trevor Hampel, from Murray Bridge. Corinne and Trevor were here for almost a week, and so Alf and Esma escorted them to the Cranbourne Annexe, I took them to Maranoa Gardens, Kuranga and Karwarra Garden, and they went to see Peg McAllister's garden on the way home from the Healesville Sanctuary. Trevor is interested in birds and observed quite a few on these jaunts. Corinne has written to say that they very much enjoyed their trip and our company. She had been propagating 'on the run' from cutting material gathered from our gardens, and she was delighted to report that quite a few cuttings were still looking good.

We must thank Bill Owen for looking after the plants that Syd gave us when he left the ridge at Beaufort for a suburban block at Elizabeth. Many thanks to Bill also for the interesting red solution that accompanied the plants. Thank you to Syd and Syl for your generosity. We shared all the plants around at one of the meetings. Mine are thriving.

Quite a few members have indicated that they find the newsletters interesting. It is very pleasing to hear this but I must hasten to remind them that the NL's have very little to do with my efforts. They are interesting precisely because so many members contribute their experiences, and have joined this Study Group for such diverse reasons. We are also extremely lucky that we have so many members with eagle eyes whose powers of observation cause them to note, wonder and propound theories. The role of leader is made so much easier for me when I know I can rely on such input .

You may have noticed that the Leader's letters are sometimes not signed — please just put it down to haste and inattention. Some errors also creep in despite proof reading by editor and sub-editor (Lee); for instance, you will have been intrigued to know where *'Schoenia rosea'* sprang from in NL48, p. 25. Sorry, it should have been *Lawrencella rosea.*

This will be an exciting year for us. Our fifth child, John, is marrying in March, and in August another of the children is expecting twins — making nos. 9 and 10 grandchildren. A cricket team is forecast. Best wishes to us all!

Sincerely,

NEW MEMBER

A warm welcome to the following new member:

SEED DONORS

Judy Barker, Dot Brown, Pat Fitzgerald, Jan and Alan Hall, June Rogers, Esma Salkin, Maureen Schaumann, Serendip Sanctuary, Pat Shaw, Julie Strudwick, Betty Taylor, Marcel Terry, Gloria Thomlinson, Bruce and Thelma Wallace. Many thanks to all of you. We are extremely grateful for your efforts. This seed is continually furthering our knowledge, not merely making our gardens gorgeous.

REQUEST FOR SEED

Could anyone supply us with seed of *Erodiophyllum elderi, please?*

SEED BANK

A full seed list is published in each March newsletter. Please keep this list for reference; only additions and deletions will be recorded in other 1997 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 members require both types of seed a letter to either Esma or Judy will suffice.

Seed is for sale to non-members at 80c per packet. 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, especially species of *Brachyscome* or *Bracteantha*. **One parent only is guaranteed**.

Seed of some species remains viable for longer periods if stored at low temperatures. Much of the seed listed below has been kept in the refrigerator. The curators welcome feedback on your germination results since the task of testing the germination of so many species (and trialling species for the Everlastings Project) is almost impossible. Some everlastings marked with an asterisk may be needed for the Project, in which case the seed will be held by the appropriate co-ordinator.

