

AUSTRALIAN NATIVE PLANTS SOCIETY (Australia) Inc.

EPACRIS STUDY GROUP

(ISSN 1038-6017)

Group Leader: Gwen Elliot, Villa 81, 72 Kangan Drive, Berwick 3806
Email - gwenelliot@optusnet.com.au

NEWSLETTER No. 39
AUTUMN 2015

Greetings to all Epacris Study Group members.

Welcome to Autumn.

Undoubtedly many readers will be familiar with the recent book entitled "SPRINTER AND SPRUMMER - Australia's Changing Seasons" written by Prof. Tim Entwisle, Director of the Royal Botanic Gardens, Melbourne.

Tim presents the thought that the four neatly defined seasons of European origin do not fit quite as neatly into the Australian climate. Australian Aborigines have held similar views for many years now, with up to seven seasons, depending on location.

The seasons outlined in "Sprinter and Summer" begin with the early '*Sprinter*' of August and September followed by the often unpredictable weather of '*Sprummer*' in October and November. Our true Summer is listed as being relevant during December to March, followed by the Autumn season in April and May, then Winter in June and July.

It is doubtful whether this approach will ever be widely accepted in our lifetimes anyway, but at least it can perhaps assist us in how we approach the seasons and our gardening practices.

Is it really autumn yet where you live, or are you still experiencing summer temperatures and waiting for the Autumn rains to arrive NEXT month ?

One thing is sure, the days are certainly getting shorter, which means a reduction in long hours of heat stress for our plants, but perhaps we still need to poke a finger in the soil to see if our plants need any supplementary watering.

Happy gardening,

Gwen Elliot

A VERY SPECIAL CONTRIBUTION TO OUR NEWSLETTER

It was a special surprise to recently receive an email from our founding leader and Honorary Life Member of the Epacris Study Group, Dr. Ron Crowden, of Tasmania, attaching his KEY TO THE GENUS EPACRIS.

We're sure all members will be delighted to have this valuable reference, as we continue to grow and study our native heaths.

Thanks so much Ron.

Ron has now retired from full time employment, but fortunately most people never really retire from pursuing an interest and passion for our native plants. . . . and there's always more to learn.

We've included below one of Ron's lovely photographs - of *Epacris myrtifolia*.



The EPACRIS STUDY GROUP to go into recess

In our Newsletter No. 31 (March 2011) the request was made for a new volunteer Epacris Study Group leader, and this has been repeated in subsequent Newsletters.

Sadly no volunteer has come forward which means that the Epacris Study Group will go into recess at the next ANPSA National Conference which will be held in Canberra, November 15 - 20th, 2015.

There are currently fifteen ANPSA Study groups in recess and requiring new leaders. They are Australian Food Plants, Australian Plants for Containers, Calytrix, Australian Daisy, Fabaceae, Isopogon and Petrophile, Indigenous Orchids, Palm and Cycad, Prostanthera and Westringia, Rainforest, Rhamnaceae, Native Succulents, Verticordia, Wetlands and Water Plants plus Wildlife and Native Plants.

The future of our Study Groups will obviously be an item for consideration at the ANPSA National Conference.

One further Epacris Study Group Newsletter will be published in October 2015.

There is no need to renew your membership to receive this final Newsletter.

**KEY TO THE GENUS *EPACRIS* Labill.
R. K. Crowden.**

No one is perfect, least of all me. If you find any problems with this key, please let me know, ron.crowden@bigpond.com.

This key has been generated using fresh specimens, with use in the field as its primary objective. However, it is quite practical to use it with dried and pressed specimens though several of the characters may become distorted during drying and require interpretation. It should be possible to observe most characters with the naked eye, but in a few cases a hand lens (say 5x) is desirable. I have deliberately avoided using features which may require the use of microscopes or other techniques which are not available to the amateur botanist, even though such characters may be extremely valuable in showing relationships between the species. The evaluation of 2 characters may be somewhat subjective, in which case the following explanations of how I interpret them may be useful.

a). When is the leaf apex pungent? A simple test is "Can you grab and hold the plant firmly without feeling discomfort? The pungent ones will provide a very definite answer very quickly.

b). Projection of the anthers above the plane of the corolla lobes (exserted anthers) either wholly or in greater part is a characteristic feature in 14 of the 29 Tasmanian *Epacris* species, as well as some mainlanders, and therefore an important feature used in this key. The character is best determined using newly opened flowers, preferably before anther dehiscence is completed, by holding the flowers at eye-level and sighting at right angles across the plane of the corolla lobes. At this stage of anthesis the anthers are vertical. Exserted anthers will be entirely above the plane of the corolla lobes. Included anthers will be entirely within the tube, or the tips barely showing. As anthesis progresses and after dehiscence, the dehisced anthers may reflex and weigh down on the lobes, forcing them to flatten and widen below the normal "knee-joint" (especially in those species eg. *E. franklinii*), where the erect, unfused bases of the lobes, extend beyond the containment of the sepals). In these cases the anthers become more exposed and "otherwise included anthers" may be misinterpreted as "exserted".

