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STUDY GROUP NEWSLETTER

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MEMBERSHIP: The *Prostanthera* and *Westringia* Study Group is for all those who are interested in the cultivation of Mint bushes and Westringias which have been collected from the wild.

FEES: $4:00. Please make sure that you are a financial member.

Fees Last Paid: 1 9/1989 DUE ✓

The Society for Growing Australian Plants

Since S.G.A.P. in Hobart

Brian Timmis
Berrima, NSW

A follow up to the Biennial General meeting held in Hobart during January 1990. Most members have probably read elsewhere regarding the outcomes and activities of this meeting. Unfortunately, our Study Group was not represented.

Barbara Daly has resigned as Study Group Co-ordinator. I would like to thank her for her support and efforts to promote Study Groups in S.G.A.P. Her letters and telephone conversations have helped to keep me on the straight and narrow. I hope she will remain a member of our Study Group.

I welcome Jan Sked as the new co-ordinator. I know that she will keep up the good work. Jan is also a member of our Study Group.

I believe that our Study Group is operating within the recommenations of S.G.A.P. Our *Newsletter* is of a high standard, covering news and botanical information. Plant study and collecting from the wild is ongoing. Our living plant collection is not really expanding as we had hoped. Collectively, our members have a very comprehensive collection of species. I have neglected the cutting exchange. To those members expecting material, I hope soon to get it under way again. At present, the supply of plants is very limited, mainly because of the lack of propagating facilities.

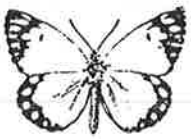
The leader of the *Dodonaea* Study Group, Jeanette Closs, has written to Study Group leaders regarding reciprocal exchange of Newsletters. I believe that this is basically a good move, however, I think that the cost of our *Newsletter* makes this prohibitive. We do have an exchange with a few Study Groups and I find their news and activities interesting and informative.

*****

Vale

Geoff Needham

It is with deep regret that we record the death of Geoff Needham, Leader of the *Eremophila* Study Group. He will be sadly missed by his fellow S.G.A.P. Members.



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FRONT COVER

The illustration on the front cover is *Prostanthera striatiflora*. This species is confined to the semi-arid regions of Central Australia.

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Talks

Brian Timmis presented a talk on *Prostanthera* to the Nowra S.G.A.P. Group on the 10th May 1990. This talk was very warmly received.

*****

HELP! HELP!

The Yarra Yarra group of the Victorian S.G.A.P. needs someone to speak on *Prostanthera*.

Anyone interested can contact Christine O'Brien (Secretary) - Phone (03) 439 4874.

The Yarra Yarra Group meets at the North Eltham Primary School, at 8.00 p.m. on the first Thursday of each month.

Donations to the Study Group

As an expression of support for Study Groups, S.G.A.P., N.S.W. Limited has decided to donate $25.00 per year to each Study Group.

Please find enclosed cheque (value $50.00) for the years 1988/9.

We would appreciate copies of each of your publications to be sent to our Newsletter Editor,

Norm Kemble 13 Tumbi Rd, TUMBI UMBI 2259

and to

Allan Woollett 3 Currawang Place, COMO WEST 2226.

We wish you well with your ongoing work.

Glen Harvey
Hon. Secretary

[I thank S.G.A.P. N.S.W. Limited for their support, it is a pity that it was not given more willingly or promptly. However, it is very encouraging that all Study Groups are receiving support - Brian.]

*****

I fear that you may be having financial difficulties for the Study Group. Please find enclosed a $100.00 donation.

David M. Gordon
"Myall Park"
Glenmorgan, QLD

[David, On behalf of the Study Group, we thank you for your most generous support. We can not find words to express our gratitude - Barry & Brian.]

****

Prostanthera lasianthos

Brian Timmis

In 1797, Henry Andrews began publication of one of the earliest botanical journals the *Botanists Repository*. A later publication in 1810 featured a hand-coloured engraving *Prostanthera lasianthos* with text. I recently purchased an original engraving from a Sydney Gallery. It is a beautiful piece of art now mounted and framed in Australian Cedar.

In reference to Barbara Buchannan's article in *Newsletter* 16 (page 8). She discussed the varying strengths of pink-flowered colouring of *P. lasianthos*, 'Kallista Pink'. My illustration of *P. lasianthos* is definitely a 'Kallista Pink' engraving. The flower colour of the engraving matches exactly growing specimens from my collection. The plant used in the engraving was raised from seed at Dropmore, England in the Summer of 1807.

Figure: *Prostanthera lasianthos*

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Aboriginal Uses of Prostanthera striatiflora

Barry Conn

[The following is an extract from the book "Traditional Bush Medicines". It would be very interesting if there are any other traditional uses for other mint bushes. We would be grateful if members could do some research in Libraries. Who knows what we might find out?]

A large handful of the pleasantly aromatic leaves is boiled in half a billycan of water. The steam can be inhaled to clear a congested nose. When cool, the liquid is strained, and used once a day as a wash for colds and flu. Branches placed on the fire will give off vapours which can be inhaled for head colds.

Half a cupful of leaves and one cupful of animal fat are heated together until boiling. The green liquid formed is stirred to mix the ingredients thoroughly and allowed to cool. The consistency of the preparation depends upon the source of the fat, and will vary from a thin cream (goanna) to a solid ointment (beef or kangaroo). It is massaged in for colds and general aches and pains, and as a remedy for the crusty sores of infected scabies. If no fat is available, the leaves are boiled in water and the liquid used as a wash.

NOTE: Preparations of this liquid should not be taken internally, and contact with the eyes must be avoided. When treating babies, only a little should be rubbed in very gently, and never on the neck or head.

Dried and crushed leaves are scattered over the surface of water holes to stupefy game birds and make them easier to catch. It is not safe for humans to drink the water, so branches are left beside the hole as a sign that it has been poisoned.

Figure: *Prostanthera striatiflora* (Taken from Althofer, G.A. *Cradle of Incense*)

*****

The two winters I have spent in Berrima have been considered "mild", with temperatures down to (only) - 4 °C. on a few occasions, some heavy frosts and snow one inch deep one day. From my progressive plantings only a few plants have died. Unnoticed insect attack has probably been more damaging than the climate.

The top soil seems to be a dark sandy loam and beneath this a slightly clay loam extending some one to two metres to sandstone. This soil structure seems to continue through all of Berrima.

Plants that have survived and are really going ahead are now sentenced to their third winter in Berrima are *Acacia boormanii, A. baileana, A. howittii, A. iteaphylla, A. longifolia, A. fimbriata, A. vestita, A. spectabilis, A. floribunda, A. pravessima, A. rubida* (local), *A. decora.*

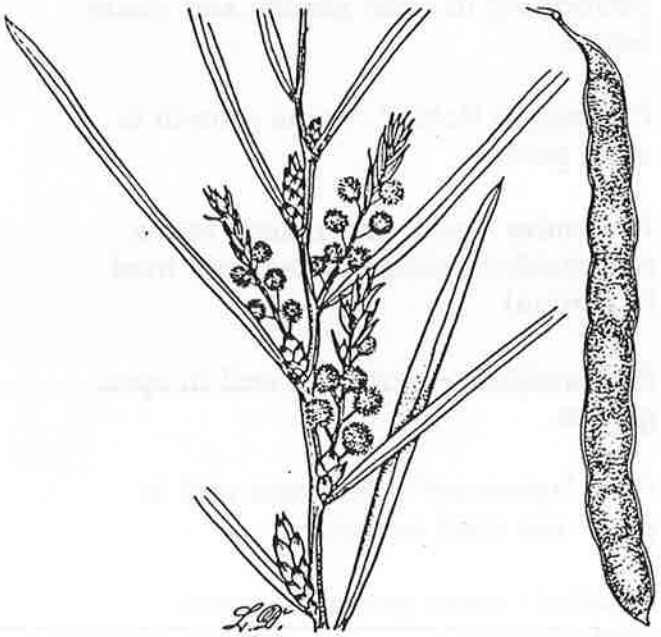

Figure: *Acacia iteaphylla*

Several boronia species and hybrids; *Callistemon linearis, C. salignius; Allocasuarina* spp, *Dampiera purpurea; Eucalytus crenulata, E. nicholii, E. citriodora* (will need protection) and a few other species are growing happily.

