

ASSOCIATION OF SOCIETIES FOR GROWING AUSTRALIAN PLANTSMELALEUCA AND ALLIED GENERA STUDY GROUP

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Dear Member,

By the time you receive this Christmas will have come and gone again. Why does the interval between one Christmas and the next seem to get ever shorter? I hope you and your families enjoyed a happy Christmas and that 1998 brings you health and happiness.

The weather here has warmed up significantly. We need a bit of rain now but over the past few months we have fared fairly well for rain. Although individual falls have not been extensive, they have kept the soil moist and have kept everything, including weeds, growing very nicely.

At the time of writing this the fine-leaved form of *Melaleuca leucadendra* is flowering very heavily. These trees are used fairly extensively as street trees in Brisbane and are suitable for this as they exhibit a weeping form and generally don't grow as large as the broad-leaved form of the same species. We recently drove around an extensive new housing development area on the northern side of Brisbane and it was interesting to note that the majority of street and footpath trees, some hundreds in number, were the fine-leaved form of the *M. leucadendra*. Flowers of this species are about 100-150 mm long with a diameter of around 30-40 mm. Colour is creamy-white and they have a strong, almost overpowering, perfume.

Most Callistemons flowered well around Brisbane during spring with a few exceptions. Our *Callistemon 'Firebrand'* didn't produce any flowers, whereas in previous years it has flowered quite well. It now gets a little more shade in the late afternoon, so maybe it doesn't like that. Most of the *Leptospermums* flowered well in late spring and some are producing another flush of flowers now.

Revision of Melaleuca

Brief details of new taxa and new combinations in *Melaleuca* are given below. Should full descriptions be required please let me know and I will forward photocopies to you. Copies of drawings showing characteristics of the various species referred to in this newsletter are attached.

"New Taxa and New Combinations in *Melaleuca* (Myrtaceae)

L.A. Craven and B.A. Barlow

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Melaleuca cajuputi subsp. *cumingiana* (Turczaninow) Barlow.

Melaleuca cajuputi subsp. *cumingiana* shows minimal overlap with the nominate subspecies in its diagnostic characters. Its leaves are wider, giving it an elliptic to ovate leaf shape, and the staminal bundle claw is consistently longer. In view of their overall similarity, and their disjunct natural distributions, they are accorded subspecific rank.

Melaleuca cajuputi subsp. *cajuputi* has been extensively cultivated in plantations for cajuput oil production, within the natural range of subspecies *cumingiana*. This may cause some confusion in the identification of specimens. Some intermediate plants may be hybrid derivation.

Melaleuca cajuputi subsp. *platyphylla* Barlow.

Shrub or tree to 30 m tall; trunk bark papery. Branchlets with moderately dense, relatively long, appressed to (mostly) spreading pubescent hairs. Leaves 45-140 mm long, 15-50 mm wide, 1.3-6.5 times as long as wide; petiole 5-15 mm long; blade with dense, appressed, sericeous hairs, elliptic, narrowly elliptic, or rarely very narrowly elliptic, the veins 5-9 and parallel. Inflorescence a spike of 8-17 triads, up to 28 mm wide; rachis pubescent. Hypanthium pubescent or puberulous, cup-shaped, 1.5-1.7 mm long, 1.7-2.5 mm wide. Sepals deciduous, glabrous on the abaxial surface, 1.1-1.5 mm long, herbaceous in the proximal-central zone and scarious in a broad marginal band, the band 0.2-0.5 mm wide. Petals 2.3-2.5 mm long, the glands circular, oblong or linear (sometimes with two very long linear glands appearing to be striations). Stamens 8-13 per bundle; filaments white, cream, or variously yellow- or whitish- green, 9.2-10 mm long, the bundle claw 1.1-3.5 mm long. Fruiting hypanthium cylindrical or cup-shaped, 2.1-2.8 mm long, 2.9-3.7 mm wide. Seed 0.7-1 mm long, the cotyledons subobovate (almost planoconvex).

Distribution and habitat. Indonesia (southeastern Irian Jaya), Papua New Guinea (southern Papua, especially the Trans Fly area), Australia (northeastern Queensland). Occurs in lowland swamp forest, open forest on sandy soil, *Melaleuca* savanna swamp-monsoon forest ecotone, river banks adjacent to rainforest, *Melaleuca* swamp savanna on dark mottled clay, in *Ischaemum-Leptocarpus* grassland with scattered low trees and *Pandanus*, on salty swamps and mud flats at back of mangroves, and on clay pans.

Melaleuca cajuputi subsp. *platyphylla* does not differ as sharply from the typical subspecies as does subspecies *cumingiana* but has generally wider leaves, usually more stamens per bundle, and mostly a longer claw. It represents a disjunct eastern differentiate of the species, usually growing in more humid situations.

Melaleuca clarksonii Barlow, sp. nov.

