



# GREVILLEA STUDY GROUP

REF NO. ISSN 0725-8755

MAY 1988

## NEWSLETTER NUMBER 19

Welcome to the first Grevillea Study Group newsletter for 1988. Yes, it's rather late and a bit slim, but there are good reasons for this. Our leader, Peter Olde and co-author Neil Marriott are flat out working on the eagerly awaited Grevillea Book, and your editor has had lots of other pressures demanding his time.

Anyway, that's the apologies over with - what's in this issue? There is a most important article by Ray Brown on the progress and plans for the Illawarra Grevillea Park. This is a most exciting development for Grevilleas in particular and all Australian Plants in general - you are urged to support the project in whatever way you can; money is vital at this stage so if you are contemplating becoming a member - do it now!

"News in Brief" gives short notes on five new Grevilleas discovered recently. This is followed by details of forthcoming activities - please make a note of the dates. We also have items about members' experiences with Grevillea growing in Albany W.A. and Springsure, Queensland (can't get much further apart!). New Caledonia is very much in the news these days, so we also have an article on their Grevilleas!

It is planned to have a future issue dealing with pests and diseases. We would like people to send a note of their experiences and knowledge of pests and diseases that affect their grevilleas both in the wild and under garden conditions.

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### NEWS IN BRIEF

#### Five "new" Grevilleas"

G. scabra (thought extinct since the 40's) has been rediscovered by Steve Hopper (botanist) in five different locations north of Perth.

G. sp. nova 1 - found by Fred Johnson of the Parramatta/Hills Group near the Gascoyne River area.

G. sp. nova 2 - found by Kevin Neneally, a botanist from Perth, has been discovered in the Kimberly area, and has the unusual feature of having three petals instead of the usual four.

G. "Black Magic" - came into the nursery trade via a commercial flower picker in W.A. - he won't tell where he got it, but it is now being propagated.

G. acanthifolia sub spp. nova has been found in the Malbough Plateau area.

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SUBSCRIPTIONS ARE NOW DUE and the cost is \$5 and should be sent to the Treasurer, Christine Guthrie, 32 Blanche Street, OATLEY 2223. Please make cheques payable to the Grevillea Study Group. If a cross appears in the box you are unfinancial.

1987

1988

ACTIVITIES

SUNDAY May 29th an excursion to seek out populations of G. johnsonii. Meet outside the Rylstone Post Office at 10 a.m. Members from Sydney will have to leave home about 6.30 a.m. to arrive on time.

SUNDAY July 31st Royal Botanic Gardens at 12.30 p.m. to look at Grevilleas from New Caledonia (see article this issue) and to look at other grafted rare species.

SATURDAY August 27th A field trip to The Braidwood area, which is home to several Grevilleas plus a host of other plants of interest. Meet at the Tourist Centre at Bombaderry at 9.30 a.m., right on the highway, north of Nowra.

First week in November - a field trip to the Nalbough Plateau lead by Neil Marriott - details later.

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ACKNOWLEDGEMENTS

Thanks to Don Burke for the donation of \$100 for Grevillea research - this has been granted to Steven Smart (Sawell, Vic.) to investigate grafting onto G. robusta.

Thanks to Christine Guthrie, Martha and Tony Henderson and Mark Hickman for valuable assistance with the Grevillea collection at Pay Brown's place - and to Phil Keane for having turned up (he's going to work next time!)

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THE GREVILLEA PARK

Since the announcement of the formation of the Illawarra Grevillea Park Inc. in the March 1987 Grevillea Study Group newsletter, the project is about to become a reality. In about four weeks time a ten year lease will be signed with Wollongong City Council.

It has taken us the last twelve months to wade through the red tape of a development application with City Council.

The setting up of a Botanic Garden such as this has meant we have had to have a little patience, play politics and not give up when someone says "No" or tell us to "go away".

The site for the gardens is directly behind the Bulli Showground. The oblong shaped land is about 10 hectares and is approximately 550 metres long and 180 metres wide, running East West.

The vegetation is approximately 100 year old regeneration. There is a ridge through the middle with a stand of Casuarina glauca. There is also a pocket of regenerating rainforest with a running creek at the back. It's hard to believe that a site with as much potential is still available so close to Wollongong.

Last year a management plan was put together by members and printed with the help of Wollongong City Council and the Illawarra County Council.

The document, called "The Development Proposal for the Illawarra Grevillea Park" is sixty pages and incorporates the following:

- \* The need for a Park
- \* Background information
- \* Objectives
- \* Location
- \* Climate
- \* Soils
- \* Flora and fauna
- \* Access

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- \* Anticipated visitors and tourist potential
- \* Development plans
- \* Estimated costs
- \* Employment potential
- \* Letters of support from Government and semi-government bodies.

The submission has played a major role in developing interest and enthusiasm for the project.

Many corporations have been contacted about donating either money or materials for specific projects. The responses have been promising although there have been many who have told us to go away.