- | | |
|---|----------------------------|
| 1. Filaments free, inserted at base of corolla tube.
(Group A. formerly the genus <i>Rupicola</i>). | 2 |
| 2. Leaves ovate, cordate, apex acuminate, pungent. | <i>E. apiculata</i> . |
| 2*. Leaves elliptic to narrowly ovate, not pungent. | 3 |
| 3. Ovary pilose. | <i>E. decumbens</i> . |
| 3*. Ovary glabrous. | 4 |
| 4. Lamina pilose, ciliate. | <i>E. ciliata</i> . |
| 4* Lamina glabrous. | <i>E. sprengelioides</i> . |
| 1*. Filaments for most part adnate to corolla tube, inserted at throat. | 5 |
| 5. Corolla tube widely campanulate, the diameter at the throat equal to or greater than the length of the tube. Filaments as long or longer than the anthers, | 6 |
| 6. Filaments erect, anthers exserted. | <i>E. gnidioides</i> . |
| 6*. Filaments angled into the throat. | 7 |

Group B.

Tube campanulate, shorter than sepals, length about equal or less than the width at the throat, filaments as long as or longer than the anthers. Anthers projected inwards to the throat and appear as included.

- | | |
|---|---|
| 7. Leaves aligned in 5 distinct ranks. | <i>E. navicularis</i> . |
| 7* Leaves alternate, not ranked. | |
| 8. Leaf base cordate or broadly obtuse. | |
| 9. Leaves usually longer than 5mm, ovate, concave and stem clasping at the base, spreading above, the apex acuminate and pungent | <i>E. gunnii</i> . |
| 9.*Leaves usually less than 5mm long, mostly flat or only slightly concave, the apex acute, obtuse or a short mucro, often inturred, blunt. | |
| 10. Decumbent or low straggling shrub, leaves elliptic, apex rounded, flowers few clustered in upper axils. | <i>E. glacialis</i> . |
| 10.*. Erect or bushy shrubs, flowers many, axillary spreading down the stems in leafy spicate arrangements | 6 |
| 11. Leaves rhombic, ascending, | <i>E. microphylla</i> var. <i>rhombifolia</i> . |
| 11.*Leaves ovate, becoming patent | <i>E. microphylla</i> . |

- 8*. Leaf base cuneate or barely obtuse.
12. Leaves sub-erect or appressed to stem.
13. Leaves +/- apetiolate, the lamina appressed or the tips barely spreading, apex often inturned *E. petrophila.*
- 13.*Leaves shortly but distinctly petiolate, the lamina sub-erect.
14. Leaves generally > 5mm long, apex acuminate to acute, bracts acute.
- 14.*Leaves mostly < 5mm long, keeled below, apex obtuse, bracts obtuse..... *E. alpina.*
15. Leaves ovate to not markedly keeled, oblong-ovate, acuminate. *E. pauciflora.*
- 15*Leaves lanceolate-oblong to oblong, acute. *E. sinclairii.*
- (These last 3 species all New Zealand, 1 in New Caledonia).

- 12.*Leaves generally spreading
16. Leaf apex acuminate, pungent. *E. breviflora.*
- 16*Leaf apex acute, obtuse or a short mucro, blunt.
17. Leaves +/- rhombic or broad-elliptic, 4 – 12mm long, concave. *E. coriaceae.*
- 17* Leaves narrowly-ovate, ovate or elliptic, usually less than 5mm long, thick, prominent keel.
18. Leaves elliptic to obovate, margin thickened; peduncle short, flowers sub-sessile, erect, few clustered in upper axils. *E. celata.*
- 18* Leaves elliptic or oblong, peduncle long, the flowers sometimes pendant in short leafy spikes in the upper branchlets.
19. Lamina with a prominent thick keel; transverse ridges inside corolla tube near base *E. rigida.*
- 19*Lamina keel if evident in distal part only; no corolla ridges. *E. muelleri.*

5* Corolla tube cylindrical or narrowly campanulate, tube longer than the diameter at the throat

20 Corolla tube much longer than the sepals.

Group C.