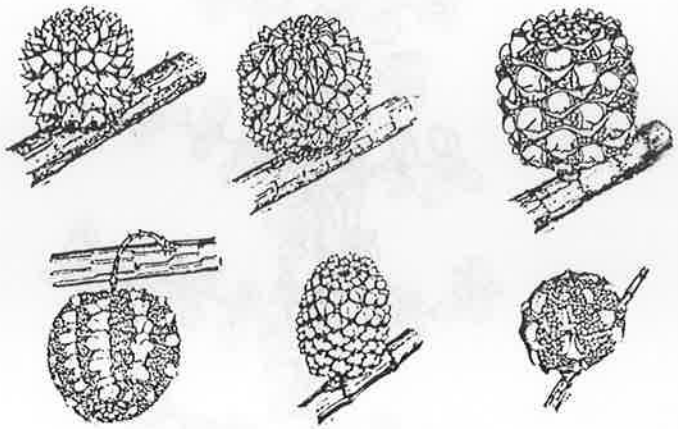

Figure: *Fruits of Allocasuarina species*

Also looking happy are *Grevillea baueri* (local), G. "Bronze Rambler", G. "Ned Kelly", G. "Misty Pink" (not well flowered), G. *rosmarinifolia* (forms), G. *victoriae; Hakea salicifolia, Brachyscome angustfolia, B. multiflora, Sollya heterophylla, Banksia ericifolia, B. integrifolia, B. serrata, Melaleuca violacea, Viola hederacea, Hardenbergia violacea, Westringia fruticosa, W. longifolia, Anigozanthos* (yellow) hybrid.

Prostantheras in more detail:

P. aspalathoides - manage to live on and still flower well in shade house.

P. baxteri - not performing well.

P. discolor - surviving well, not much new growth.

P. incana - in pot. Species probably

more suited to garden planting.

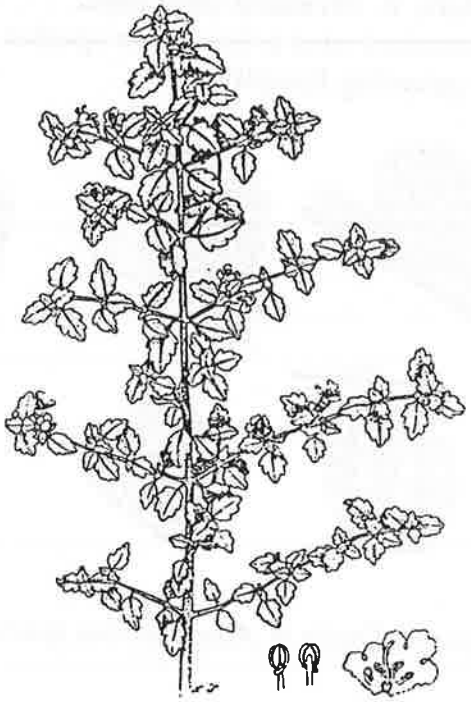

Figure: *Prostanthera incana*

P. lasianthos - as P. incana.

P. nivea - hardy / not much growth in open garden and shade house.

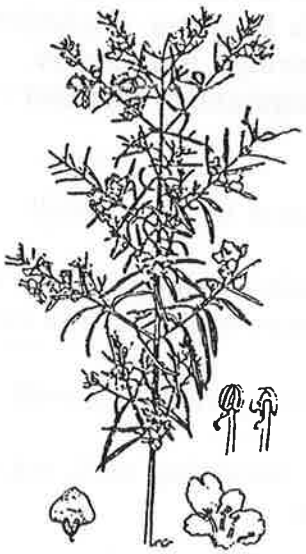

Figure: *Prostanthera nivea*

P. ovalifolia - some growth in open garden.

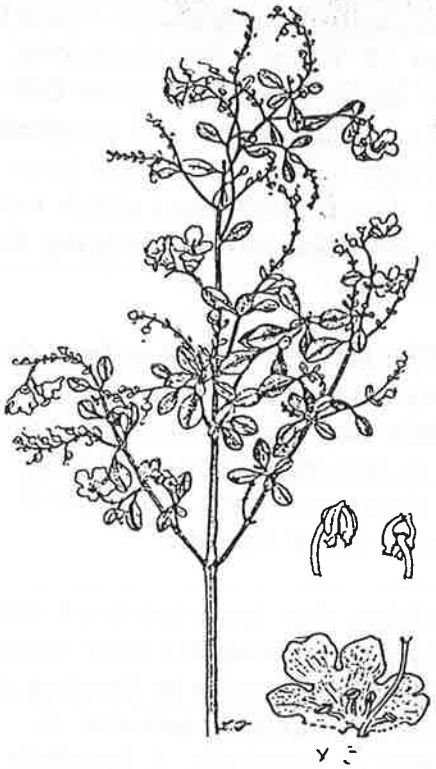

Figure: *Prostanthera ovalifolia*

P. phylicifolia/P. scutellariodes - performing in open garden and shade house.

P. "Ragged Robin" - some growth in open garden.

P. rhombea - pink and mauve forms reasonable in shade house. (not tried in garden)

P. rotundifolia - performs well in open garden.

P. sp "rylestone" - performs well in pots - not tried in garden.

P. sieberi - some growth in open garden.

P. striatiflora - surviving in shadehouse.

P. stricta - surviving in shadehouse.

P. teretifolia - surviving in shadehouse.

P. violacea - surviving in shadehouse.

P. saxicola var. *montana* - performs well.

P. rugosa (local) - not much growth in garden.

P. "Poorinda Margaret McCrae" - performing well, in open garden with some protection.

P. "Poorinda Theme" - performing well, in open garden, with some protection.

P. cruciflora - growing well in pot - not well flowered.

Prostanthera species endemic to this area are:

P. lasianthos
P. rugosa
P. hirtula

Established plants of *P. rotundifolia* and *P. ovalifolia* are seen in many gardens through the Southern Highlands.

As in all new wildflower gardens the time factor is of utmost importance. When I started this garden there were no trees. It is essential to get a tree canopy. The eucalypts and acacias are basically for eventual protection of smaller less hardy plants. I tend to overplant at times, not really knowing what growth to expect. Unfortunately, by this method special plants suffer.

To illustrate this point we recently visited the Canberra Botanic Gardens. One garden bed, about six metres across had a beautiful *Acacia floribunda*, 4-5 metres high spreading across the width of the bed. When planted this *Acacia* was only about 300 mm tall. Definitely not much to look at then. No doubt other plants were planted at the time to make the bed attractive but removed as the splendour of the *Acacia* progressed.

Back to the Caringbah garden. I returned recently and the new owners are still excited with it. (They joined SCAP). Their garden is tall and wild, with lots of big flowering Grevilleas, massed Prostantheras and many birds. When spring comes to Berrima this year I believe I will have achieved what I started, "Bringing the bush back to Berrima."

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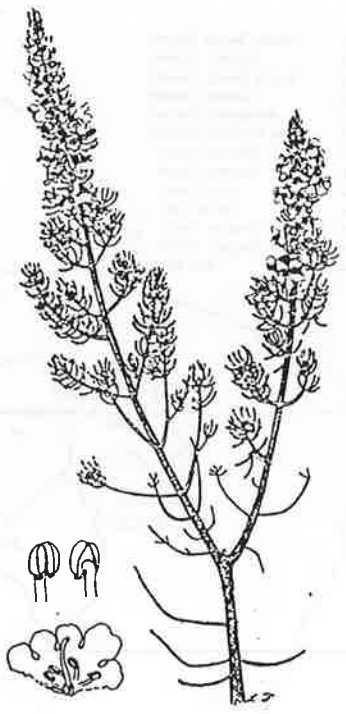