Tree to 10 m tall; trunk bark hard and longitudinally fissured (sometimes papery). Branchlets with short, appressed, sericeous hairs. Leaves 30-110 mm long, 7-30 mm wide, 3.3-9 times as long as wide; petiole 3-6 mm long; blade with short, appressed, sericeous hairs, narrowly elliptic, elliptic, narrowly obovate, or obovate, the veins 5-9 and parallel. Inflorescence a spike of 9-15 triads, up to 18 mm wide; rachis minutely sericeous. Hypanthium glabrous to subglabrous (rarely with a few scattered puberulous hairs), cup-shaped, cylindrical, or funnel-shaped, 1.4-1.8 mm long, 1.3-2 mm wide. Sepals persistent (at least until the immature fruiting stage), glabrous on the abaxial surface, 0.7-1.2 mm long, herbaceous in the proximal-central zone and scarious in a narrow marginal band, the band 0.1-0.2 mm wide. Petals 1.5-2.5 mm long, the glands circular to elliptic. Stamens 6-9 per bundle; filaments creamy-white, 6-7 mm long, the bundle claw 1.5-3 mm long. Fruiting hypanthium cup-shaped, bowl-shaped, or depressed subglobose, 2-3.5 mm long, 3-3.8 mm wide. Seed 1.1-1.5 mm long, the cotyledons obovate.

Distribution and habitat. Western side of Cape York Peninsula, Queensland. Occurs in seasonally flooded situations on silty clay soils, often on the margins of swamps and waterholes, in woodlands or open forests and sometimes forming more or less pure stands.

Melaleuca clarksonii apparently was first collected in 1966. The species can be recognized immediately when possessing hard bark as it is the only member of the broad-leaved paperbarks, to

which it belongs, to have this feature. Otherwise, the extremely small flowers together with leaf shape and form are diagnostic.

Melaleuca fluviatilis Barlow, sp. nov.

Shrub or tree to 30 m tall; trunk bark papery. Branchlets variably indumented, usually with longish, straight hairs overlying short, often crisped hairs, or sometimes with ascending to spreading pubescent hairs overtopping short lanuginulose-puberulous to lanuginulose hairs, or sometimes with scattered longish pubescent hairs overlying short, appressed puberulous hairs. Leaves 45-180 mm long, 5-19 mm wide, 5-20 times as long as wide; petiole 4.5-12 mm long; blade variably indumented, usually with scattered appressed to ascending longish pubescent to sericeous-pubescent hairs overlying dense lanuginulose hairs, or sometimes with a denser covering of appressed pubescent to sericeous-pubescent hairs overlying lanuginulose-puberulous hairs, or scattered longish appressed pubescent hairs overlying appressed puberulous hairs, narrowly elliptic, very narrowly elliptic, or narrowly obovate, the veins 5-7 and parallel. Inflorescence a spike of 8-18 triads, up to 40 mm wide; rachis lanuginulose-pubescent or puberulous. Hypanthium puberulous to pubescent, or lanuginulose-puberulous to lanuginulose, cup-shaped to funnel-shaped, or cylindrical, 1.3-2 mm long 2-2.8 mm wide. Sepals usually deciduous (to persistent at least until the immature fruiting stage), hairy (puberulous to pubescent and lanuginulose-puberulous to lanuginulose) or glabrescent on the abaxial surface, 0.6-1.5 mm long, herbaceous in the proximal-central zone and scarious in a broad marginal band or herbaceous to (or almost to) the margin, the band 0-0.5 mm wide. Petals 1.5-3.5 mm long, the glands elliptic, linear, circular, or subcircular. Stamens 3-9 per bundle; filaments mostly green, sometimes cream, white or yellow, 10-19 mm long, the bundle claw 0.5-2 mm long. Fruiting hypanthium cup-shaped, bowl-shaped, cylindrical, or barrel-shaped, 2.5-4 mm long, 3.2-6 mm wide. Seed 0.9-1.2 mm long, the cotyledons obvolute.

Distribution and habitat. Eastern Cape York Peninsula and the central-coastal area of Queensland, Australia. A typical rheophyte, it occurs along stream lines on light soils.

Blake's (1968) circumscription of *M. argentea* includes the present species. *Melaleuca fluviatilis* differs from *M. argentea* in having longer stamens that are more strongly coloured (usually green), and in the form of the leaf hairs (Barlow and Forrester, 1984 [1985]). The two species have similar habitat requirements (stream beds and banks), and a narrow contact zone in Cape York Peninsula (Barlow, 1988). There is no evidence of intergradation, and Barlow considered them to be sister species.

In inflorescence characters *Melaleuca fluviatilis* closely resembles *M. nervosa*, which is sympatric with both *M. argentea* and *M. fluviatilis*, but *M. nervosa* occurs predominantly in open monsoon woodlands away from watercourses. Byrnes (1986) accordingly treated some of the populations here placed in *M. fluviatilis* as *M. nervosa* f. *pendulina*. *Melaleuca fluviatilis* differs sharply from *M. nervosa* in vegetative characters as well as in ecological requirements. The new entity is as sharply distinct as other species of the *M. leucadendra* species complex, and maintains its identity in sympatry; it is accordingly given specific rank. As the taxonomic concept embodied in the above circumscription of *M. fluviatilis* differs considerably from that adopted by Byrnes (1984, 1986) for *M. nervosa* f. *pendulina*, and as the epithet "*pendulina*" can be applied to many species of the broad-leaved paperbarks, the opportunity has been taken to give the plant a more appropriate epithet now that it is recognized at the species level. Additionally, the epithet "*pendulina*" was used in the nomen nudum, "*Melaleuca pendulina* Loddiges ex Loudon" (Loudon, 1830), and, although it appears that the name has not been published validly since, it is prudent to use a different epithet.