Besides having the world's largest collection of Grevillea growing in this Park we hope to build a Visitor's Centre aimed at introducing children to Australian plants, a Herbarium to house our pressed specimens and a disabled walk incorporating an elevated walkway through the trees.

The N.S.W. State Government has so far given \$8,640 through an area assistance grant for the cost of signs, brochures and plant labelling. Application for funding under the Steel City Regional Programme was not successful but we have applied again for the Federal funding.

Donation of materials from I.C.I., Sierra Chemicals and May and Baker, will save time as work proceeds. The main front gates are being made by Kembla Coal and Coke and will be ready shortly. The front fence is being donated by the Department of Main Roads and two other fences are being negotiated with B.H.P. and Bulli Brick and Tile.

The Prostanthera Study Group will also be housing their collection in the Park and approaches to other groups are now underway.

Soil tests have been done and are favourable for growing Grevilleas.

The Grevillea Park is an incorporated body, and Public Liability Insurance was donated by G.I.O. Voluntary Workers insurance will also be arranged.

A geotechnical report on the Visitors Centre site location was also favourable.

Support from the local community and the media has been very encouraging. People who enjoy native plants, many of whom have never belonged to S.G.A.P. have offered help as soon as work proceeds.

As the Park grows, the potential for new S.G.A.P. members should be realised.

This park will be the only one of its kind run by a voluntary group which will have collections of plants of such important scientific value to all Australians. When there are enough plantings and development completed for the public to come and see, we will charge admission and this will cover running costs. Eventually we hope to employ staff.

Until that time occurs we seek urgent financial support either by becoming a member or by a direct donation. Donations of over \$2 are tax deductible (Please enquire). Membership costs are \$25 per annum for adults \$15 per half-year. \$10 for students and pensioners.

Membership fees and further information should be directed to:

The Illawarra Grevillea Park Society Inc.  
 20 Gwyther Avenue  
 EULLI 2516

042.849216

RAY BROWN  
 President

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GREVILLEA IN NEW CALEDONIA

Alistair Watt

We don't have them all to ourselves! Four species grow in the Indonesian Islands and three are native to New Caledonia - and these have eight or nine subspecies or forms.

In contrast to the usual imagined flora of a tropical island, the plant distribution includes what we call "heath" (maquis to the French). This illustrates the controlling nature of an impoverished soil on plant morphology and associations, notwithstanding the high (compared to Oz) rainfall. Obviously the plant associations are different to here, but they typically have a shrub height of 2-3 m with larger trees to 12 m.

All three grevillea species are associated with this shrubby heath flora and have large, colourful flowers. They are as follows:

- G. meisneri var meisneri
- var rhodesmia

Shrub or small tree 0.6 to 7.0 high. Simple entire leaves, clumped towards ends of the branches. Flowers very brightly coloured - salmon/orange, carmine to orange.

- G. exul v. ssp. exul
- ssp. rubiginosa
- ssp. nudiflora
- form bicolor

Shrub or tree 1 to 10 m, but typically 2-4 m high. Ssp. exul is widespread. Leaf form is very variable, from thin linear to obovate. Flowers vary from white to red.

- G. gillorayi var. gillorayi
- var. glabiflora

Shrub or tree to 10 m. Leaves typically obovate to elliptic (usually broader than those of G. G. exul). Flowers are rose-red to bright crimson.

Plant material, seeds and cuttings of all species were collected in 1987 and living plants are now in Australia, but in very restricted numbers at present.

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GREVILLEA IN SPRINGSURE

Beverly O'Keefe

The main problem seems to be my soil - I have lovely loamy scrub soil and Grevillea seem to be most ungrateful animals, most of them. The moment I put them in my garden they begin to feel faint. They turn pale, they go yellow on the edges, their tips turn brown, and eventually the plant dies. I have been told the trouble is phosphorus toxicity. My soil is on the alkaline side though every reading seems to be different. Also I have lots of nasty salts in the bore water I have to use.

The only plants I managed to grow without treatment have been:

G. biternata grew for several years, and flowered, then suddenly died. Was perfectly healthy in the meanwhile.

G. venusta grew for about 5 years, and flowered then succumbed to borers. I probably could have controlled them, but don't like spraying. So I cut it off at the ground to see if it would shoot. It decided that this was a bit rough and didn't (shoot, that is,)

G. lavandulacea I don't know which form. It has been growing against the eastern side of the house for about 5 years and is healthy and flowers each year. Another form of G. lavandulacea followed the pattern of my failures.

G. dryandra This I have planted in a new bed topped up with about 12 inches of very sandy soil from a sandstone area. It showed some initial dying of the tips of the leaves, but hopefully has outgrown it and after 12 months seems to be healthy.