P. teretifolia

UNDER THE LENS

PROSTANTHERAS OF CENTRAL AUSTRALIA

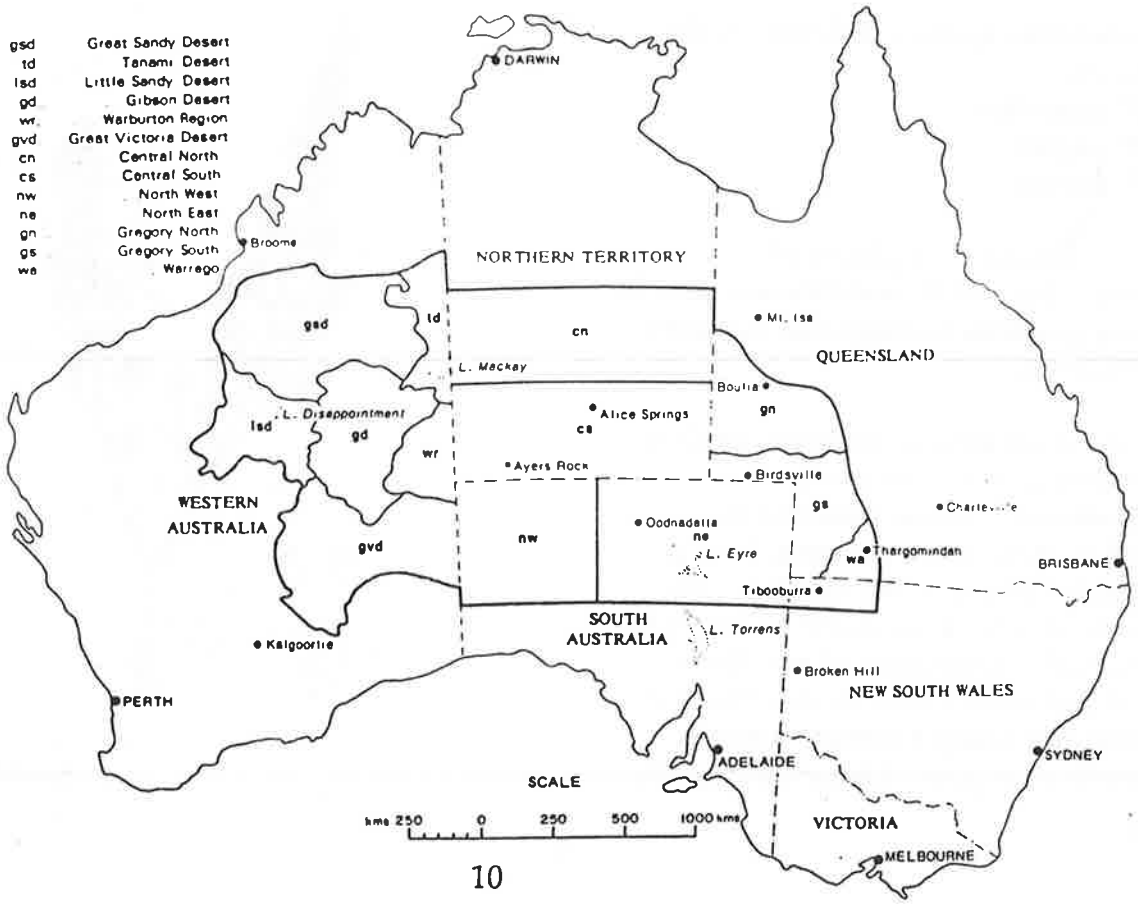
Barry Conn

Eight species of *Prostanthera* occur in the dry region of Central Australia. However, all of the species are better regarded as semi-arid species because they are usually associated with water-courses or occur along drainage lines, often in rocky crevices or at the base of rocky outcrops.

The map of Australia (below) shows the area dealt with in this treatment and the abbreviations used for the subdivisions cited in the distribution of each species.

Useful References:

Althofer, *Cradle of Incense* (1978); Conn, *J. Adelaide Bot. Gard.* 6: 207 (1984); Conn, *Nuytsia*, 6: 351 (1988).



Key to Species

1.Branches glabrous or with hairs usually restricted to ridges or grooves . . . . . 2.
Branches moderately to very densely hairy with hairs all over surface. . . . . 4.

2.Branches with spines present . . . . . 1. P. nudula
Branches with spines absent . . . . . 3.

3.Leaves 2-6 mm long; adaxial calyx lobe 6-8(-13) mm long . . . . . 5. P.megacalyx
Leaves (4-)8-30(-38) mm long; adaxial calyx lobe 2.5-3.9 mm long . . . . . 7. P. striatiflora

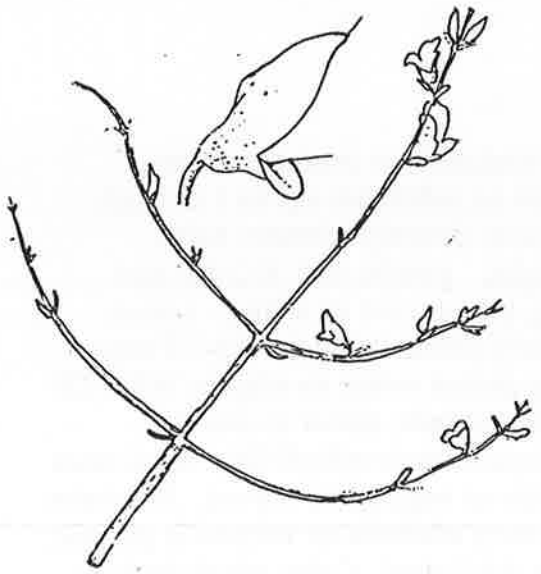
4.Hairs of branches appressed and antrorse. . . . . 5.
Hairs of branches patent or indumentum a mixture of appressed, subappressed and patent hairs, hairs retrorse to antrorse . . . . 6.

5.Leaves terete, linear . . . . . 3. P. sericea
Leaves flat, margin often slightly incurved or recurved . . 4. P. althoferi ssp. longifolia

6.Corolla purplish blue to mauve or blue without striations; hairs of branches straight and patent . . . . 2. P. centralis
Corolla mauve to pale violet or white with deep purple striations in throat; hairs of branches variously bent, curled to straight, indumentum of branches a mixture of appressed, subappressed and patent . . . . . 7.

7.Leaves sessile; lamina elliptic, ovate to narrowly elliptic, narrowly obovate or narrowly oblong; hairs of branches 0.2-2.1 mm long . . . . . 8. P. wilkieana
8.Leaves with petiole 1.2-2.5(-7) mm long; lamina broadly ovate, broadly elliptic to ovate, rarely circular; hairs of branches 0.1-0.3 mm long . . . . . 6. P. suborbicularis

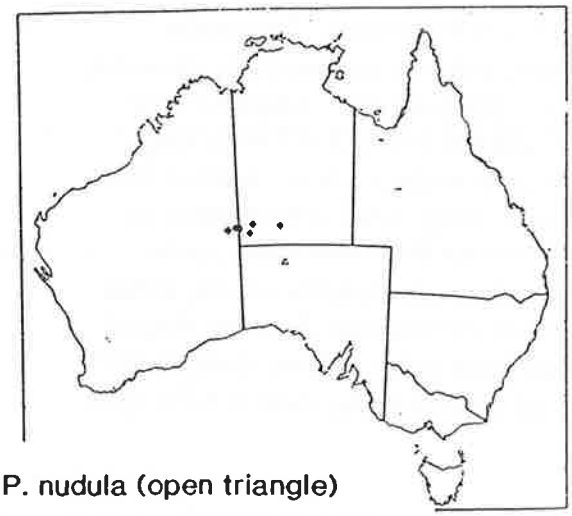
1. Prostanthera nudula J.M. Black *ex.* E.L. Robertson. Shrub 0.5-2 m high. *Branches* striate, rigid and spinescent, often defoliated, glabrous except for a few hairs. *Leaves* glabrous; *petiole* 0.3-0.8 mm long; *lamina* narrowly elliptic, 3.9-10.5 x 1.3-2.2 mm. *Bracteoles* narrowly elliptic to narrowly obovate, 1.5-2.4 x 0.3-0.4 mm. *Calyx* yellow-green; *abaxial lobe* 3.3-4.7 mm long, 2.6-3.6 mm wide at base; *adaxial lobe* 5.2-8 mm long; 3.5-5.2 mm wide at base. *Corolla* 8-11 mm long, pale cream-coloured, basally white, inner surface of throat and base of abaxial median lobe with yellow dots, main veins of tube purple; *tube* 4.7-7.5 mm



P. nudula

long; *abaxial median lobe* 3-3.5 mm long, *c.* 4 mm wide at base; *lateral lobes c.* 3 mm long, *c.* 2 mm wide at base; *adaxial median lobe-pair* 4.2-4.5 mm long, *c.* 4.4 mm wide. *Anther appendage* 1.5-1.6 mm long. *Pistil c.* 8 mm long. *Fruiting calyx* slightly enlarged (abaxial lobe 4-5 mm long; adaxial lobe (7-) 10-14 mm long).

SA: nw, where endemic in Everard Ranges. Occurs amongst granite outcrops usually near watercourses.



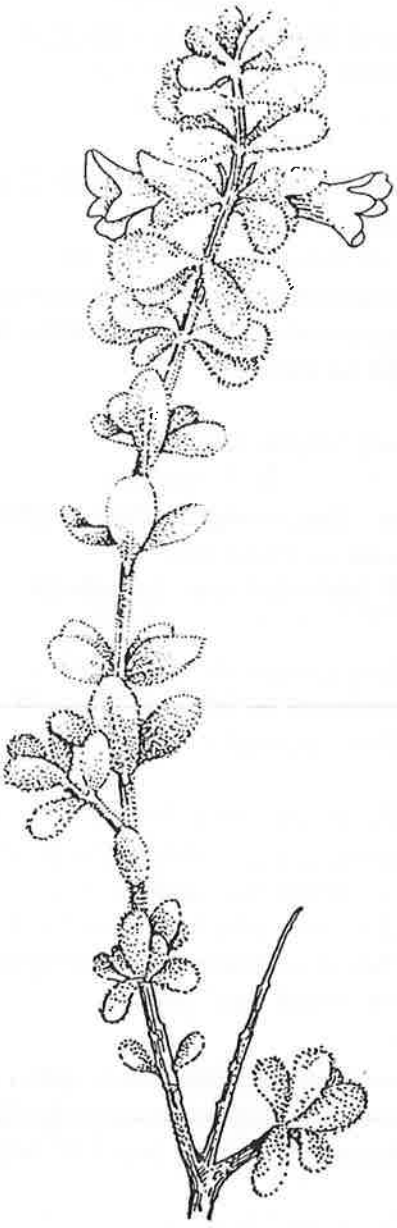
P. nudula (open triangle)

P. centralis (solid diamond)

2. Prostanthera centralis Conn. Shrub or subshrub up to 1 m high. *Branches* densely hirsute; hairs straight, patent, (0.1-)0.2-1.5 mm long, translucent to white. *Leaves* densely hirsute; *petiole* 0.5-1.5 mm long; *lamina* ovate to elliptic, 9-20(-27) x 4-9(-13) mm; distal leaves of inflorescence prophyll-like, basal ones similar to vegetative leaves. *Bracteoles* narrowly obovate or narrowly elliptic, 4-6 x 0.5-1 mm. *Calyx* green basally, purple-green distally; *abaxial lobe* 3-6 mm long, 4-7 mm wide, *adaxial lobe* 3.7-7 mm long, 6-8(-11) mm wide.