Melaleuca squamophloia (Byrnes) Craven, comb. et stat. nov.

Byrnes (1986) noted that *Melaleuca stypheloides* var. *squamophloia* is, in many respects, intermediate between *M. bracteata* F. Mueller and *M. stypheloides* Smith sensu stricto and could be a hybrid. The plant, however, occurs at localities at which neither of the putative parents is found and appears to have its own geographic range. It is characterised relative to *M. bracteata* and *M. stypheloides* sensu stricto by the combination of features given in Table 2 (these included bark, leaf blade vein number, stamen number per bundle, ovule number per locule and cotyledon form). Although its origins may have arisen in a past hybridization event, the taxon is a distinct entity and

accordingly is recognized as a separate species.

Melaleuca stipitata Craven, sp. nov.

Shrubs or trees to 4 m tall; trunk bark papery, \pm tightly held. Branchlets glabrous. Leaves 18.5-75 mm long, 0.8-2.5 mm wide, 9-70 times as long as wide; petiole 0.8-2.5 mm long; blade glabrous, the veins 3 and parallel. Inflorescence a spike of 3-10 triads, up to 15 mm wide; rachis glabrous. Hypanthium distinctly stipitate, effectively glabrous (a few puberulous hairs present at the base of the stipe), funnel-shaped, cup-shaped, or campanulate, 1.2-2 mm long, 1.2-1.6 mm wide. Sepals glabrous on the abaxial surface, 0.3-0.8 mm long, herbaceous in the proximal-central zone and scarious in a narrow marginal band, the band 0.1-0.2 mm wide. Petals 1.5-1.8 mm long, the glands circular to elliptic. Stamens 7-14 per bundle; filaments white, 4.5-6 mm long, the bundle claw 1.7-3 mm long. Fruiting hypanthium cup-shaped or cylindrical, 2.2-3 mm long, 2-2.6 mm wide. Seed 0.6-0.8 mm long, the cotyledons planoconvex.

Distribution and habitat. Upper South Alligator River area of the Top End of the Northern Territory. Woodland on shaley NW-facing hillside.

Melaleuca stipitata presently is known from one population only, although it can be expected to occur on similar shale country elsewhere in the upper South Alligator River area. The species apparently is unique in the genus insofar as the stipitate hypanthium is concerned. Despite their having capitate inflorescences, the closest allies of *M. stipitata* are *M. acacioides* F. Mueller, *M. alsophila* A. Cunningham ex Benth and *M. citrolens* Barlow. The three latter species also possess smallish leaves and small white flowers, the most obvious difference being that they have flowers in heads. The basic floral unit in *M. acacioides* and *M. stipitata* is a triad, whereas in *M. citrolens* and *M. alsophila* it is a monad and dyad, respectively."

Protection of a *Melaleuca irbyana* Community.

The article reproduced below, with the kind permission of the Ipswich City Council, outlines the investigation etc. leading to the protection of a significant area of *M. irbyana* at Purga, a district just to the south-west of Ipswich off the Cunningham Highway.

"*Melaleuca irbyana* and forest red gum communities - Ipswich City

Ecological status.

Melaleuca tamarascina subspecies *irbyana*, swamp tea tree is a Vulnerable Regional Ecosystem restricted to small areas in southern Queensland near Ipswich and Beaudesert, and near Casino in northern New South Wales.

Swamp tea tree usually grows in dense colonies that form a distinctive habitat. Colonies occur on cracking clay soils on level ground in slightly elevated areas that become seasonally saturated because of a perched water table.

Swamp tea tree is a very rare form. Thomas and McDonald (1987) compiled an official Queensland Herbarium list of rare and endangered plants in Queensland and noted: "We have not attempted, at this stage, to review the status of subspecies or varieties. It should be noted however that many of these infraspecific taxa have extremely restricted natural distributions and are under threat, for example *Melaleuca tamarascina* subsp. *irbyana*."

The Queensland Herbarium records indicate that Ipswich City probably contains over 50% of the entire population of *Melaleuca irbyana*. It is thought this species was once far more widespread in Ipswich with existing remnants representing less than 30% of original cover (Guymer, G. pers. comm.). The remaining communities are small, fragmented and isolated, often regrowth, subject to overgrazing and fires and located within an area dominated by an agricultural setting, surrounded by a cleared highly modified landscape.

A Conservation Assessment of the SEQ region (Young and Catterall, 1993) identified *Melaleuca irbyana* as 'a species of a special interest that is poorly conserved'. Its state wide distribution was also regarded as being sufficiently reduced to warrant consideration for inclusion on the Department of Environment's list of Rare and Threatened Species. All *Melaleuca*, tea tree remnants not protected in reserves in SEQ are expected to be lost in the next 8 years (Sattler, G. pers. comm.).

The Queensland Herbarium have recently begun assessing infraspecific taxa (subspecies, varieties etc.) for listing under the Nature Conservation Act. Ipswich City Council has approached the Herbarium with a view to listing *Melaleuca tamarascina* subspecies *irbyana*. This has been successful with the species expected to be proposed for listing as a susceptible species which forms 'a significant component of an endangered community or ecosystem'.

The conservation assessments and reports outlined above indicate that *Melaleuca irbyana* communities are highly significant at the local, regional and state level.