Tube cylindrical, or narrowly campanulate, or constricted at the throat, much longer than the sepals, the diameter at the throat, less than the length of the tube, free part of filament shorter than the anther, anthers included.

This group, except *E. impressa* and *E. obtusifolia*, all endemic to NSW.

- 21 Corolla tube with 5 basal impressions. *E. impressa.*
- 21*Corolla tube without basal impressions.
- 22 Leaf apex acuminate, pungent.
23. Flowers clustered in upper axils
24. Flowers white, leaves and stem with long hairs. *E. hamiltonii.*
- 24*Flowers cream, yellow or pink/white bicoloured., *E. calvertiana.*
- 23*Flowers extending down stem in leafy spikes, or in small clusters along the stems.
25. Corollas pink or pink/white bicoloured, tube much longer than the sepals.
- 26 Lamina thick, usually < 7mm long, corolla usually < 12mm long, sepals acute. *E. reclinata.*
- 26*Lamina thin, mostly > 7mm long, corolla mostly > 12mm long., sepals acuminate *E. longiflora.*
- 25*Corollas white, tube not greatly longer than the sepals. 22
27. Leaf bases with smooth margins *E. purpurascens ssp purpurascens.*
- 27*Leaf bases with fimbriate margins *E. purpurascens ssp onosmiflora.*
- 22*Leaf apex acute, obtuse or a short mucro, blunt.
28. Lax, prostrate plant.
- 29 Corolla tube up to 7 (rarely 10)mm long, sepals c. ½ length of corolla tube, stigma c. level with anthers. *E. crassifolia ssp. crassifolia.*
- 29*Corolla tube exceeds 10mm, mostly 12-24mm long, sepals c. ¼-1/3 length of corolla tube, stigma exserted above anthers. *E. crassifolia ssp macroflora.*

28*Plant habit erect, sometimes virgate.

30. Flowers in small clusters in upper axils.

31 Sepals and bracts hirsute. *E lithophylla.*

32*Sepals and bracts glabrous

33 Corolla tube 15-20mm long, on long peduncles, pendant. *E. sparsa.*

33* Corolla tube 8-12mm long,

34 Leaves rhombic or obovate. *E. robusta.*

34*Leaves lanceolate or ovate. *E. pinoidea.*

30*Flowers extending down branches in leafy spikes, sometimes secund.

E. obtusifolia.

20* Corolla tube shorter, equal, or slightly longer than the sepals.

Group D.

Tube narrowly campanulate to cylindrical, about equal with the sepals or slightly longer, throat narrower than the length of the tube, anthers on short filaments, included.

This group, except *E lanuginosa* and *E paludosa*, all endemic to Tasmania

31. Leaf apex acuminate and pungent.

32. Leaves reflexed, margins +/- entire, non-hyaline, the mid-rib

prominent abaxially, corolla caduceus. *E. apseyensis.*

32* Leaves +/- straight, margin hyaline at least in part, 3 - 5 - (7) veins
conspicuous abaxially, dead corollas persist on the plant.

33. Style long, swollen in middle, stigma amongst anthers or exserted.

34. Style hirsute at centre, sparse hairs inside corolla tube. *E. lanuginosa.*

34*.Style and corolla tube glabrous. *E. paludosa.*

33*.Style short, stigma below anthers.

35 Sepals and bracts glabrous. *E. heteronema ssp. heteronema.*

35*.Sepals and bracts hirsute. *E. heteronema ssp. gigantea.*

31*Leaf apex obtuse, shortly mucronate or acute but not pungent.

36. Bracts and sepals brown, shiny, harden in aged flowers. *E. corymbiflora.*

36*Bracts and sepals green-white, pink-tinged or pink-striate.

37 Leaves lanceolate, margin entire. riverine plants.

38 Style short, the stigma below or at the base of the anthers. *E. mucronulata.*

38*Style long, the stigma at the top of the anthers, or exserted *E. franklinii.*

37*.Leaves ovate, oblanceolate or obovate, the margin hyaline at least in part.

39 Style very short, the stigma about midway up the tube, or below; lowland
plant of sedgeland-heathland and associated scrub in the west of
Tasmania between the Pieman and Arthur rivers. *E curtisiae.*

39*Style longer, the stigma may reach the base of the anthers; occurs
statewide in Tasmania in montane heath communities *E. serpyllifolia.*

Group E

Tube narrowly campanulate, more or less equal with the sepals, throat narrower than tube length, anthers on long filaments, exserted.