Corolla 11-16 mm long, purplish-blue, mauve to blue; *tube* 8-10.5 mm long; *abaxial median lobe* 3-5 mm long, 5-6 mm wide, *lateral lobes* (*c.* 2.5-)4 mm long, (2-)3 mm wide; *adaxial lobe-pair c.* 3.3-4 mm long, 6-8 mm wide. *Anther appendage* 1 or 2, 1.8-2.5 mm long. *Pistil* 9-11 mm long. *Fruiting calyx* enlarged (abaxial lobe 6.5-7 mm long; adaxial lobe 8.5-9 mm long).

WA: wr. NT: cs. Endemic. Occurs in gravelly soils on quartzite scree slopes.



P. centralis

3. Prostanthera sericea (J.M. Black) Conn. Shrub 1-1.5 m high, sometimes a small tree, up to 4 m high. *Branches* usually grooved, moderately to densely hairy, appearing silver-green, or grey-green, hairs straight, appressed, antrorse, 0.2-0.3 mm long, white or grey-green. *Leaves*, moderately to densely hairy; *petiole* absent; *lamina* linear, terete or with a faint groove along adaxial surface, strongly incurved and/or deeply grooved along adaxial surface, or flat, 10-53 x 0.4-3.4 mm. *Bracteoles* linear to narrowly oblong, rarely narrowly elliptic, 0.6-2.3(-2.6) mm long, 0.1-0.4 mm wide. *Calyx* cream; *abaxial lobe*1.2-2.8(-3) mm long, 1.6-5.2 mm wide; *adaxial lobe* 2.1-5.4 mm long, 2.8-6.4 mm wide. *Corolla* 7-10 mm long, white with mauve or purple streaks on inner distal part of tube and inner abaxial surface of mouth, *tube* 3.5-5.7 mm long; *abaxial median lobe* 3-5 mm long, 2-3.8 mm wide; *lateral lobes* 2-4.3 mm long, 1.5-2.7 mm wide; *adaxial median lobe-pair* 1.3-5.5 mm long, 4-6.3 mm wide. *Anther appendage* 0.4-1 mm long. *Pistil* 5-8 mm long. *Fruiting calyx* enlarged (abaxial lobe 2-4 mm long; adaxial lobe 4.7-13 mm long). *Prostanthera baxteri* A. Cunn. *ex* Benth. var. *sericea* J.M. Black.

WA: wr. NT: cs. SA: nw. Endemic. Occurs in open *Eucalyptus gongylocarpa* woodland between sand dunes, on the slopes of granitic hills or in red sands overlying red sandstone with *Cassia artemisioides*.

This species is characterized by two main variants.

1. The 'terete leaf' variant (including the Type): has terete leaves or leaves which only have a faint groove along their adaxial surface (0.6-1.1 mm wide); the branches and leaves are silver-green; the indumentum is white; the anthers are 0.6-1 mm long and style *c.* 4.5 mm long. This variant occurs in SA, NT (Bloods Range and Mt. Rawlinson area) and WA.

2. The 'incurved leaf' variant: has incurved leaves (0.4-1.4 mm wide) such that they appear to be terete; the branches and leaves are silvery grey-green to blue-green; the indumentum is grey-green; the anthers are larger than those of the 'terete leaf' variant (1-1.5 mm long *cf.* 0.6-1 mm long); and the style is longer for this variant (*c.* 6-7 mm long *cf. c.* 4.5 mm long). This variant is endemic to the NT.

The relationship between *P. sericea* (particularly the 'incurved leaf' variant) and *P. althoferi* ssp. *longifolia* is unclear. The present circumscription appears to be artificial.

4. Prostanthera althoferi Conn. Shrub *c.* 0.5-3 m high. *Branches* densely hairy, appearing silvery grey-green; hairs straight, appressed, antrorse, 0.2-0.5 mm long, white or grey. *Leaves* densely hairy; *petiole* absent or up to 0.4 mm long; *lamina* narrowly obovate to linear; rarely obovate, 7.3-36(-43) x 1.2-2.5(-3.4) mm. *Bracteoles* narrowly oblong to linear, 0.7-3.6 mm long, 0.1-0.4 mm wide. *Calyx abaxial lobe* (1.2-)1.8-2.9 mm long, 2-4 mm wide; *adaxial lobe* (2-)3.4-5.6 mm long, 2.6-6.5 mm wide. *Corolla* 6.5-9(-10) mm long, white to cream-coloured with mauve or purple (to pink) striations on inner surface of tube and/or mouth and base of lobes, inner surface of abaxial median lobe often with 2 yellow spots; *tube* 3.4-6.5

P. althoferi Subsp. longifolia

mm long; *abaxial median lobe* 3.3-6.6 mm long, 2.7-5.5 mm wide; *lateral lobes* 2.2-5.1(-6) mm long, 1.5-3.6 mm wide; *adaxial median lobe-pair* 2.6-5(-6) mm long, 4-7.3(-7.8) mm wide. *Anther appendage* 0.3-1 mm long. *Pistil* 5-8 mm long. *Fruiting calyx* enlarged (abaxial lobe 2-5.5 mm long; adaxial lobe 5-16 mm long).

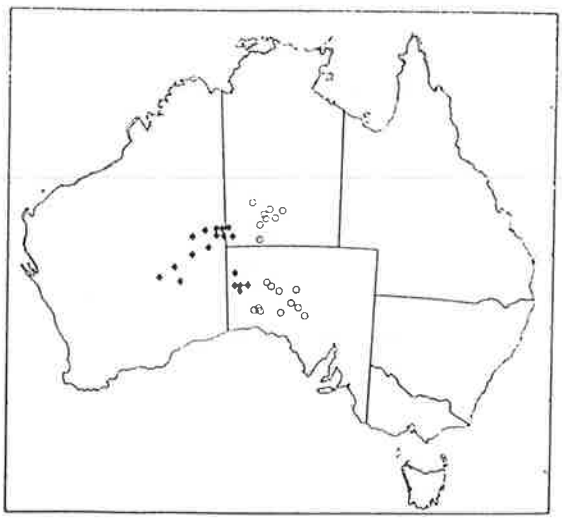
Occurs in the Northern Territory, South Australia and Western Australia.

This species has been frequently confused with *Prostanthera baxteri* var. *crassifolia* and *P. wilkieana*. The confusion with *P. baxteri* var. *crassifolia* was largely because of the misunderstanding of the circumscription of this variety. *P. wilkieana* differs from this species by having longer more or less patent hairs (up to 2.1 mm long) which vary from antrorse to retrorse, longer bracteoles (1.1-4.6 mm long *cf.* 0.7-1.6 mm long for *P. althoferi*), and a shorter pistil (2.2-5 mm long *cf.* 7-8 mm long for *P. althoferi*).

Subsp.*longifolia* Conn. Shrub 1-3 mm high. *Leaf lamina* narrowly obovate to linear, (14.8-)17-36(-43) x 0.4-2.2(-2.5) mm. *Calyx abaxial lobe* (1.3-)2-2.9 mm long, 2.1-4 mm wide; *adaxial lobe* (2.1-)3.4-5.4 mm long, 3.4-6.5 mm wide. *Corolla tube*3.4-6.5 mm long; *abaxial median lobe* spathulate or very broadly to broadly obovate, 3.5-5.5 mm long, 2.7-5 mm wide. *Anthers* cristate dorsally. - *P. baxteri* var. *crassifolia auct. non* Benth.; Haegi, in J. Jessop (Ed.), Fl. Central Austral. 310(*p.p.* - included under *P. wilkieana*) (1981). - *P. striatiflora* F.v. Muell. var. *sericea* Benth.

NT: cs. SA: nw. Occurs in sandy soils, on sand plains, sand dunes or in interdunal areas, or on well-drained granitic loamy sands of stony hills.

Refer to notes on the 'Incurved leaf' variant of *P. sericea* for comments on the relationship between this subspecies and that variant.