Summary of ecological status *Melaleuca irbyana*:

- * Restricted to Ipswich, Beaudesert and Casino;
- * Under threat due to restricted natural distribution;
- * A species of special interest that is probably not protected in a conservation reserve;
- * Estimated 70% cleared in Ipswich;
- * 95%+ on freehold land in Ipswich;
- * Remaining remnants are small, fragmented, isolated and often regrowth subject to overgrazing and fires and located within an area dominated by an agricultural setting, surrounded by a cleared, highly modified landscape.

Conservation values

Melaleuca irbyana, swamp tea tree thickets have the following conservation values:

- * They represent an endangered vegetation type;
- * They provide habitat for a variety of small birds;
- * They provide protected nesting sites for many birds;
- * They provide a diverse range of native herbs.
- * They contain a milkvine, *Marsdenia coronata* (S3 Vulnerable) NCA 1992.
- * They may be an important habitat for frogs.

Threats

In the Ipswich area 95%+ of *Melaleuca irbyana* remnants are located on freehold land. A range of threats exist including:

- * Rural residential development;
- * Inappropriate land management techniques (overgrazing and overburning);
- * Clearing for 'improved pasture';
- * Extractive industry;
- * Other development.

A land use suitability study of Tea Tree Clays conducted by the Department of Primary Industries found: "These soils are not suitable for agricultural development. If vegetated, these areas are useful as wildlife reserves/corridors or buffer zones. Swamp tea tree has a restricted distribution in SE Queensland and remnants have high conservation value.

Despite these findings, the Tea Tree Clays of the Bremer Basin supporting *Melaleuca irbyana* are used extensively for grazing and agricultural practices."

The additional notes below were prepared by Arnold Reick, Secretary of Ipswich Branch of S.G.A.P., and member of M. and A.G.S.G..

"Early in 1997, the Ipswich City Council had an opportunity to purchase a property at Middle Road, Purga. This property has a very large community of *Melaleuca irbyana*, and this is the only patch of *Melaleuca irbyana* that is now protected by any form of government.

In November a Green Corps group under the guidance of the Ipswich City Council started work on the property. Council staff have established a good gravel road on the edge of the property to a recently finished house, which will be used as an education centre. The Green Corps are building a raised walk through part of the habitat, and establishing a dam for aquatic plants.

Years ago, Middle Road, Purga, had lots of *M. irbyana* as roadside vegetation. It's all gone today. On one side of the road SEQEB removed all vegetation as powerlines were installed. On the other side of the road Telecom (Telstra today) put in underground telephone lines. Our semi-government bodies have a lot to answer for.

Along Coopers Road, Willowbank, a few km from Middle Road, the Idemitsu Coal Mine cleared several Hectares of *M. irbyana* as they mined for coal. Objections to mining swamp tea tree areas was considered irrelevant in the Mining Warders Court.

In a good season the communities of *M. irbyana* are an ideal habitat for dozens of small native herbs. Ipswich S.G.A.P. has a comprehensive plant list of one such community at Champions Way, Willowbank."

Melaleucas Carry on the Show.

The following article was published in the S.G.A.P. Victoria journal and is reprinted here with the kind permission of the author, Mrs Barbara Buchanan, Myrree, Vic..

"After the wet winter we have had the most colourful spring display since we came to live here in the North-East some 7-8 years ago. From what friends tell me even town gardens which get watered have also done better than usual but perhaps they do not also have more blackberry seedlings than ever before. Left to themselves they would be engulfing the house and garden in no time.

Now, between Xmas and New Year, the spring flush is a pleasant memory, the pasture grasses have gone to seed and the paddocks browned off, but *Microlaena stipoides* the native weeping grass stays fresh and green and given the odd summer shower will stay so. Colour in the garden is carried on by the *Melaleucas*, some of which had contributed to the earlier glory, and there are other plants also flowering now, but the *Melaleucas* are starring. Pride of place goes to *M. 'Wongamine'* about .8 x .5 m with fine grey dusty foliage contrasting well with brilliant deep pink flowers, each bundle about 2cms long at the tips of the stems and themselves tipped with gold. I'm sorry I can't name the colour to give you some of the excitement it creates or to help distinguish it, as the description could fit so many *Melaleucas*, say *M. holosericea* except that the flowers of 'Wongamine' are much bigger and brighter. They are not nearly as big as those of *M. macronychia* - the first year it flowered I felt it must have been a *Callistemon* so big are the brushes. This is just starting to bloom now but given a bit of rain will continue until winter. Every year there are more flowers on my plants and I think this applies to a lot of *Melaleucas*, they need a few years to start flowering but once started the display seems to get better year by year, weather permitting.

The various Snow in Summer plants are doing their thing. *M. linariifolia* and its dwarf form and *M. alternifolia* which is similar in leaf, but a softer green and in flower, but larger and a brighter white [what washing powder does it use?] and with a pleasant perfume. Years ago I fell in love with a tall columnar, dark green *M. linariifolia* in the Royal Botanic Gardens [Melb] but I seem to have a different paler leaved and more rounded form.

Plants generally flower later with me than elsewhere and some species have their buds destroyed by frost so that their effect is spoiled or completely lost. I don't think this happens with the *Melaleucas*. if they take the frost they flower, but some have been difficult to establish, needing older plants with ripened wood most years and frost-bite may still spoil their shape. *M. acerosa* is one of these, it was originally gracefully weeping but burning of the tips over the last few years is turning it into a ball-

headed plant. The yellow buds are opening now to creamy flowers, *M. laterita* is also starting, but *M. spathulata* has been at it for some weeks.