This group, except *E. pulchella*, all endemic to Tasmania.

40. Style short, the stigma included within the corolla tube.

41. Leaves with a distinct hyaline margin

42. Leaves crowded, broadly lanceolate tapering to a fine point, grey-green,
striate below; flowers numerous and densely clustered at the ends of the
branches, partly hidden by the leaves, the stigma about mid way up the
corolla tube. *E. marginata.*

42*Leaves more open and spreading than above, ovate, shortly acuminate,
dark green, not conspicuously striate abaxially; flowers numerous often
extending well down the branches, emergent from the leaves, the stigma
near the corolla throat. *E. limbata.*

41*Leaf margin not hyaline.

43. Sepals and bracts hirsute. *E. grandis.*

43*.Sepals and bracts glabrous. *E. myrtifolia.*

40*Style long, the stigma exerted, at the top of or above the anthers.

44. Leaf base broadly obtuse or rarely cordate, lamina concave and stem clasping near the base, straight and +/- spreading above. ***E. acuminata.***
- 44*.Leaf base narrowly obtuse or truncate, the lamina +/- flat or slightly concave but not stem clasping, spreading.
- 45 Filaments ca. ½ to as long as the anthers, usually only the top half of the anthers exerted above the plane of the corolla lobes.
- 46 Flowers white, sometimes lilac, mostly spaced and extending down branches in leafy spikes. ***E. pulchella.***
- 46*Flowers always white, in terminal clusters or in short dense heads.
47. Sepals and bracts hirsute. ***E. barbata.***
- 47* Sepals and bracts glabrous. ***E. cerasicollina.***
- 45*.Filaments longer than the anthers which are wholly exerted above the lobes

The species below are all endemic to Tasmania and collectively are spread over most the state, although rare in the west. Whereas in most cases the following key will allow identification of separate forms, the members of this set are closely related in morphological features which frequently overlap to a degree which can make resolution difficult. There may be a case for grouping them as a single "super species" (E. exserta R.Br.), with a series of sub-forms (ecomorphs) relating to the substrate on which they occur, thus-

E. exserta – riverine, restricted to larger rivers in the north, the South Esk, North Esk, St Patricks, and Supply, all of which flow into the Tamar estuary.

E. virgata – silty or clayey sands, at low altitudes near rivers and creeks from serpentines and dolerite, in the north on both sides of the Tamar Estuary, and in the south between Hobart and Huonville, on Bruny Is, coastal lowland, south of Orford, and the Tasman and Forestier Peninsulas.

E. moscaliana – mostly riverine, in the upper faster flowing reaches of the St. Pauls and Nile rivers, or in seepages on exposed rock, or damp shallow soil at marshes and inflows to these rivers, and on the Gog Range.

E. glabella – rare on serpentine outcrops in the west and on exposed rock at the Second Splits of the Gordon R.

E. graniticola – on granite mountains of the northeast, on elevated shaded slopes often in seepage on exposed rock.

E. tasmanica - dolerite areas of the southeast, south of Triabunna and onto the Forestier Peninsula.

E. stuartii – coastal, in salt spray zone., rare on the south coast.

48. Leaf apex acuminate, pungent.
49. Leaves lanceolate, recurved in the upper part, apex acuminate, pungent. ***E. tasmanica.***
- 49*Leaves elliptic – ovate to obovate, flat, the apex barely pungent. ***E. stuartii.***
- 48*Leaf apex acute, obtuse or a short mucro, not pungent.
50. Leaf margins thickened, maybe scabrous, often with scattered hairs over adaxial surface
51. Lamina lanceolate 4 – 6 – (8)mm long, recurved ***E. graniticola.***
- 51*Lamina (lanceolate) – ovate – oblanceolate, usually less than 3mm long, straight. ***E. moscaliana.***
- 50*Leaf margins unthickened, microserrulate, adaxial surface glabrous or sparse hairs near the petiole.
52. Leaves elliptic – lanceolate or narrow oblong, 6mm or longer, the apex a blunt, usually inturned mucro. ***E. exserta.***
- 52*Leaves lanceolate – ovate, ovate, rounded or obovate, mostly less than 5mm, the apex obtuse or a short, blunt mucro.
53. Flowers typically in long, open, spicate arrangements extending for many cms. down the main stems and branches, or more rarely in denser clusters at the ends of the minor branches, young branchlets hirsute ***E. virgata.***
- 53*Flowers in small clusters at the tips of the main stems or on short axillary branchlets, young branchlets glabrous. ***E. glabella.***