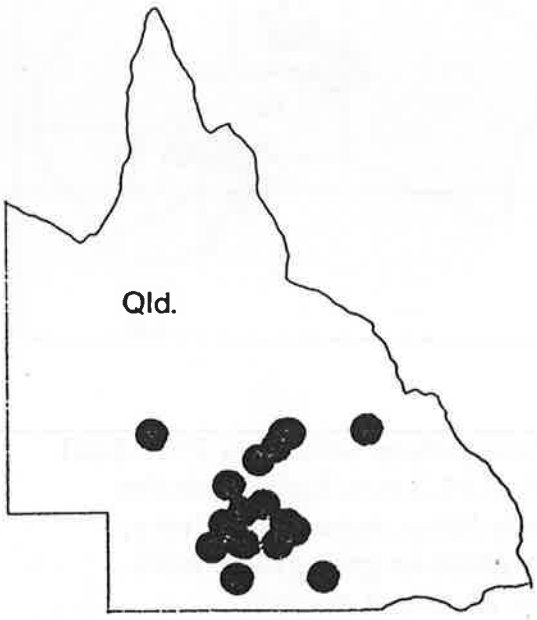


P. sericea (solid diamond)
P. althoferi (circle)

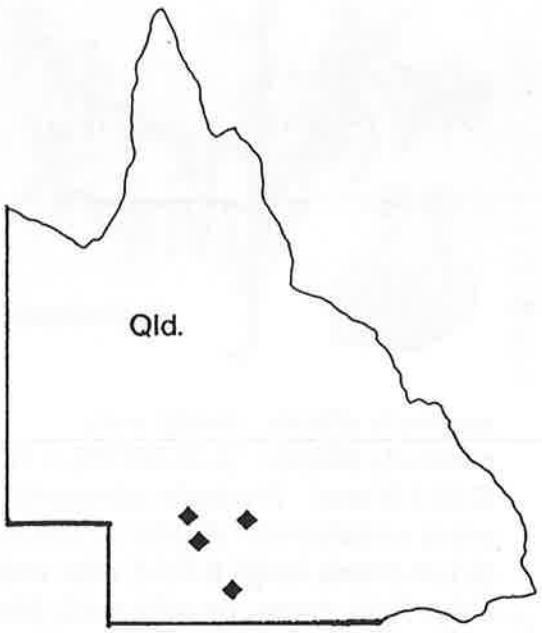
5. Prostanthera megacalyx C.T. White & Francis. Shrub 0.3-*c.* 1.5 m high. *Branches* sparsely hairy or indumentum confined to internodal surface from within leaf axil to the next more distal node (between the bases of the leaves); hairs curled, erect to subappressed, antrorse, *c.* 0.2 mm long, white; sparsely hairy; leaves sparsely hairy; *petiole* 0.8-1.2(-1.7) mm long; *lamina* circular to broadly elliptic, rarely transversely elliptic, 2.6 x 2.3-3.5 mm. *Bracteoles* linear-elliptic, (3.5-)5-8 mm long; 0.3-1 mm wide. *Calyx* light green with brown-purple lines abaxially,? green to brown-purple adaxially; *tube* 2-3 mm long; *abaxial lobe* 3.2-4 mm long, 3.7-4.2 mm wide; *adaxial lobe* 6-8(-13) mm long, 5.5-6.5(-8) mm wide. *Corolla* 16-22 mm long, purple, white or inner abaxial surface of tube, *tube* 12-15 mm long; *abaxial median lobe* 5.8-8 mm long, 7.8-10 mm wide; *lateral lobes* 5-6 mm long, 5-6 mm wide; *adaxial median lobe-pair* 4-6 mm long, *c.* 12 mm wide. *Anther appendage c.* 1.5 mm long. *Pistil* 18-20 mm long. *Fruiting calyx* greatly enlarged (abaxial lobe 5.5-9 mm long; adaxial lobe 15-19 mm long).

Q: gs, wa. Endemic. Occurs on open stony ridges in open *Acacia* shrubland.

6. Prostanthera suborbicularis C.T. White & Francis Shrub 0.6-2(-2.3) m high. *Branches* very densely hairy; hairs variously bent to curled, suberect, antrorse to retrorse, 0.1-0.3 mm long. *Leaves* very densely hairy; *petiole* 1-2.5(-7) mm long; *lamina* broadly ovate or broadly elliptic to ovate, rarely circular, (5-)7-11(-15) x (3-)5-8(-11) mm. *Bracteoles* narrowly oblong to linear-triangular, 1.3-2.3 mm long, 0.3-0.4 mm wide. *Calyx*? silver-green to grey-green; *tube* 3.5-4.5 mm long; *abaxial lobe* 1-1.4 mm long, 2-3 mm wide; *adaxial lobe* 2-3.5 mm long, 3-5.9 mm wide. *Corolla* (10-)15-20 mm long, very pale mauve (almost white) to cream-coloured with purple striations in throat and on base of lobes; *tube* 5-9 mm long; *abaxial median lobe* 6.5-11.7 mm long, 9-11.8 mm wide; *lateral lobes* (3.3-)5.5-6.2 mm



Distribution: P. megacalyx

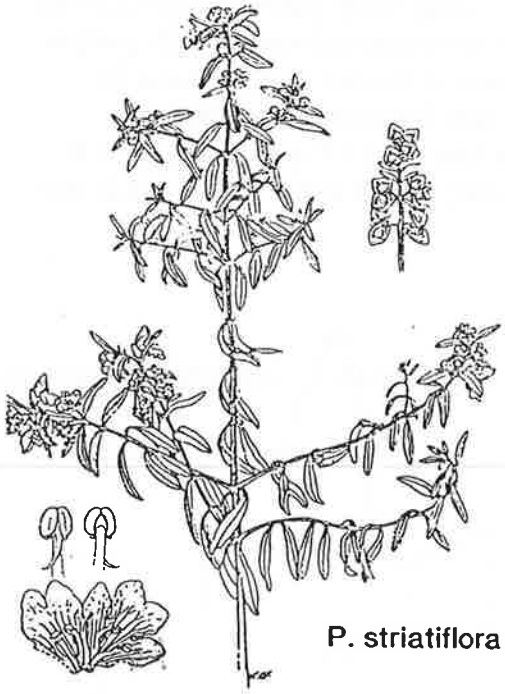


Distribution: P. suborbicularis

long, 2.9-4.2 mm wide; *adaxial median lobe-pair* (4-)7-11 mm long, (4.2-)7-9.2 mm wide. *Anther appendages* 2, *c* 0.3 mm and 0.8-1 mm long, respectively. *Pistil* 8-10 mm long. *Fruiting calyx* slightly enlarged (abaxial lobe 2-4 mm long; adaxial lobe 4-10 mm long).

Q: gn, ?gs, wa (Q). Occurs in open woodland communities and open hummock grasslands, in rocky areas.

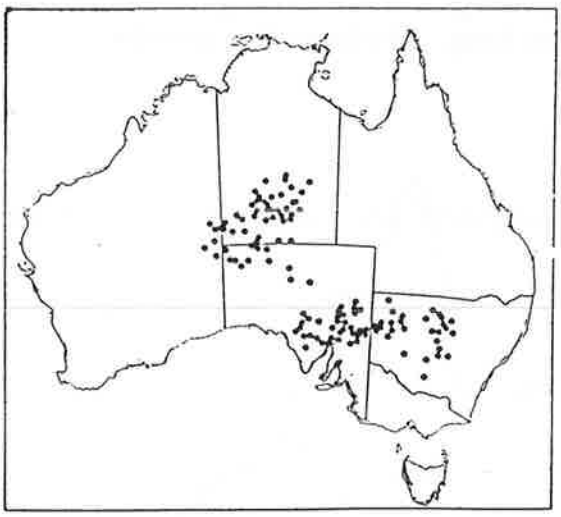
7. Prostanthera striatiflora F.v. Muell. Shrub (0.2-)0.5-2 m high. *Branches* very sparsely to sparsely hairy, particularly in grooves and at nodes, or glabrous, hairs (when present) straight to curled, subpatent to antrorse, 0.1-0.2 mm long. *Leaves* glabrous, rarely with an occasional hair; *petiole* absent or up to *c*. 1 mm long; *lamina* narrowly ovate to



P. striatiflora

narrowly elliptic, rarely very narrowly elliptic, (4-)8-30(-38) x (1.5-)2-8(-10) mm. *Bracteoles* narrowly ovate or narrowly elliptic to linear, (2.1-)3-6 mm longl 0.3-0.9 mm wide. *Calyx* light green, usually with faint purple tinge adaxially, *abaxial lobe* 2.5-3.9 mm long, 2.3-3.9 mm wide; *adaxial lobe* 4.6-6.6 mm long, 3-5-5.2 mm wide. *Corolla* 10-17 mm long, white, inner adaxial and lateral surfaces of tube with purple lines present, inner abaxial surface of tube white with dull orange to yellow dots present (yellow-orange lines often present also); *tube* 10.3-11.4 mm long *abaxial median lobe* 6.5-9.8 mm long, 8.5-9.1 mm wide; *lateral lobes* 5.2-8.5 mm long, 4.6-5.6 mm wide; *adaxial median lobe-pair* 5.5-10.4 mm long, 8.5-13.8 mm wide. *Anther appendage* 2.3-2.9 mm long. *Pistil* 10.7-13 mm long. *Fruiting calyx* enlarged (abaxial lobe 4.3-5 mm long; adaxial lobe 10-12 mm long).