M. thymifolia spreads its flowering season too, following the slow to start pattern, but now that I have seen a few good years I have put in a row and a clump of mixed sizes and colours, standard purple, white, bright pink 'Cotton Candy', and pale 'Pink Lace'. For a completely different shape *M. teretifolia* is an open tall bush which has bright white flowers on the old wood and which I hope to ultimately have as a small umbrella. I am still trying to get its colour form 'Georgina Molloy' to perform properly for me and add its red/pink to the show.

The value of *Melaleucas* is not confined to their flowers. I grow quite a few for their shapes and foliage such as a row of *M. micromera* which I hope will soon fuse together as the middle row of three species lining the drive. I chose *M. alternifolia* sight unseen from the Seed Bank because of the shape shown in Holliday's book on *Melaleucas*. *M. laxiflora* chosen at the same time for its flower colour, has an unusual bluey-purple look to its foliage and [so far] attractive arching branches. *M. blaeriifolia* grows as a tangle of inter-twining white stems with small dark green leaves whereas *M. longistaminea* and forms of *M. violacea* grow as flat table tops. One day I would like to replace an area of grass with an area of flat topped shrubs interwoven like a tapestry.

Just for fun I put in a couple of *M. armillaris* 'Green Globe' to see if it was possible to create something that would perform like English Box in a formal setting. I could not claim that an exotic gardener would use them as a substitute but I rather like my bright green balls. Maybe the frost helps them stay small, I clip occasionally, but they remain on sufferance - if they fail to perform they are out quick smart. The response to pruning is another of the *Melaleucas'* virtues, tip pruning from planting is the ideal, but *Melaleucas* will stand heavy pruning even coppicing to the ground. There is no need for them to become straggly and full of old dead looking wood. With over 200 species, let alone forms and varieties, all shapes and sizes occur including many small neat shrubs. Above all I value their ability to maintain their appearance during drought."

Melaleuca - the forgotten bottlebrush.

The following article was originally published in "Australian Garden Guide" and is reprinted here with the kind permission of the author, Mr R. Page, vice-president of S.G.A.P., NSW Ltd..

"While great interest has been shown in the development of hybrid callistemons and their showy flowers, another species of the myrtle family, Melaleuca, second largest to eucalypt, produces a profusion of spectacular flowers.

More commonly known as paperbarks and honey myrtles, these plants have many vivid colours which range from white to green and yellow and from light pinks and purples to darker hues of orange, red and violet. The plants will grow successfully throughout Australia in sunny positions on well drained acidic moist soils. Some will sustain dry periods while some of the smaller W.A. varieties do not like the more humid tropical summer conditions.

The plants differ from callistemons (bottlebrushes) mainly in the structure of the flowers and leaves. In callistemons the fine thread-like stamens with their golden anthers, the showy part of the flowers, are all free and separate around the edge of the individual flowers which make up the brush. In Melaleuca, the stamens are gathered into five distinct bundles. Brushes, (*M. decussata*) are not the only flower arrangement. Some have tight globular terminal bundles of flowers (*M. filifolia*), while others produce a claw, (*M. linariifolia* and *M. pulchella*).

The flowers can appear at the end of new growth, or can appear as new spikes inside the plant. Most spectacular are those which flower on old wood and cluster for 30-50 cm up the stem *M. wilsonii*, *M. suberosa*).

The foliage, too, is quite different from a callistemon.

Some, such as *M. quinquenervia* appear similar, but do not have a central mid-rib which is typical of all

callistemons. In Melaleuca, the pattern of veins tends to be parallel while there is a great variation in leaf size, shape and colour. As a result, many different textures are available for use as contrast in the garden. The tiny silver grey leaves of *M. incana* have been employed for many years. *M. diosmifolia* and *M. hypericifolia* have often been used in floral arrangements for both texture and colour.

Plant size and shape are also quite varied. Some are huge trees, such as *M. argentea*, which grows to 20 m. Its narrow lanceolate leaves with their silvery appearance accentuate its weeping habit and papery bark. *M. squarrosa* is a tall, erect dense shrub growing to 6 m (from south eastern coastal regions) whose cream flowers contrast with its bright green foliage. Other plants are dwarf procumbent ones which have attractive ornamental features. *M. incana* "Velvet Cushion" grows to a small round dome up to 1 m, while varieties of *M. violacea* can grow in a circular fashion close to the ground. In spring the display of purple claw flowers is magnificent.

The variation is endless and the careful choice of plants for your situation is most important to achieve the effect you desire. The right Melaleuca can be found for most sunny situations. In cultivation, the species has a long history. East coast species were introduced into England in the 1790's. *M. nodosa*, *M. hypericifolia*, *M. thymifolia*, *M. decora* and *M. stypheloides* were among the first. Western Australian species *M. fulgens* and *M. striata* were not introduced until the late 1800's. All were highly prized as ornamentals. The essential oils derived from their leaves were also highly prized. The Dutch knew of cajuput oil from the six or so species which grow on the islands around Australia. Other varieties of the oil are valued in the perfume industry. Tea tree oil production began in the 1920's and has proved to be a highly effective germicide. *M. leucadendra*, *M. alternifolia*, *M. bracteata* and *M. linariifolia* are the plants chiefly concerned with this industry.