G. 'Pink Surprise' I realise this is a hybrid, and as such, an infidel. However it has been most co-operative. That is if you can call growing to about 12 ft. by 15 ft. when the book says 3m by 2m, co operative. For several years it was a mass of flowers, however for the past few years it has seldom flowered. Perhaps this is because we have had a number of drought years and I haven't given it any artificial water. It also recently was invaded by borers, and I have cut it back by about one third to cut out the borers.

G. stenomera grew for several years and was healthy and flowered well, then suddenly died.

G. pinnatifida has been growing for 6 years and is now about 3m high. It is very yellow, and from time to time I give it urea and iron, dug in around the tree and watered. Doesn't seem to make much difference. The other day I dug in some GU49 iron, and maybe it is looking a little greener (or maybe it is wishful thinking).

G. pteridifolia Survived for 5 years and grew about 3 ft. but was extremely unhappy and eventually I pulled it out. I have planted another in a sandy bed, and so far it is green - has been there 5 months so I have my fingers crossed. Unfortunately, it gets a bit of bore water when I water the lawn.

G. longistyla I dug in a teaspoon of GU49 iron into the bottom of the hole, planted with terasorb and gave a good watering of rain water to settle the plant, then gave it my blessing and consigned it to the care of the Lord. I have my fingers crossed. It has only been in a fortnight, so is too soon to tell whether the Lord will do his bit.

#### Grevillea from my mortuary file

- G. asplenifolia - died within 6 months.
- G. 'Austraflora Canterbury Gold' - died within 4 months
- G. banksii forsteri - died painfully over 15 months
- G. banksii prostrate - died within 2 months
- G. bauerii broad leaf form - died within 5 months
- G. bauerii fine leaf form - died within 5 months.
- G. 'Boongala Spinebill' - lived for 3 years and may have survived if I had had a bit more experience at the time. Eventually removed.
- G. 'Canberra Gem' - grew happily for 3 years and flowered, then suddenly died.
- G. sp. 'Cardwell' - made no attempt to grow.
- G. sp. 'Cochin Hills' - made no attempt to grow.
- G. glauca - tried this 3 times, all unsuccessfully.
- G. hookerana - tried this twice, both plants died within 6 months.
- G. 'Ivanhoe' - died within 6 months.
- G. juncifolia - died within 6 months.
- G. juniperina 'red' - died within 9 months.
- G. juniperina 'yellow' - died within 9 months.
- G. lanigera - died within 6 months.
- G. linearis 'Alba' - made no attempt.
- G. 'Misty Pink' - died within 6 months.
- G. nudiflora - made no attempt/
- G. obtusifolia - grew for two years, and may have become overgrown by other shrubs.
- G. oleoides 'Dimorpha' - died within 6 months.
- G. 'Pink Parfait' - made no attempt
- G. 'Poorinda Rondeau' - died within 5 months
- G. 'Poorinda Royal Mantle' - 2 plants both died within 6 months.
- G. pteridifolia prostrate - died immediately.
- G. 'Robyn Gordon' - made a brave attempt, but after 3 years of suffering I pulled it out.
- G. 'Sandra Gordon' - tried twice, both died within 6 months. This grows beautifully in the district, so must be just me it doesn't like.
- G. 'Shirley Howie' - struggled for 12 months.

- G. thelemanniana - grew fairly well for 3 1/2 years, then slowly died.
- G. tridentifera - died within 6 months.
- G. wickhamii - tried 3 times, all died.

A note of interest re: G. wickhamii. I helped place a plant of G. wickhamii in a garden outside one of the churches in Springsure (not my church) about 5 years ago. It grew beautifully and reached about 10 ft and flowered prolifically. In a bad storm - just before Christmas two years ago it was blown over and the trunk was broken off below ground level leaving a jagged root. The tree had sentimental value for my friend, and as she could not attend it's sickbed asked me to do something. I didn't know what to do, but remembered that my mother had told me "when in doubt, don't". So on this advice I suggested to the man with the chainsaw that he just leave it lie for the time being and see what would happen. This was done, and shortly after it began shooting from the roots. Now this plant is again a healthy 10 feet high bush, covered with flowers and a delight to all the town.

I am hoping in the near future to build a new garden bed with soil from a different area in an attempt to grow some of the beautiful Grevillea which grow in my friends' gardens. If I have any success I will let you know.

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TREASURER'S REPORT

INCOME

EXPENDITURE

Subscriptions	\$456.87	Postage	97.00
		Newsletter Expenses	60.00
		Bulli Collection	<u>185.00</u>
			\$342.09
BALANCE ON HAND	\$968.74		

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GREVILLEAS IN ALBANY

Eileen J. Gosford

(This article may be a little bit of cold comfort for us Easterners who envy Western Grevillea growers) Editor.

Eileen says that she has great difficulty growing Grevilleas. She has a 30 year old one acre garden, deep coastal acid sand, mild climate, rarely frost, little extreme heat and around 35 inch rainfall (approx. 900 mm). She had a G. robusta about 9 m. high, 12 years old, and then one day of 43° heat (when she was away from her place) was followed two days later by leaf drop. A good deep soaking failed to save this large established tree.