GARDEN or COMMERCIAL SEED

Ammobium alatum, alatum 'Bikini'. *Anemocarpa podolepidium.* *Angianthus tomentosus.* *Asteridea athrixioides.*
Bellida graminea (11/97).
Brachyscome angustifolia complex (Barrington Tops, Namoi, Nandewar), *ascendens, basaltica* var. *gracilis, ciliaris* (Enngonia, SA), *ciliocarpa, chrysoglossa,* aff. *cuneifolia,* aff. *curvicarpa, dentata, dissectifolia, diversifolia* var. *diversifolia, exilis, formosa,* aff. *formosa, goniocarpa, gracilis,* aff. *gracilis, graminea, halophila, iberidifolia, latisquamea, linearifoba, melanocarpa, microcarpa, muelleri, multifida,* aff. *multifida* (Hat Head), *nodosa, nova-anglica, parvula, petrophila, ptychocarpa, readeri, rigidula, riparia, scapigera, segmentosa, sieberi* var. *gunnii, smithwhitei, spathulata* var. *spathulata, stuartii* complex, *tadgellii* (orig. Falls Ck), *tenuiscapa* var. *pubescens, trachycarpa, Brachyscome* sp. (Darling Downs).
*Bracteantha bracteata** — (Ebor, Pambula, dwarf mixed form, mixed garden form, orange, yellow, white forms, tall form [Tenterfield] *viscosa**.
Calocephalus citreus, lacteus, sonderi. *Calotis cuneifolia, scabiosifolia.* *Cephalipterum drummondii**.
Chrysocephalum apiculatum (ex Murray-Sunset NP), *semicalvum**, *semipapposum** (alpine form, Anglesea, Frankston, Lara, Licola).
Craspedia variabilis. *Erymophyllum tenellum.*
Helichrysum adenophorum var. *adenophorum* and var. *waddelliae, elatum, scorpioides.*
*Hyalosperma cotula**, *praecox**, *simplex**.
Ixiolaena brevicompta, leptolepis. *Lagenifera huegelii.*
Leptorhynchos squamatus, tenuifolius. *Leucochrysum albicans* ssp. albicans var. *albicans* ((orig. Longwood)*.
Leucophyta brownii (Cape Le Grande).
Minuria integerrima, leptophylla. *Myriocephalus guerinae.*
Olearia frostii, lirata. *Ozothamnus hookeri, obcordatus, secundiflorus, thyrsoideus.*
Podolepis auriculata, canescens, gracilis, jaceoides, lessonii, neglecta, nutans, rugata.
Podotheca gnaphaloides. *Polycalymma stuartii.* *Pterocaulon glandulosum.*
Pycnosorus chrysanthes, globosus, thompsonianus.
*Rhodanthe anthemoides** (unbranched form, Liverpool Range, Whitlands),*anthemoides* *(branching, red-bud), *charsleyae**, *chlorocephala* ssp. *rosea**, ssp. *rosea* (Balladonia form), ssp. *rosea* x ssp. *rosea* (Balladonia form), ssp. *splendida**, *diffusa* ssp. *diffusa** and *leucactina**, *humboldtiana**, *manglesii* and *manglesii* (white form)*, *polygalifolia**, *polyphylla**, *propinqua**, *pygmaea**, *spicata**, *stricta**,
*Schoenia cassiniana**, *filifolia* subsp. *filifolia* (038)*, subsp. *subulifolia**.
Senecio pinnatifolius (syn. *Senecio lautus*)
*Waitzia suaveolens**
Vittadinia muelleri, sp. (white)

PROVENANCE SEED

Seed is stored in sealed foil packets at 4°C. Freshly collected seed is thoroughly dried and treated for insect infestation. Seed storage procedures are constantly under review.

Brachyscome species:

aculeata — **NSW**; Snowy Mountains, **ACT**; Captains Flat, *basaltica* var. *gracilis* — **NSW**; Menindee Lakes 9/94, Narrabri, **Vic**; Kerang 1/91, Ulupna 9/94, *bellidioides* (?) — **WA**; Kings Park 10/94, *breviscapis* — **SA**; 9/94,