The common name for this type of Melaleuca is 'paperbark', from which the species derives its name. The Greek *melas* means black and *leucos*, white. The name was given because the tree's trunk was usually blackened by fire while the upper trunk remained white and papery. The bark is often used for artistic purposes and for lining hanging baskets. The long strips of bark have good holding properties.

Paper barks occur often in swamps and estuaries in coastal situations. They are usually huge trees which grow in dense populations and are usually salt tolerant and extremely hardy. Thus they are useful trees for street and park planting. They can be used to drain excess water and form great wind breaks. Their use in environmental planting is quite significant. *M. quinquenervia*, *M. leucadendra*, *M. stypheloides*, *M. cuticularis*, *M. linariifolia* and *M. armillaris* are all huge trees excellent for this purpose. For exposed coastal areas *M. nesophila*, *M. thymoides* and *M. pentagona* var *latifolia* are most suitable. *M. halimiflorum* and *M. cuticularis* are excellent salt resistant plants in waterlogged soil.

The honey myrtles usually have the most attractive flowers. They produce great amounts of nectar, vital to the animal and bird populations of Australia. Insects particularly like the cream to yellow flowers. The honey myrtles tend to grow in depressions or crevices where the moisture supply is adequate. They can be found in a wide range of habitats throughout Australia, from acid conditions, to rock outcrops, and heathlands. The plants tend to be medium growing shrubs to low growing dwarf plants particularly from Western Australia. Some of the more spectacular flowering plants are *M. gibbosa*, *M. radula*, *M. coccinea*, *M. megacephala* and *M. oldfieldii*.

As you can see, Melaleucas adapt to a wide range of conditions. In full sun they flower prolifically but will also succeed in dappled shade. They succeed best in slightly acidic soil and will tolerate prolonged wet and dry periods. Some WA species from the heathlands, though, do not like frequent wet periods. To keep plants bushy and covered in flowers, they should be pruned regularly. Moderate pruning meets with best success, but some plants may be cut back quite heavily. The best time to prune is during or after flowering.

Insects are not usually a major problem, but webbing caterpillars can become a nuisance and should be treated early before the colony becomes established. Melaleucas need only light fertilising with slow release fertiliser. Once plants become established, regular watering is often quite unnecessary."

Weather in Great Britain.

Jeff Irons forwarded the following article about the weather at Ness Gardens which are situated near Heswall on the west coast of England. It is of interest to note that, in some parts of Great Britain, the weather records date back to the 1600's. It is also of interest to note that isotherms run east-west in summer with the result that summer temperatures in the north are lower. Winter isotherms run north-south with the result that the western side of England can be a couple of degrees or so warmer than the eastern side. Thought this might make us appreciate our beautiful weather here in Australia.

WEATHER RECORD 1996

	Mean Max°C	Mean Min°C	Rainfall mm	Rain Days	Sunshine Hours
January	6.1	2.7	21.2	16	13.5
February	5.9	-0.4	50.6	17	80.0
March	7.3	2.3	38.8	15	69.3
April	12.7	4.9	59.5	18	109.7
May	13.4	5.4	33.0	18	170.2
June	18.4	9.6	26.7	11	235.6
July	20.1	11.9	18.3	13	204.9
August	20.3	12.7	84.4	19	175.7
September	17.8	9.7	21.4	9	140.9
October	15.0	9.0	67.0	22	84.2
November	9.3	3.5	98.8	27	81.3
December	6.1	0.7	45.4	14	55.6
TOTAL			565.1		1,490.2

"Another year when monthly rainfall figures failed to restore soil moisture levels, the annual total being 72 mm or 2.83 inches below the yearly average. Only the months of April, August, October and November recorded above average totals. The wettest day, 25.5 mm (an inch) came on August 26, a day which started damp with drizzle, then brightened but concluded with an early evening thunderstorm that lasted for two hours, a spectacular display. A prolonged period of snow began at 13.40 hours on February 5 and continued unabated until 19.45 hours the following day, resulting in an accumulation of 20 cm, the deepest fall since December, 1981.

As might be expected in dry years there were several months with above average sunshine levels - February, July, August and November, but most notably June with 235.6 hours, the sunniest June recorded since we began our record keeping. In contrast there were dull months, but especially January with only 13.5 hours, easily the dullest month ever at Ness, With a period of nine consecutive days when we never saw a blink of sunshine from the 16th to the 24th inclusive.

February, March, April and May proved to be cooler than usual, but things began to hot up in June, a trend that continued through to November when on the 3rd we recorded the warmest ever night for the month at 13.3 degrees Celsius minimum. The year's highest temperature was recorded on August 18 with a maximum of 29.4 degrees Celsius.

All five of the year's thunderstorms occurred in August and most of the gales in late autumn, but fortunately we sustained little damage. The year closed on a misty and foggy note as we approached Christmas and snow returned late on December 31, leading us into the New Year."

Kunzea in Great Britain.

The following article on Kunzeas being grown in Great Britain, was prepared and forwarded by Jeff Irons.

"Eight *Kunzea* species can be bought from British nurseries. This is a reflection of the way in which businessmen are seeking to cash in on the public's desire for novelty, and in particular for conservatory plants with which to upstage their neighbours.