Several G. Robyn Gordons-followed this, none reaching more than about the six leaf stage. G. bipinnatifida was then tried against a north facing shed - it is now 1.5 m x 1.5 m, ten years old, and flowers continuously. At the same time she planted G. macrostylus and G. rosmarinifolia both in exposed positions. The G. rosmarinifolia grew for about five years, hardly every flowered, and then died. The G. macrostylus is now about 10 years. old, 1.5 m x 3.0 m and flowered continuously.

Her garden is a conventional type surrounding the house and she successfully grows Eucalypts, Banksias, Kunzeas, Allocasuarinas, Acacias, Callistemon, Chamalaucium, Melaleucas and many others. She only waters for the first year, but mulches well. As she cannot seem to grow Grevilleas well she uses lots of Anigozanthus hybrids as bird attractors. The latests Grevillea tried is a G. banksii, 3 years old, 1m high and flowering well - so best of luck with it!

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AND NOW WE CONCLUDE THAT EPIC "GO WEST YOUNG MAN" BY PETER OLDE . . .

Just West of Lake King we came upon G. witterweri. It was growing in a small population of plants over 1 km in white gritty sand. The flowers closely resemble those of G. tetragonoloba and I was initially confused as to their correct identification. They are an unusual maroon colour rather than bright red and their leaves are twice divided. In addition the flowers are smaller though this is not immediately apparent if you have nothing to compare them with. There is nonetheless a close relationship including the way the one-sided inflorescences become partially cylindrical with age.

East of Lake King, we struck the red form of G. pilosa in full flower with its woolly-red inflorescences weeping over and touching the ground. Although the flowers were covered in ants, it is doubtful if these were the actual pollinators. More experienced commentators indicate small mammals may have something to do with pollination of this type of species. Who knows? Still these were most beautiful plants as they were choc-a-block with flowers. Later on we were to find some unusual forms of this species. Shortly, after passing populations of G. pectinata, G. acuaria, G. oncogyne and G. oligantha, we came upon another newly-described species, G. aneura.

G. aneura occurred for over 60 kms as we followed the road from Lake King to Frank Hann National Park, where we spent the night in the ubiquitous gravel pit burning mallee roots. This Grevillea has red flowers displayed in terminal clusters all over the plant and seems to be fairly uniform in its features. During one photo session I was surprised by a "bobtail skink" which threatened us with its wide-open mouth and ominous blue tongue. It was seeking refuge under a plant and you can imagine my alarm when I moved the flower into better light only to be confronted with an alarmed lizard. I nearly had babies. Bobtails are beautiful slow-moving lizards no doubt related to the Eastern Blue Tongue. Usually you notice them squashed all over the road as they fall victim to speeding motorists while sunbaking on the centre line.

#### DIGGER ROCKS:

The road east of Varley, just north of Lake King, led over rough ground to Digger Rocks, only known location of G. lullfitzii. As this species had only been collected once to date, I was particularly keen to collect and photograph it. As we drove through the Rabbit Proof Fence, the track became decidedly more undulating and lower grade. In fact it wasn't even marked on our maps as even suitable for 4 wheel drive. We pressed on nonetheless. The family tend to get a bit edgy when I do things like that, especially Marg and especially remembering Day One. For once, my instincts were right. The road was negotiable.

We stopped on a rich lateritic crest. Jumping out for a bit of a look I discovered G. insignis but this time the leaves were different, somewhat shorter and less glaucous than specimens around Tarin Rock. The brilliant waxy red and cream flowers were there though and set the plants off to a tee. As it transpired, we were only a few metres from Digger Rocks and when the road intersected with the main north road, I jumped out to look for the "Rocks". In so doing I landed on G. lullfitzii. If only they were all that easy to find. Surprisingly this species was common in the area, suckering prolifically around the road edges and under the beautiful shiny brown-barked Eucalypts. By now it was no surprise to learn that this was the only hill on which I found this glaucous plant with its small white terminal heads of flower. As night was falling we camped in the middle of the road and took bets on whether we would have to move before departure time next day. The area was so isolated that I won the bet.

We headed north towards Mt. Holland but not without some regrets. The laterite imparts a special beauty to the flora that grow in it, rendering it with a blue-grey glaucousness. There were many new species that I had never seen before in this spot and I would have loved to spend more time there or perhaps even go on to Hatters Hill. Time was against us. One of my favourite plants grew here and it wasn't a Grevillea. It was Persoonia coriacea with its strange twisted cork-screw leaves. It was root-suckering along the roadside scrapes in profusion.