cardiocarpa — **Vic**; near Buchan 5/93, *cheilocarpa* — **WA**; various sites 1991, 1992,
ciliaris — **Qld**; Quilpie 7/96, **NSW**; Bundarra, Enngonia (perennial) 8/93, Gunnedah 1992, Tibooburra 8/96, Wilcannia 8/96, SA; Cowell 9/90, Iron Knob 7/92, Marree 9/90, Murray Bridge, Port Augusta 9/90, Simpson Desert, Flinders Range 8/96, **WA**; Cowellup and other sites 10/91, Eyre Hwy 9/97, (*dimorphocarpa*) — **WA**; 9/92,
ciliocarpa — **WA**; various sites 1991, 1992, *cuneifolia* — **SA**; Tintinara 9/93, aff. *cuneifolia* — **Vic**; Natimuk 2/91,
curvicarpa — **NSW**; Bourke, aff. *curvicarpa* — **Qld**; 3/96, 7/96,
decipiens — **Vic**; Falls Creek 1/97, *dentata* — **Qld**; Cunnamulla 8/89, central Qld 3/91, 3/96, **NSW**; Armidale 1/91, Bundarra 10/92, Dalgety 2/92, Enngonia 8/89, Milparinka 8/96, Mootwingie 1989, 1990, Moree 9/93, Rankins Springs 1991–92, Sofala 10/93, West Wyalong 10/92, **Vic**; Little Desert 10/91, **SA**; Blinman 8/96,
dissectifolia — **NSW**; Mt Kaputar 10/93, *exilis* — **SA**; Cummins 10/91, Iron Knob 10/91, PS 3908 Yorke Peninsula,
aff. *formosa* — **NSW**; Entity 2 Neville 11/93, Orange 11/96, *goniocarpa* — **SA**; Keith 10/91, Tooligie 10/91,
aff. *gracilis* — **Vic**; Kings Billabong 3/91, *halophila* — **WA**; Yarra Yarra Lakes 9/91, *iberidifolia* — **WA**; various sites 9/91,
latisquamea — **WA**; 9/92, *leptocarpa* — **NSW**; Lake Cargelligo 9/91,
linearioba — **Qld**; 8/89, **NSW**; 1989, 1991, 1992, **Vic**; Kiata, **SA**; Eyre Peninsula 10/91, Gawler Range 1991, Yorke Peninsula 10/94, **WA**; 9/91, 9/97,
melanocarpa — **Qld**; 1989, **NSW**; Bourke 8/93, *melanocarpa* x *dentata* — **NSW**; Moree 9/93, *microcarpa* — **NSW**; Hat Head 9/92,
multifida var. *multifida* — **NSW**; Lake Cargelligo 9/91, Mt Kaputar 9/92, *nivalis* — **Vic**; Falls Creek 1/97,
nodosa — **Qld**; Quilpie 8/95, **NSW**; Narrabri 10/93, *oncocarpa* — **WA**; 9/91, 8/92, *parvula* — **Vic**; Mornington, 1/94, Otways 11/95,
ptychocarpa — **NSW**; Gulgong 10/93, Mt Canobolas 12/94, **Vic**; PS 4151, *pusilla* — **WA**; 9/91, 10/91,
radicans — **NSW**; Snowy Mts 3/91, 3 sites 2/97, **Vic**; Nunniong Plateau 3/92,
rigidula — **NSW**; Kiandra 3/91, **Vic**; Snowy River 3/92, Bundarra River 1/97,
scapigera — **NSW**; Snowy Mountains 3/91, 3/93, **Vic**; Dargo H. P. 1/96, Nunniong Plateau 2/90, *sieberi* var. *gunnii* — **Tas**; 1994,
smithwhitei — **NSW**; 8/93,
spathulata subsp. *spathulata* — **NSW**; Snowy Mountains 3/91, 2/97, **Vic**; Tiger Hill 10/93, Falls Creek 1/94, Dargo H. P. 3/96,
stuartii complex — **NSW**; Emmaville, Tingha 10/93, *tadgellii* — **NSW**; Snowy Mts 2/97, **Vic**; Dargo H.P. 1/96, Falls Creek 1/97,
tetrapterocarpa — **Qld**; Winton 8/89, *trachycarpa* — **Qld**; 9/93, *whitei* — **NSW**; Bourke 8/93, Enngonia 3/93.

Provenance species other than *Brachyscome*:

Ammobium craspedioides — per ANBG. *Anemocarpa podolepidium* — **SA**; Marree 8/96. *Angianthus tomentosus* (Murrum Stn.11/96).
*Bracteantha bracteata** — **Qld**; (v. lge basal lves from far west Qld 1997), **NSW**; Gloucester–Walcha Road 9/97, **Vic**; Dargo 3/96.
Calocephalus citreus — **ACT**; 1994. *Calotis cuneifolia* — **NSW**; Gilgandra 8/97. *Campactra barbata* — **Qld**; 5/96.
Cassinia adunca — **NSW**; 3/95, 5/97, *compacta* — **NSW**; 5/97, *quinquefaria* — **NSW**; 5/97, *subtropica* — **Qld**,
Cassinia sp. — **SA**; Moseley Knobs 11/95, *Cassinia* sp. — **Vic**; Bundarra River 1/97, *Celmisia* sp. — **Vic**; Dargo H. P. 3/96.
Craspedia paludicola — **Vic**; 11/93, *variabilis* — **NSW**; 9/90, *Craspedia* sp. — **NSW**; alpine, **SA**; Yorke Peninsula 9/94.
*Chrysocephalum apiculatum** — **SA**; Cleve District 96, Kimba District 96, *semipapposum** — **SA**; Kimba District 96.
Erigeron sp. — **Vic**; Falls Creek 1/96. *Erymophyllum glossanthus* — WA; Mt Magnet, 11/97.
Helichrysum elatum — **Qld**; Childers 7/96, **NSW**; Barrington Tops, Pambula, Tenterfield, Tura Beach 1995,
leucopsideum — **SA**; Kimba District 12/96, Murray Bridge 91/92, *rutidolepis* — **NSW**; Bombala 4/96, Dunkeld 12/95,
scorpioides — **Tas**; 2/95. *Helipterum craspedioides* — **WA**; 10/96.
Ixiolaena brevicompta — **Qld**; 3/96, *supina* — **SA**; 3/93. *Ixiolaena* sp. (*Leptorhynchos panaetioides*) — **NSW**; 8/91.
*Lawrencella davenportii** — **NT** 96. *Leucophyta brownii* — **Vic**; Sorrento 2/96.
Minuria cunninghamii — **WA**; Caiguna 8/97. *Myriocephalus guerinae* — **WA**; 10/96, *helichrysoides* — 1988, *rudallii* — 1989.
Olearia decurrens — **SA**; Flinders Range 8/96, *exiguifolia* — **SA**; 9/97, *imbricata* — **WA**; Hopetoun 9/97,
lanuginosa — **Vic**; Ouyen 5/96, **SA**; Monarto, *megalophylla* — **Vic**; **Dargo** 3/96, *muelleri* — **SA**; Lake Gilles 10/95.
phlogopappa var. *subrepanda* — **Vic**; Mt Cope 1/97, *pimelioides* — **Qld**; Hungerford, **NSW**; Menindee 10/94,
stuartii — **NT**; 7/96. *Othonna gregorii* — **NT**; 1996.
Ozothamnus diotophyllus — **Qld**, *ferrugineus* — **Vic**; Anglesea 8/97, *hookeri* — **Vic**; Mt St Gwinear 3/96,
obcordatus ssp. *major*, *retusus* — **SA**; Wudinna, *rodwayi* var. *oreophyllus*, *secundiflorus* — **NSW**; 2/96,
thyrsoideus — **NSW**; 2/96, *turbinatus* — **Vic**; 10/95, 8/97.
Picris evae — **Qld**. *Podolepis jaceoides* — **NSW**; Barry / Neville 4/94. **Vic**; Trawalla 1995, *kendallii* — **WA**; 10/96.
lessonii — **WA**; 1991, *rugata* — **SA**; Murray Bridge 1992, *Podolepis* sp. — **Qld**; Capella 1996).
Podotheca gnaphaloides — **WA**; 9/91, *wilsonii* — **WA**; PS 4437 10/95.
Polycalymma stuartii — **NT**; Alice Springs 9/96. *Pterocaulon sphacelatum* — **NT**; 1996.
Pycnosorus ? chrysanthes — **NSW**; Narrabri 10/92, *globosus* — **NSW**, *pleiocephalus* — **SA**; Gawler Range 10/95,
thompsonianus — **NSW**.
*Rhodanthe anthemoides** — **NSW**; Snowy Mountains 2/97, *citrina* * — WA; Murrum Stn. 10/96,
*collina** — **WA**; Yalgoo 10/97, *corymbiflora** — **Vic**; Wail East, **NSW**; Jerilderie/Conargo 1996. **SA**; Kimba District 1996.
*floribunda** — **Qld**; Charleville 1996, *haigii** — **SA** ; 9/97, *laevis** — **NSW**; 10/97, *microglossa** — **SA**; 10/97,
*polygalifolia** — **SA**; 10/97, *polyphylla** — **Qld**; central Qld 1996, *pygmaea** — **SA**; 10/97, *stuartiana** — **SA**; 10/97,
*tietkensii** — **NT**; Alice Springs Desert Park 8/96, Ularu Resort 11/96.
Rutidosis helichrysoides — **NT**; 8/96. **SA**; 8/96, *leptorrhynchoides* — **Vic**; 1996.
*Schoenia ayersii**, *Schoenia cassiniana** — **NT**; 1996. *Stemmacantha australis* — **Qld**.
Vittadinia decora — 3/96, **Vittadinia** sp. — **NSW**; Adaminaby, Griffith.
Waitzia acuminata * — **SA**; Kimba District 1996. *Wedelia spilanthes* — 3/96.

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SUBSCRIPTIONS

Subscriptions for the coming financial year will be $10.00 per year for members within Australia and $20.00 per year for overseas members. Cheques should be made payable to the Australian Daisy Study Group, and forwarded to either Judy Barker or our treasurer, Bev Courtney. (Addresses on p. 1.) **FEES WILL BE DUE ON 30th JUNE 1998**. This is the first reminder; the second will appear in the July newsletter. If any member wishes to resign please advise Bev or Judy.

NEWSLETTER DEADLINE FOR NL 51 is JUNE 1st 1998.