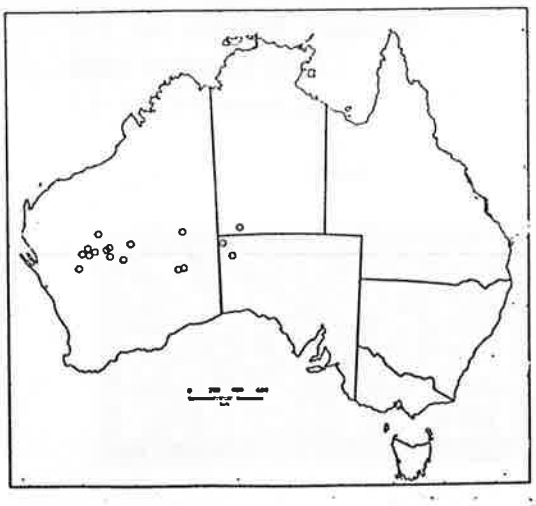
WA: wr, gvd. NT: cn, cs. SA: nw, ne. NSW. (WA, SA, NSW). Commonly occurs in skeletal soils of rocky areas, in Open Woodland communities associated with various *Acacia* spp.

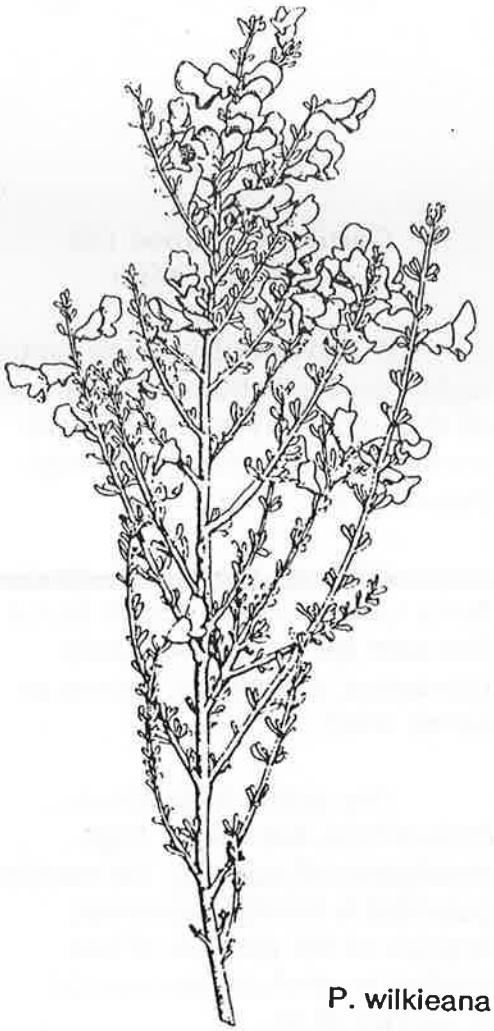


8. Prostanthera wilkieana F.v. Muell. Shrub 0.3-1.2 mm high. *Branches* densely hairy, appearing silvery, silver-green or grey-green; hairs curled to almost straight,

subappressed to almost patent, antrorse to retrorse (indumentum appearing 'untidy', 0.2-2.1 mm long, white. *Leaves* densely hairy, rarely moderately hairy; *petiole* absent; *lamina* elliptic, obovate to narrowly elliptic, narrowly obovate or narrowly oblong, (2.8-)4-10(-16) x 1.3-5.4 mm. *Bracteoles* narrowly obovate to linear, 1.1-4.6 mm long, 0.2-0.5(-0.9) mm wide. *Calyx* silvery-green; *abaxial lobe* (1.3-)2.2-3.6(-4.3) mm long, 2.1-4(-5.2) mm wide; *adaxial lobe* (2.2-)3.6-6.5 mm long, (3.9-)4.2-7.5 mm wide. *Corolla* 7.5-17 mm long, mauve to pale violet or white (sometimes pale blue), with deep purple streaks in throat and a few dull yellow to yellow-brown spots on inner surface of abaxial median lobe; *tube* 3.3-7.5(-10.4) mm long; *abaxial median lobe* (2.1-)3-6(-7.8) mm long, (1.7-)3-6.4(-7.8) mm wide; *lateral lobes* 2-5.2 mm long, 1.3-4.7 mm wide; *adaxial median lobe-pair* (1.8-)2.9-6.6 mm long, (2.7-)3.5-5.6(-9) mm wide. *Anther appendage* (0.2-)0.4-1.3 mm long. *Pistil* 2.2-5 mm long. *Fruiting calyx* enlarged (abaxial lobe 2.6-5.9 mm long; adaxial lobe 6.2-11.8 mm long).

WA: gd, gvd. NT: cs. SA: nw (WA). Occurs in Spinifex sandplain communities, in the interdunal area in red sand, and near watercourses.





P. wilkieana

FIELD TRIPS

Getting the Good Oil on Native Mint

A native bush which contains higher concentrations of eucalyptus oil than gumleaves brought two young Sydney botanists through Denmark last week.

While in Western Australia Barry Conn and Judy Scott found five new species of the family Lamiaceae, commonly known as native mint.

One genus in particular, *Prostanthera*, has a very high eucalyptus oil content. Its market potential is limited, however, because of the amount of leaf needed to produce commercial quantities of oil.

Lamiaceae is also difficult to propagate.

About 200 species are recorded in Australia, and several in Western Australia are gazetted as rare.

Many of the known species had not been collected since last century and part of Barry and Judy's task was to find out how many had survived a hundred years of landclearing by agriculture and other impacts.

Barry said that they had been ably assisted by Denmark naturalist Brenda Hammersley and Eileen Croxford in Albany, whose local knowledge had made the visitors' job much easier.

Professional scientists in many disciplines relied heavily on amateurs' field experience to broaden the general information base, he said.

Barry and Judy, who work for Sydney's Royal Botanic Garden, spent about six weeks in WA, travelling as far north as Menzies and Kalbarri.

Their expedition will provide important updated information about the plant family's distribution and survival capabilities under a range of conditions.

An article from the
Denmark Bulletin No. 238
18th October 1989
(Denmark, W.A.)

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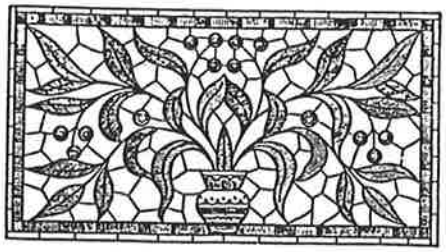


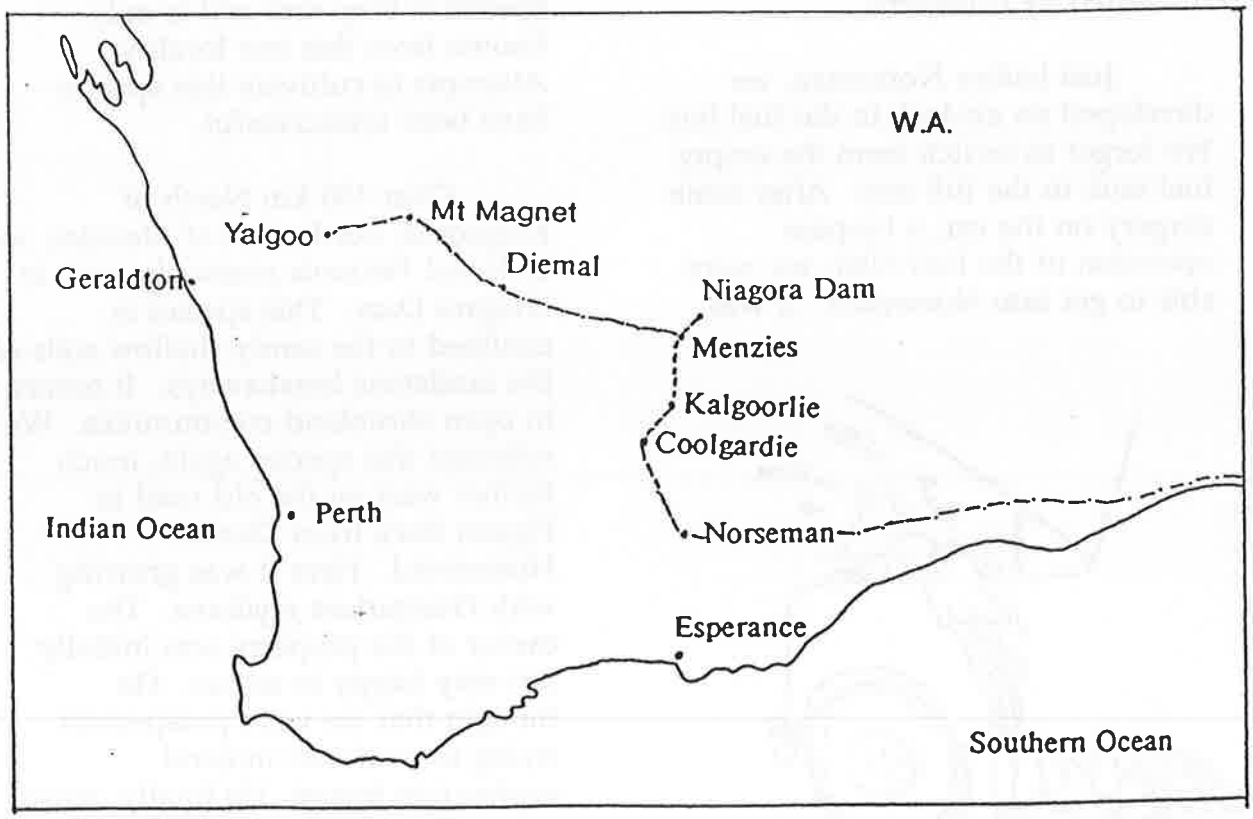
The Tea-bag and other Western Australian Labiates

Barry Conn

It is not true to say that "A botanist's life is not a happy one!" There are most certainly good times. On the 9th September 1989, I set off for field work in Western Australia with Judith Scott (also from the Royal Botanic Gardens, Sydney). This trip was to study members of the subfamily Prostantheroides (Labiatae). The genera in this subfamily include *Hemiandra, Hemigenia, Microcorys, Prostanthera, Westringia* and *Wrixonia*. We spent most of our time collecting species of the first three genera, and of course, *Prostanthera*, whenever we saw them!