We spent a whole afternoon seeking without success G. lissopleura which Ken Newbey later assured me he had collected near Mt. Holland. You begin to doubt everything when you look so intensely without success. By this stage I was able to spot a Grevillea at 50 metres driving along at 60 k.p.h. without any trouble. But no matter what, I could not find this one. The search was redeemed, however, when we found quite a few plants of G. pilosa ssp. dissecta. This subspecies had been poorly collected till then and has deeply-divided leaves and less hairy flowers. They have a brilliant rose pink colour and wept down as in ssp. pilosa to the ground. Plants were low, mounding, open dome-shaped less than 0.5 metres high, growing beside the road in yellow sand.

The road from Digger Rocks north contained the following species in various forms G. acacioides, G. cagiana simple leaf form, G. integrifolia ssp. biformis, ssp. shuttleworthiana, ssp. incrassata, G. hookeriana (low suckering plants in sandheath), G. heugelii, G. paradoxa, G. lullfitzii, G. pilosa ssp. pilosa northern form, G. pilosa ssp. dissecta, G. eriostachya ssp. excelsior, G. oncogyne, G. oligantha, G. teretifolia, G. eryngioides, G. acuaria G. didymobotrya ssp. didymobotrya, G. paniculata and G. insignis.

#### JITARNING.

Not terribly far from Hyden is the small town of Jitarning. Just north of there grows the most beautiful form of G. cagiana in a small roadside verge. By contrast with the simple green leaf forms of this species east of Hyden, this form had tomentose grey divided leaves with hoary white stems and rich orange-red flowers. They were root-suckering plants but much more robust, achieving heights over 3-4 metres and spreading the same distance. At this same site I discovered other rare plants including a rare Lambertia.

In swampy low ground near the main town site grew G. umbellulata. This low growing shrub with small woolly grey flowers has been known in cultivation for many years but I was surprised at its natural habitat in which it grew in abundance. Nearby another fine-divided-leaf form of G. hookeriana was found alongside the common G. paniculata.

From here we headed back to Perth in preparation for the trip around the coast and home.

#### PERTH TO ALBANY

Heading south from Perth we passed many areas mainly on heavy gravelly loam containing specimens of G. bipinnatifida. This species varies almost everywhere it is found from green leaf to hairy grey to glaucous blue-grey. From the south reputedly near Harvey there is in cultivation a form with deeply divided leaves, growing into a prostrate plant. From the north we found forms with small rounded leaves about the size of a 20c piece. Around Gidgegannup, (love that word), the leaves are large, crinkly and hairy grey. Elsewhere, the blue-green form with pale orange flowers was common as was the lettuce green of one form near Perth with hairy red new growth and deep red flowers. This is a spectacular species with many horticultural forms worthy of selection and cultivation under cultivar names.

G. thelemanniana ssp. preissii south of Perth is an erect compact shrub prolific in flower and worthy of widespread cultivation. It was deep olive-green foliage and grows to about 1 metre in coastal limestone sandy soil. It corresponds to what we call in the east the superior form. I was left wondering at the wild source of the prostrate lettuce-green leaf form of this species in widespread cultivation in the east. The plants we saw growing beside the Albany Highway were growing in association with G. crithmifolia.

Another widespread species of Jarrah understorey in heavy gravelly loams is G. synapheae with its creamy catkins and variable leaves. In Sydney we love this plant in horticulture even though it doesn't grow terribly reliably for us. Perhaps we should try it in heavy well-drained loams with some overhead protection. We found this species commonly and in abundance from Mt. Lesueur well north of Perth to Collie in the south.



We spent a whole day in the Jarrah around Collie. This lovely area reminded us of the East with its forest sand rolling hills. In Collie itself we searched for and found the rare G. ripicola growing on the upper slopes of the Collie River. Although it has a very restricted distribution, this species dominated the area in which I found it. As well as the usual red style and orange perianth form known in cultivation I found here pure yellow-flowered forms as well.

Further north we located plants of G. drummondii ssp. centristigma. Although thought to be rare, I found it commonly in the Jarrah understorey from south of Perth to Busselton in the Whicher Range. It forms a small low shrub to less than 30 cms with terminal clusters of tomentose yellow flowers. One form noted on the Albany Highway near Jarrahdale was a robust shrub over 60 cm x 60 cms and was almost an intermediate with this subspecies and ssp. pimeleoides found closer to Perth.

G. quercifolia is another species of the Jarrah understorey which impressed with its erect heads of small purple inflorescences and holly leaves. Growing both north and south of Perth, I found it mainly down south. It forms a shrub to 0.5 metres x 1 metre and can literally be covered in purple.

Further inland around Brookton we spent several days looking for the multiple forms of G. leptobotrys. Almost every locality in which this beautiful pink-flowered species grows has a different form. We located one magnificent form in the Boyagin Rocks Reserve forming prostrate mats to 1 metre and erect robust divided blue-green leaves. Growing with Dryandra, Isopogon, Petrophile and other proteaceous species, this Grevillea along with G. hookeriana and G. monticola grows on heavily laterised ridges in fairly dry locations in the understorey. No matter where we searched for this species it was difficult to find, until you found it and then it was everywhere. Perhaps the fact that it had no flowers had something to do with this. No amount of searching in Tutanning Reserve where one of the most attractive forms is found revealed its presence. We can but try.