Only one species, *Kunzea muellerii*, can be considered winter hardy here. The stock we have was grown from seed collected on Mt. Kosciuszko by Alastair Lockey, and sold by him some years ago. My specimen must be 6-8 years old, and is unflowered.

The other species sold are *K. ambigua*, *K. baxteri*, *K. capitata*, *K. ericoides*, *K. parvifolia*, *K. pomifera* and *K. recurva*. The only nurseryman to offer *K. muellerii* finds that *K. ambigua*, grown from Nindethana seed, will not survive night minima lower than -5 degrees Celsius. Even the warmest parts of Britain can expect nights down to -10 degrees Celsius and winter days below 0 degrees Celsius.

I brought *Kunzea* "Badja Carpet" here from Australia. Unfortunately the bare rooted plant did not re-establish itself."

Members Reports.

Trevor Gilbert, Dubbo advises that he had a good flowering of his *Melaleucas* and *Callistemons*. *M. elliptica*, now three years old, flowered for the first time. *M. viminea* and *M. radula* continue to flower well each year as does *M. wilsonii* but which requires a major pruning after three years. His *M. fulgens* var *corrugata* now gets too much water and shade and is not as productive as it has been in past years. *Callistemon pachyphyllus* and *C. "Injune"* continue to do well. Some time ago Trevor planted out a "rogue" seedling from a batch of *Melaleuca* seedlings and which turned out to be *M. viminea*. However, it is quite different to his "official" *M. viminea*. Both are 2 m high. One is upright and 300 mm wide. The other is 1 m wide, multi-stemmed and with a weeping habit.

Trevor wants information on *Callistemon*, *Melaleuca* and *Leptospermum* species listed in "Rare or Threatened Australian Plants" published by C.S.I.R.O. and A.N.P.W.S.. I have forwarded what information I have on *Callistemon* and *Leptospermum* species. He would appreciate any information anyone may be able to supply on the *Melaleuca* species including present population figures, location of populations, possible seed sources etc.. If you can assist, Trevor would be pleased to hear from you.

Trevor further advises that Dubbo City Council continues to remove *Acacia*, *Melaleuca* and *Leptospermum* species from median strips and to replace them with exotic species. As Trevor states, a bit of maintenance and regular pruning would keep these Australian species from becoming straggly.

Barbara Buchanan advises she is growing *Kunzea affinis* and *K. jucunda*, from W.A. with limited success. Apparently, these species are difficult to tell apart and two plants, of one or the other, are growing on raised mounds and flowered again last spring. Colour is bright pink.

Two plants of *K. pulchella* have not yet flowered although the oldest plant has been in the ground for five years or so.

K. parviflora is indigenous to the Myrree district where it grows in winter wet areas. Barbara says it seems to flower well for a few years then gets erratic and gives the impression that it is a coloniser of disturbed areas such as roadside verges.

K. ericoides is definitely a coloniser of roadside verges, creek banks etc.. A neglected paddock nearby has a patch of about 1 acre in extent, with closed canopy and clear at the base. On Barbara's property, from one plant on a ridge, *K. ericoides* is slowly spreading over wet spots.

Also on Barbara's property are extensive areas of what appears to be *Leptospermum continentale* and *K. ericoides* is also becoming somewhat invasive.

Barbara's daughter had a magnificent *K. baxteri* growing in sandy soil on a cliff top overlooking Bass Strait at Lake's Entrance, Vic..

Kunzeas in Cultivation

I haven't received much feedback on what Kunzeas are being grown in gardens. How about inundating me with a flood of information!!!!

Leptospermum Slides

I have made up a Leptospermum Slide Programme comprising around 40 slides together with written descriptions. Thanks go to Christine Howells, Tasmania who loaned me a number of slides to copy. The Slide Programme is available for loan to interested individuals or groups.

Callistemon and Melaleuca Slide Programmes

The Callistemon Programme has been expanded to 119 slides while the Melaleuca Programme has been expanded to 121 slides. Both these Programmes are available to individuals or groups. The only cost involved is that the borrower pay for registered return post.

Mosquito Repellent

Have you encountered the latest release in the fight against mosquitoes? Australflo Nurseries have released plants of *Leptospermum liversidgeii* to the market under the name of "Mozzie Blocker".

The information reproduced below is taken from the label which accompanies the plant. I have bought a plant and will keep you informed as to whether or not it has any effect on the voracious mosquitoes we get around here.

"Mozzie Blocker: The natural way to keep mozzies at bay.

How it works. Mosquitoes really hate this plant and will do their level best to keep away. The active oil in Mozzie Blocker is constantly dispersed into the atmosphere but it really gets busy during warm weather, when mozzies are at their bittiest. ~~The active oil in Mozzie Blocker is constantly dispersed into the atmosphere but it really gets busy during warm weather, when mozzies are at their bittiest.~~ The active oil in Mozzie Blocker, Citronella is a turn off for mozzies, and just by brushing against the plant, you'll release even more of the repellent oils.

You'll love this hardy fine leaved upright ornamental shrub with its pale pink summer flowers. It grows up to 1.8 m by 1.2 m wide. Smaller if pruned often.

In ground it needs moist but well drained clay loams or moist sandy soils. Use it as a hedge around the barbie, or as guardians placed each side of an exterior doorway.