I must include an aside here. A classic case of 'small things amuse small minds!' We stopped for morning tea just out of Lithgow on the first morning. When we arrived in Dubbo for lunch, we noticed the used tea-bag (from Lithgow) still sitting on the rear bumper-bar! More about that later.

We spent a day in the beautiful Gawler Rangers of South Australia. These ranges occur to the north-west of the main highway from Iron Knob to Ceduna. Here we collected *Prostanthera striatiflora* and *P. florifera* on rocky rhyodacite outcrops. The gentle climb up Mt Yardea is well worth it because it provides a splendid panorama with the Mt Yardea Homestead directly below. It



would have been nice to camp there overnight, but since we had a long distance to travel, we drove onto Ceduna. We played at being tourists across the Great Australian Bight and the famous Nullarbor - taking all the appropriate photographs and admiring all the spectacular views. At Cocklebiddy (Western Australia), we drove a few kilometres north (towards Rawlinna) and found a small clump of mallee and set up camp for the night. After the noise and confusion of city-life, the peace of a starry sky is great therapy.

On the 13 September, we tried unsuccessfully to re-collect *Prostanthera laricoides* at Newman Rock. However, we did collect *Westringia rigida* on the sandy calcareous soils. I was disappointed to visit this area again. In 1985, it was a beautiful rocky outcrop, but now it has been spoilt by the rubbish discarded by travellers.

Just before Norseman, we developed an air-lock in the fuel line. We forgot to switch from the empty fuel tank to the full one. After some surgery on the car, a by-pass operation of the fuel filter, we were able to get into Norseman. It was several days before we finally cleared the fuel-lines of air. We eventually became experts at removing air from the lines!

North of Norseman we collected *P. grylloana* in an open mallee community with a closed shrubby understorey dominated by *Acacia, Melaleuca, Leptospermum* and *Baeckea*. This species has pink-orange flowers with maroon dots inside the tube and on the lower lobe. We also found *Hemigenia eutaxioides* here.

We returned to the locality of one of my favourite species of *Prostanthera, P. splendens*. After travelling down a very dusty road we arrived and found the plants. This species occurs on a breakaway area in an open *Eucalyptus stricklandii* woodland. It occurs in shallow skeletal sandy soils with iron-stone pebbles common at the surface. This species is very rare and is only known from this one locality. Attempts to cultivate this species have been unsuccessful.

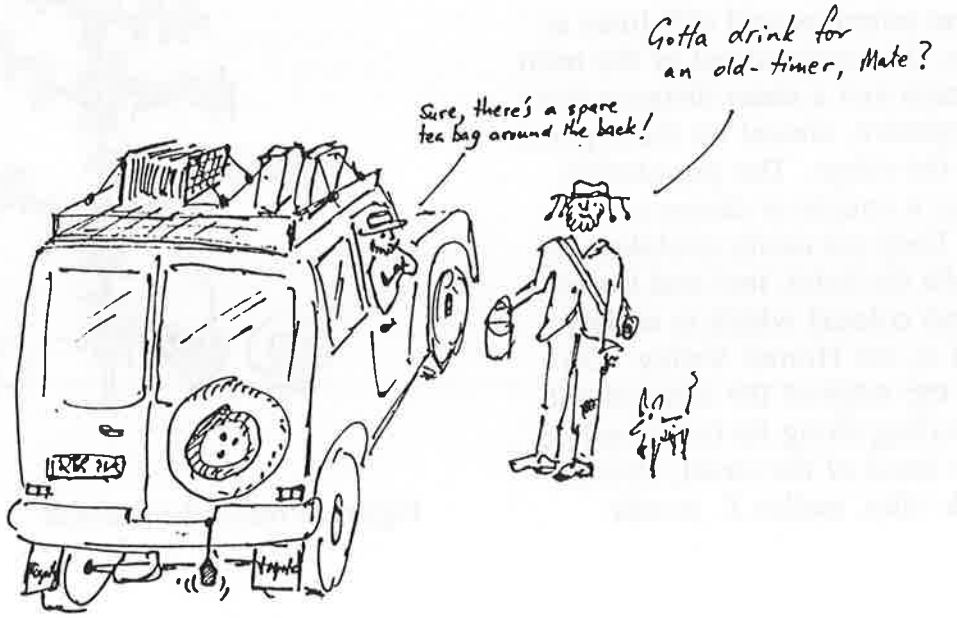
Over 100 km North of Kalgoorlie, north-west of Menzies, we collected *Wrixonia prostantheroides* at Niagara Dam. This species is confined to the sandy shallow soils of the sandstone breakaways. It occurs in open shrubland communities. We collected this species again, much further west on the old road to Pigeon Rock from Diemal Homestead. Here it was growing with *Prostanthera grylloana*. The owner of the property was initially not very happy to see us. He thought that we were prospectors trying to mark out mineral exploration leases! He finally, most reluctantly allowed us to proceed

through his property. I do not really blame him for being unfriendly, but armed with dogs and shot-gun across his knees made me think that we were somewhat vulnerable! After collecting *Hemigenia pedunculata* north of Mt Geraldine, on the Bullfinch to Diemals road, we set up camp near the south-western shoreline of Lake Barlee, south of the Homestead. The wind tried to blow us, the tent and fire away! We were finally driven into the tent to eat our dinner - some gourmet delight! Then again, I may have been Cook! It was almost impossible to press the plants that we had collected that day.

And, for those who are still interested, the tea-bag was still with us!

North of the Lake Barlee Homestead we headed NNW to Mt Magnet. At the junction of the Paynes Find to Sandstone Road we detected a faint diesel smell. After a quick investigation, I decided that it was mostly imagination and continued on. A few kilometres later, with hugh headaches developing, we stopped again. Upon opening the bonnet, I was confronted with a fine mist of diesel being sprayed all over the engine, my face and the surrounding country-side!. There was nothing that we could do to contain the leak so we drove to the next Service Station to have the problem fixed - 100 Kilometres away! Fortunately, only our headaches got worse. We stayed at the Yalgoo Pub for the night. Had a indescribable meal while entertained by a couple of locals with a guitar and great singing voices.

PART II, next issue:
Kalbarri - the elusive *Logania* and the *Westringia* that wasn't!



Two Prostantheras from the Hunter Valley

Terry Tame
NewCastle, N.S.W.

On a high ridge top of the Broken Back Range in the lower Hunter Valley grow two rare species *Prostanthera cineolifera* (Conservation Rating = 3V) and *Eucalyptus pumila* (2V). The sandstone ridge has a general north to north-western aspect and its thin sandy soils are subject to the drying winds of the summer heat. As one approaches the main stands of these plants the ridge rises, in places steeply, from the south. The vegetation is a little more lush and green here, and there occurs a few individual plants of both *P. cineolifera* and *E. pumila* scattered along the narrow top although the latter always seems to be perched near the sandstone outcrops and cliff lines at the edge. The main stand of the mint bush occurs just a short distance from the escarpment, almost on the highest point of the ridge. The population comprises a couple of dozen tall shrubs. They are easily mistaken for *P. ovalifolia* (in habit, leaf and flower shape, and colour) which is widely scattered in the Hunter Valley. On the very top edge of the escarpment, and extending along its full length is a narrow band of the small, almost whipstick -like, mallee *E. pumila*.

In the western part of the Upper Hunter Valley, amongst the gorges of the broken sandstone country surrounding the Goulburn River occur another two rare plants, *Prostanthera stricta* (2V) and *Kennedia retrorsa* (2V). They grow almost side by side along the coarse sandy banks of the main branch of a side creek. *Prostanthera stricta* is a small bushy shrub, about one metre tall, with dark green and somewhat hairy leaves. The flowers are mauve and axillary, scattered along the branchlets.

Figure: *Prostanthera stricta*

Both *P. cineolifera* and *P. stricta* have been propagated from cuttings and are now growing in the Hunter Region Botanic Gardens.