We could not find G. cirsiifolia either which is also reputed to grow in the Jarrah forest but it was the prostrate species above all others which proved the most difficult to locate. I am sure further searching would help locate this species although it is reputedly quite rare. It has delightfully vanilla-scented heads of yellow flowers.

Grevillea glabrata ssp. glabrata was fairly prominent species especially around the watercourses near Perth in the Darling Scarp. Ssp. ornithopoda was quite a different kettle of fish and we only found it in one location around the Serpentine Dam near Jarrahdale. There are only minor differences in the leaf form from the type species. Further south and more inland on drier gravelly loam we located a good population of ssp. dissecta in a disturbed roadside area. The leaves on this subspecies are even more deeply divided into lobes and it has pink and white flowers.

The sandy swampy ground around Busselton in where we sought out the most southerly form of G. paniculata eventually locating it in swampy ground in a disturbed roadside verge. This is a very rare form and needs to be carefully protected. Near Ruabon we located the most beautiful forms of G. manglesioides ssp. manglesioides. Some with short white toothbrush flowers were growing in wet swampy ground into robust shrubs over 2 m. tall. The other form with red flowers forms a low shrub in heath and looks decidedly different and distinctive. It is hard to believe that this plant is not a completely different species. At this location is one distinctive form of G. brachystylis forming prostrate to decumbent mats in low heath near the abandoned railway line.

In the Whicher Range, G. brachystylis grows into an erect open narrow shrub with beautiful intense woolly-red flowers and peeping blue style end. The Ruabon form has an orange style with a snub nose. The erect form is found in the forest understorey and often has huge lanceolate leaves. This form is very similar to the prostrate form growing along Scott River Road in swampy sandy soil. This form sets prolific amounts of viable seed and busily regenerating madly when we visited the area. Not that we witnessed any shenanigans, mind you. While most plants were prostrate and decumbent, one plant was over 1 metre tall and they all had the blue style of the Whicher Range form.

Scott River Road, east of Augusta, is a marvellous road with masses of spectacular wildflowers growing along the verges, Hibbertia stellaris, Adenanthos obovatus, Adenanthos detmoldii, Adenanthos barbigerus and many other spectacular species. In addition we found along this road the newly described G. manglesioides ssp. papillosa, with smaller flower heads and more deeply divided foliage.

From south of Perth to Albany and points east, grows the variable G. pulchella, usually in forested situations in gravelly soils. They are only small plants less than 30 cms with erect panicles of white flowers in small heads. Nonetheless they are very noticeable in the bushland forming dazzling white mounds in profusion wherever they grow. They seem to be a short-lived species regenerating readily from seed.

Around Albany there is a dearth of Grevilleas. G. fasciculata is quite common in moist swampy situations growing in profusion and flowering with its small bright orange terminal clusters it makes a pleasant show. G. occidentalis makes a bright show with its masses of grey woolly flowers in terminal heads smothering plants on the hillsides around town. We had to search long and hard however for the Albany form of G. diversifolia ssp. subtersericata. I located it eventually in a similar riverine habitat to ssp. diversifolia which grows commonly around Perth near Mundaring Weir and other spots. The main difference between these two subspecies is the hairs under the leaves on ssp. subtersericata. The many forms of G. trifida can be found here and extend West and North over many kilometres, varying in leaf form as they go.

Albany had a real treat for us, however, Together with Alex George, Bob Sainsbury and Elizabeth George, I went in search of the presumed extinct Isopogon uncinatus. The only known location was Willyung Hill which is now a quarry for cement works. Alex George had relocated this species some years earlier when searching out Robert Brown's early type localities as part of a project he was undertaking at the time. It has never been recollected since those days and the prospects were grim as we set off in search. After searching the area thoroughly for some time, we determined that the original find made by Alex was now a flattened car park. It was only by pure chance and in the tiniest remnant piece of scrub that we resignedly began a final search. You can hardly imagine the thrill when Alex called "Here it is". One solitary plant was all we could find in that small area and its future could not be good. How much it resembled superficially a Conostylis. Holding its yellow flowers in tufts close to the ground, the long narrow linear leaves stand erect above to a height of only 30 cms and have a distinctive hooked mucro. The new growth is red.

We dutifully informed CALM of its location and its extreme peril and left in the hope that some form of preservation could be installed over it.