In containers. It grows well in similar positions in ornamental pots and can then be brought inside when you are entertaining. Or for maximum protection, they can be arranged around the barbie, sundeck, pool or patio.

Coverage. Each plant can provide protection over approximately 3 m. So if you wish to protect a barbeque area of 15 sqm, you would need approximately 5 plants.

Maintenance. Cutting back during the cooler months encourages a dense shape and promotes new growth, new secondary shoots and the extra leaves mean extra repellent oil. Although originally from a sub tropical environment it tolerates frosts well.

Fertilise with a controlled release fertiliser (Debco Green Jacket) around the roots during spring or late summer."

Financial Statement.

<u>Receipts</u>		<u>Expenditure</u>	
Balance at 4/3/97	\$528-20	Petty Cash	\$ 57-15
Membership	\$214-01	Seed	\$ 19-00
Bank Interest	<u>\$ 5-73</u>	Photocopying	\$ 52-50
	\$747-94	Postage	<u>\$ 45-90</u>
Less expenditure	<u>\$183-55</u>		\$ 183-55
	\$564-39		
Less GDT	<u>\$ 2-40</u>		
	\$561-99		

Balance as per bank statement 13/11/97 - \$561-99

Membership List.

Arnall, D. PO Box 12, Mangochi, Malawi, AFRICA.
 Aust. Nat. Botanic Gardens, GPO Box 1777, Canberra, 2601
 Buchanan, B.N., RMB1590, Myrrhee, Vic, 3732
 Craven, L.A., Aust. Nat. Herbarium, GPO Box 1600, Canberra, 2601
 Cassidy, D.E., 7 Box Avenue, Forest Hill, Vic, 3131
 Debono, H., 12 Allée des Chasseurs, Le Pecq, FRANCE
 Gilbert, T., 51 Gilbert St, Dubbo, NSW, 2830
 Glazebrook, J., 87 Daintree drive, Logan Village, Qld, 4207
 Holliday, I, 29 Tennyson Ave, Tranmere. S.A. 5073.
 Hickling R & M, 16 Mary Smokes Ck Rd, Kilcoy. Qld. 4515.
 Hibbert S, 18 Railway St, Nudgee. Qld. 4012.
 Hoersch M, 3/8 Darebin Blvd, Reservoir. Vic. 3073.
 Irons J, 74 Brimstage Road, Heswall. ENGLAND.
 Ingall M, PO Box 619, Bourke. NSW. 2840.
 Johnston L, 11 Milner Place, Thornlands. Qld. 4164.
 Jahnke B, 11 Goldsbrough Rd, Taringa. Qld. 4068.
 Knight E, 15 Valentine Rd, Birkdale. Qld. 4159.
 Lightfoot D.V, 8/70 Brighton Ave, Croydon Park. NSW. 2133.
 Lightfoot P, 64 Ridgeway Rd, New Lambton Hts. NSW. 2305.
 Loxley C, 142 Captain Cook Dr, Willmot. NSW.2770.
 Morrow H, PO Box 151, Bulleen. Vic. 3105.
 Reick A, PO Box 59, Rosewood. Qld. 4340.
 Randall D, 25 William St, Cobram. Vic. 3644,
 Rathie K, 5 Salston Rd, Greenbank. Qld. 4124.
 SGAP NSW Ltd. PO Box 744, Blacktown. NSW. 2148.
 SGAP Vic Inc, 11 Davies St, Bacchus Marsh. Vic. 3340.
 SGAP Maroonah, PO Box 33, Ringwood. Vic. 3134.
 SGAP Tas Reg, GPO Box 1353P. Hobart. Tas. 7001.
 SGAP East Hills, 13 Orhello St, Blackhurst. NSW. 2221.
 SGAP Blue Mts, PO Box 23, Glenbrook. NSW. 2773.
 SGAP Keilor Plains, PO Box 115, Niddrie. Vic. 3042.
 SGAP Canberra Reg, PO Box 217, Civic Square. ACT. 2608.
 SGAP SA Reg, 2 Birdwood St, Netherby. SA. 5062.
 SGAP Geelong Inc, PO Box 50, Corio. Vic. 3214.
 SGAP Qld Reg, PO Box 586, Fortitude Valley. Qld. 4006.
 SGAP Armidale, PO Box 735, Armidale. NSW. 2350.
 SGAP Foothills, PO Box 65, Boronia. Vic. 3155.
 SGAP Fleurieu, 62 Warland Ave, Victor Harbour. S.A. 5211.

SGAP Bairnsdale, PO Box 1036, Bairnsdale. Vic. 3875.
Tiley I.L. "Buln Gherin", RMB 454, Beaufort. Vic. 3373.
Van Dam J, 799 Watta molla Rd, Berry. NSW. 2535,
Waikiti Nurseries, Mason Court, RSD Shepparton. Vic. 3631.
Wildflower Society of WA, PO Box 64, Nedlands. WA. 6009.
Wrigley J.W, PO Box 1639, Coffs Harbour. NSW. 2450.
Waldron I, PO Box 134, Jimboomba. Qld. 4280.
Williams B, PO Box 513, Kew. Vic. 3101.
Widdop D, 66 Banff St, Corowa. NSW. 2646.

Happy gardening in 1998.

Regards,

A handwritten signature in cursive script that reads "Col Cornford".

Col Cornford.