Figure: *Prostanthera cineolifera*

The question which comes to mind is: Why are these rare plants growing together in these restricted areas? Are they the relicts of more widespread populations where these sites are protected from some devastating agencies, or have the microclimates remained fairly constant over time? Or, perhaps these plants have lost much of their genetic viability and are less competitive. Perhaps these species have low seed production of poor germinability, and are thus on the decline. A less likely explanation, is that they are recently evolved species. In any case, to come across such rarities adds a further dimension to the pleasure of plant hunting in the bush.

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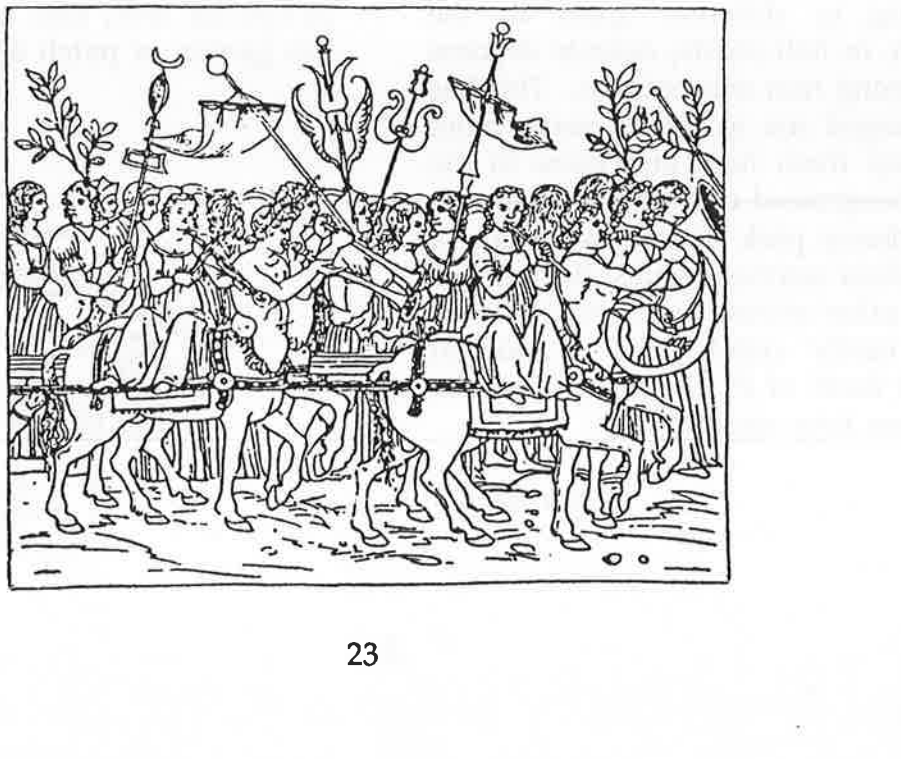

CORRESPONDENCE

Dear Brian,

I have had a fairly good flowering of mints this season, after the earlier heavy rains, although everything was rather late. This was apparently due to the lack of winter sunshine. Surprisingly, I do not think I have suffered any losses due to wet feet this time. I wonder if that is because the rain was in the winter and not the warmer months? Or was it just that all the susceptible ones have already been eliminated in the previous wet seasons?

I have two plants of *Prostanthera rhombea*, both a pink flowering form. I have found them to be very hardy and vigorous growers. Normally pink flowers of any mints have not prospered at all for me. These two are growing in different spots in the garden, in half-shade, despite dryness and strong root competition. This has encouraged me to secure some more and pop them here and there in the semi-foreground of the garden, so that their cheery pink flowers will make a nice colour contrast against the mauves of the other mints. Interestingly, they have easily outstripped a normal mauve form of *P. rhombea* planted at the same time nearby.

Roger Bagley

[I have not visited your garden for a couple of years. I can imagine that your garden will be a beauty this spring . Members should make a point of visiting it - Brian.]

*****

During the last 3-4 years I have been collecting specimens of orchids for David Jones (Canberra) and sometimes during these bush forays come across species of Prostanthera and Westringias which I can recognise a genus level but not at species. My interest in Prostantheras especially increased after reading Althofer's book 'Cradle of Incense', but am keen to become more familiar with the plants at species level and to grow them in my garden or patch of bush.

John Moye
Wardell, NSW

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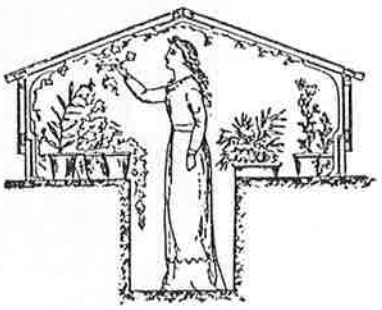


I wrote to Barry Conn and George Althofer after our recent trip to Esperance, Western Australia. I sent Barry some pressed specimens and some cuttings to George. George had wanted *Prostanthera canaliculata* for Burrendong. We were able to relocate it easily. I have been disappointed in several lots of cuttings I have taken from my original *P. canaliculata* plant, which has felt the cold but survived the winter fortunately.

Quite a few of my prostantheras cuttings did not survive. It is still a little early to make a survey, as we are still having the odd mild frost. I am still hoping for green sprouts to appear as the weather warms more. The grass has grown apace and threatens to engulf everything. As I work around clearing the plants I have noticed a lot of dead ones have split bark from the frost, so they will never come again. The wood just did not mature and harden through the glorious mild autumn and early winter - this is for all plants, not just the mints.

Before we moved up, I was a bit worried that I would find it hard to get access to a variety of plants, but I have been delighted to find that this is not so. I have already two new species of *Prostanthera* (new to me, that is)(viz. *P. decussata* and *P. magnifica*. I also have a lovely large-flowered colour form of *P. aspalathoides*.

Another worry was that I would have great trouble keeping Prostantheras happy through the summers here. The shady area is away from the house and well beyond any hose. However, my husband has worked hard clearing a creek gully that runs East-West of the house. Blackberries had made it largely impenetrable. There is a good scattered covering of trees, including quite a few young blackwoods to which I hope to add Red Cedars and other hardier rain forest types. However, these will be slow growing, if they will grow at all. In the meantime there is a lot of space for the mints that like the cooler spots. I am hoping that their oils will protect them a bit from the rabbits and kangaroos.

Barbara Buchanan
Myrrhee, VIC.

[I hate to say it, but rabbits and kangaroos seem to like Prostantheras, so best of luck! ... Barry]

*****

Thank you for the Newsletter No. 16. You are doing a great job.

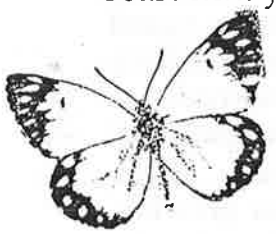
We are experiencing a very mixed year, droughty last summer, then incessant rain during the autumn and now four months without a drop of rain.

We held an "Open Day" for the garden on the 1st September 1989. A large number of visitors from far and wide visited us. They seemed to have enjoyed themselves in spite of the dry weather and patchy flower display. A number of the local ladies spent the

day showing people around.

David M. Gordon
"Myall Park"
Glenmorgan, QLD

[I hope to have time to visit you and your garden after I move to the North Coast next year - Brian.]



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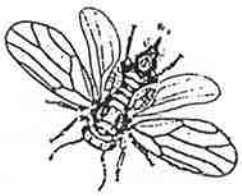

I have collected some mint bushes over the last six months, but maybe "jumping the gun" to report that all is well at the moment.

The following is a list of species planted in various conditions on our block near Gatton. Soil is sandy overlying sandstone, with small sandstone rock present. Shade is provided by large established eucalypts (viz. *E. maculata* and *E. crenulata*) and smaller acacias (*A. concurrens*).

Westringia eremicola (self-sown)
Prostanthera baxteri var. *sericea*
P. cineolifera
P. cryptandroides
P. denticulata
P. euphrasioides
P. incana
P. incisa (??)
P. lasianthos (Pink-flowered form)
P. magnifica
P. marifolia (?)
P. melissifolia
P. nivea (several forms)
P. ovalifolia
P. phyllicifolia
P. rhombea
P. rotundifolia
P. rugosa
P. saxicola (White-flowered form)
P. saxicola var. *montana*
P. scutellarioides
P. sieberi
P. suborbicularis
P. teretifolia
P. violacea

Most are doing well at this point, but need constant moisture except for a few dry-area species.

Arthur Baker
Gatton, QLD

[Keep up the good work. Your garden seems to have potential. The eucalypt cover is probably the best aid for success of any mint bush garden. From your list, *P. incisa*, is probably *P. sieberi*, *P. lasianthos* (Pink) is "Kallista Pink". The identity of your *P. nivea* (forms) and *P. saxicola* (White) should be verified. I am sure that Barry would willing try to identify them for you. I suggest that you send some flowering specimens to him for identification.

Unfortunately, the seeds of *Westringia eremicola* you sent to me never germinated. Maybe we can try again some other time - Brian.]

*****