#### THE STIRLING RANGE:

Most of the species described from around Albany occur in the Stirlings which are curiously bereft of endemic Grevilleas, for they are an extremely ancient uplift and the area contains perhaps the greatest variety of endemic species in the southwest. For three days we got lost with members of the W.A. Wildflower Society in a delightful long weekend led by Neville Marchant and Greg Keighery and organised by the delightful and talented Margaret Pieroni. It was fun to meet up with our Western SGAPPERS and some of our Eastern ones as well. For who should be there but Christine Guthrie and Bruce Moffatt from the Grevillea Study Group in Sydney and Keith Alcock, leader of the Dryandra Study Group from Melbourne. We looked at the magnificent Darwinia macrostegia, D. wittwerorum, D. oxylepis. In addition the area abounds in Isopogon and Petrophile, Proteaceous species in general are abundant. We found upside down Oxylobiums, unusual maroon-flowered Calothamnus lehmanii, brilliant Thomasias, Dampieras and Pulteneas. We spent an afternoon along Salt River road looking at Dryandras and Verticordias. A marvellous area worthy of much longer than we could afford.

For one whole day Christine, Bruce and I searched for the long lost G. maxwellii. The location we had been given was a bit out and we paced up and down one road nearly all day. This had its advantages in that we got to see lots of interesting and unusual plants and we collected heaps of them including a brilliant red Chorizema-type pea flower. However the elusive G. maxwellii stayed lost. This newly-described species allied to G. asparagoides was collected originally on the Pallinup River by George Maxwell and once this century by the redoubtable Ken Newbey when the area was opened up for farming in the 1960s. Our spirits were dampened not only by the rain at the end of the day but we had tried.

A second search, in company with Greg Keighery later in October and after more information had been gleaned from Ken Newbey's photographic memory, was undertaken. This time we went to the Pallinup River scene of Maxwell's collections and some 5 km. east of the first search. We spent the whole day walking up and down the mountainside and it was after we had decided to give it away that one last reconnoitre of the hilltop was made, a desperate hunch occasioned by a slight change in the terrain. It is hard to explain the kind of thrill you get when, in the depth of exhaustion and resigned to your failure, you walk up and almost stand on your rediscovery before you see it. Wow! About fifty plants in good potential reserve but still unfortunately on private land. We were both over the moon, elated. A great sense of satisfaction. Cuttings and photographs were taken although the plants had just finished flowering. It was heartening to find that nearly all propagators to whom material was sent had succeeded in striking plants. Yet another example of granite flora being the easiest to bring into cultivation. Just a little theory of mine, no proof, take it or leave it.

One sidelight to the search. As we were driving back out from the search site, we drove past some familiar plants making the worst of a desperate battle with weeds. You guessed it. More G. maxwellii and another location albeit a dubious longterm one.

#### FITZGERALD RIVER:

The road east from Highway One to Bremer Bay leads to the southwestern flank of the magnificent Fitzgerald River National Park. Like many areas of W.A. it is predominantly mallee shrubland or heath and contains a myriad of plant genera and species.

G. concinna and G. coccinea were common plants of the vegetation in this area. Both have red toothbrush flowers and are differentiated among other things by the kink in the floral rachis of G. concinna. There are two subspecies and the most common is G. concinna ssp. lemnniana which grows over a widespread area from Needilup to Esperance. Plants of G. coccinea dominated the heath of the National Park in many areas. In the west of its range around the Pallinup River it has broad linear leaves which tend to be soft and somewhat shiny. It holds its flowers in angularly erect fashion on somewhat spreading branches even prostrate at times. To the east around Ravensthorpe it forms a conifer-like shrub with very fine linear leaves. Towards the coast it becomes a low compact shrub. Very adaptable, G. coccinea.

On the western side of the Pallinup we first encountered one of the fine-leaf forms of G. tetragonoloba with its pine-like appearance and its fine leaves. It is a beautiful shrub in the wild and grows in granite loams. It has bright red toothbrush inflorescences and is still often referred in the nursery trade as 'fine leaf hookerana' sic! Down near Bremer Bay we searched in vain for the blunt-leaf form of this species. Unfortunately, the tracks in the Park were closed and we were unable to go in.

Along Bremer Bay Road we came upon some of the many forms of G. nudiflora. We first found this species in the Stirlings with G. tripartita, but here plants were small, low root-suckering, fine-leaved specimens growing in moist, grey heath sands. Some plants had long trailing inflorescences, other held their flowers close to the bush in terminal clusters. We were unable to get down to Point Ann where this species is found with long curled leaves. We saw specimens of this form growing in Kings Park, Wonder where they got it, lucky devils?

From Bremer Bay we headed north to the Highway exploring along the way the numerous side roads around the western edge of the Park. This area is not to be missed by the wildflower enthusiast. My great regret is missing the Qualup Bell, Pimelea physodes. Maybe next time.

Probably the most interesting road in all the southwest, (that's a mighty big statement) is the road south from Highway One along West River Road and Hammersley Drive to East Mt. Barren. Apart from G. tetragonoloba, G. coccinea, G. nudiflora and G. disjuncta ssp. dolichopoda there were few other Grevilleas that I can recall. But the scenery, the flora is so stunning as to leave an indelible impression on the mind. It was a sensation to pass the magnificent pendulous plants of Eucalyptus sepulchralis dominating the endless heath. In flower too. The road winds past rivers and hillsides and the vegetation changes continuously creating a sense of expectation and wonder.

At East Mt. Barren, home of Banksia baueri, B. quercifolia and Regelia velutina among other things, there is a wonderful walking trail leading to the top and overlooking the vast coastline and hinterland beyond. On the day we walked it it was blowing a gale, nothing unusual in the West, except it nearly blew us literally off the mountain. But the climb was worth it, just for the view of the southern seas crashing into the coast in a white-foaming torrent, the picture framed by the wondrous orange flowers of R. velutina.

From Hopetoun where we had camped for a few days we travelled north to Ravensthorpe. Here the grey coastal sands turn to heavy loams and laterised hills of chocolate brown rocks. At Mt. Desmond I found the magnificent G. fulgens. On a previously cleared site, I found a patch of hundreds of plants regenerating in the open spaces. The plants form open spreading shrubs with waving arms of large waxy rose-pink flowers clinging to every leaf axil. They really were a sight to behold.

G. patentiloba occurs here too. South of Ravensthorpe it forms a low decumbent to prostrate plant which is popular in cultivation. On the northern side of Ravensthorpe in heavy loams it forms a prickly erect shrub that you wouldn't want to have a fight with. The Ravensthorpe Ranges behind the township are worth exploring. Drive around to Mt. Short and take the roads up the back. You will climb through some of the most beautiful wildflower country. The most impressive plant I saw in this area was Banksia laevigata ssp. fuscolutea. Magnificent plants with buds of villous brown hairs swelling into yellow cricket balls all over the plant.

From Ravensthorpe we headed to Esperance. Just out of Ravensthorpe there are at least two forms of G. tetragonoloba which are quite distinctive. One the normal coarse rigid leaf species in common cultivation; the second an unusual form with fastigiate leaves on long petioles clasping the branchlets. An unusual broad-leaf robust form of G. nudiflora occurs here too and in my opinion would make an outstanding plant for cultivation. It spreads about 2m and its light green foliage is lush and attractive.

ESPERANCE :

Our last town before heading home, Esperance was one of the most beautiful areas of civilisation in the southwest. Its pure white sandy beaches and deep clear blue waters reminded me of some tropical island. The only thing to spoil it was the westerly wind. After three months, you couldn't repeat my opinion of the legendary doctor. Notwithstanding that, the area was breathtaking in its scenic beauty. If the farmers had not got to work so effectively it would have had much greater natural appeal too. Not that everything was gone. But for over 100 kms east everything bar 20 m. on each side of the road was completely cleared. One cannot believe the devastation on such an unremitting scale. Do these people not love their country nor see what it has to offer? Clearly not. I suppose man cannot live on wildflowers but surely there has to be a better balance. At least Cape Arid National Park has formed a blocking pattern to the spreading destruction.

Along the road to Cape Arid is found the allegedly rare but actually reasonably common G. baxteri. This species is clearly related to the more western G. cagiana but has longer more robust inflorescences. It is a spectacular species whatever way you look at it. I found both red and yellow flowering forms of it. It occurs widely from north of Esperance to at least Cape Arid N.P. Near this Park I located G. pauciflora ssp. psilophylla, a newly-described erect shrub with solitary brilliant pinkish-red flowers in the leaf axils. The other western subspecies grows on Mt. Ragged.

Most roads in the west designated as suitable for 4 wheel drive can be comfortably negotiated by two wheel drive vehicles as they are frequently graded and made with laterite gravel. Only in the wet do they deteriorate into slippery boggy deathtraps. When the road to Mt. Ragged is reached, there is a weatherbeaten sign informing the driver of the suitability of the road for 4 wheel drive only. Naturally I ignored this because by now I know everything about roads. Driving merrily along the gravel road for about 10 minutes, distracting myself with Lechenaultia formosa or prostrate Banksias, I was suddenly brought to a sharp realisation. Ahead lay not a gravel road but a pure white sand dune with pot hole to begin with about three feet deep. I came to a screeching halt, thought twice and turned round. Mt. Ragged will have to wait.

Driving back to Esperance, I came upon the most wonderful form of G. plurijuga. Completely prostrate, it sent runners radiating from its centre topped with huge cylindrical spikes of pink flowers. Driving further north this species becomes a robust erect shrub with rick pink flowers waving above its head on erect spikes. In the same area it becomes a decumbent shrub, tightly domed with leaves divided into fine pinnae. I even found a whitish-pink form of this shrub along Norwoods Road in deep white sand.

And so it was over. I have skipped so much but who can tell it all? I have missed you Western Australia since my return and I remember every day as if it were yesterday. Like MacArthur said, we shall return.

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