



**ASSOCIATION OF SOCIETIES FOR GROWING
AUSTRALIAN PLANTS**

ACACIA STUDY GROUP NEWSLETTER

No. 94 February 2005

A belated Happy New Year wish to everyone!

Many parts of Australia have received good rain in the past few months. I hope your area was among them.

We actually ended up with above average rainfall last year at Booie. Unfortunately the rain came in two short bursts – one at the beginning and one at the end of the year. The ‘dry’ in between was quite severe and it looks as though we are heading for another one.

Insect numbers have only started to pick up and again the eucalypts are being defoliated by looper caterpillars, beetles and processionary caterpillars are stripping the acacias and grasshoppers are doing a good job on a wide range of plants.

When flattening a grasshopper or bemoaning the huge insect load on one of my favourite acacias I often think of a book I read when I was a child. It was the journal of an early African explorer and was published in the 1800’s. One of the impressive parts for me was his description of how local people dealt with a locust plague. The men strapped on large hide ‘shoes’ and spent the days tramping the locusts. The women followed with baskets collecting them and then spread them to dry. The dried insects were ground into flour and cooked into ‘bread’. This averted starvation. Cattle and other livestock became so addicted to the insects that they could be seen chasing individual grasshoppers when the plague had past.

Insects are quoted as 60 to 70% protein and our aversion to eating the more readily harvested species is really quite tragic considering the present state of the planet and the damage done to the environment by the large amounts of pesticides used.

I must raise again the leadership of the ASG. In May I will have completed 4 years as leader and feel that it is time for me to move on. If no one is willing to take on the leadership at this stage I will continue until May 2006 but no longer.

I feel I am not able to put in the time required by the position. I can manage to put out four newsletters a year (with considerable help from members) and look after the seed bank but I am not able to fit in the ‘extras’ required ie talks, articles, projects, publicity. The photo library has been scanned but in the months since then I have not managed to do any more to it.

Please think about this. I would not like to see the ASG go into recession again.

Letters and emails from members

Bob O'Neill of **Katandra Gardens** in Victoria sent a photocopy of an article from the Jan 2005 edition of 'The Garden', the monthly journal of the Royal Horticultural Society that has 3,000,000 members worldwide. The article lists the author's (Mike Nelham) 10 top horticultural destinations and sights in Australia. Only three gardens are listed and Katandra Gardens is one of them. The other two are Kings Park in Perth and the Australian National Botanical Gardens.

This is a tremendous achievement for Bob and Dot O'Neill who since 1976 have developed nine acres of gardens. Congratulations!

If you would like to know more about Katandra Gardens Bob and Dot have a website at <http://www.katandragardens.com.au>

One of the Horticultural sights mentioned is the Acacia. The author points out the 'bewildering range of foliage and flower type' found in acacias and suggests that they would be excellent garden plants in milder areas of the UK

Marion Simmons from Tasmania sent a photocopy of an article on acacias from a book called 'The Ladies' Companion to the Flower Garden' by J.W.Loudon dated **1844**.

I found the article facinating and have reproduced parts of it below. I'm assuming the copywrite status of the book will allow me to do this.

ACA`CIA, - *Leguminosae*, - Most persons understanding of the word Acacia, tall trees with pea-flowers, which are natives of North America, and quite hardy in the open air in England. These trees, however, are the Locust trees, or false Acacias, and belong to the genus *Robinia*. The true Acacias are what are called Wattle trees in Australia, with flowers like balls or spikes of down; and as they require protection from the frost in England, they are generally treated in this country as greenhouse shrubs. Above three hundred species have been introduced; but only about thirty are in cultivation in British nurseries, and nearly all these have been figured in the botanical periodicals. By far the greater part of the Acacias grown in England are natives of New Holland, and most of these are nearly hardy; but some are from the East Indies and Arabia, and most of these require a stove. Nearly all the kinds are evergreen; and the Australian species are very valuable in greenhouses, because they are in flower during winter. In the open ground they flower in March, April, May and June. The following kinds are the most common of the Australian Acacias in British nurseries:- *A.armata*, a most useful plant for windows and balconies, from its hardiness, its compact, simple dark green leaves, or phyllodes and the great abundance of its yellow ball-like flowers; it requires, however, frequent syringing of the leaves, as it is very apt to be infested with insects: *A.alata*, a curious species with winged stems; *A.decepiens*, with small angular leaves; *A.diffusa*, a dwarf plant with small flowers; *A.hybrida*, very fragrant; *A.longifolia* with very long leaves and the flowers not in balls, but in long close spikes; *A.pubescens*, a very elegant species with drooping branches, bipinnate leaves, and the ball like flowers disposed in racemes; *A.nigricans*, with blackish green foliage; *A.verticillata*, with the leaves like spines,

and disposed in whorls; *A.lophantha*, with bipinnate leaves, and long spike –like whitish flowers; *A.dealbata*, the *A.affinis* of some botanists, remarkable for the delicacy of its foliage, and the whitish bloom which covers its trunk and branches; and *A.melanoxylon*, the Black Wood, or Black Wattle of the Australians, the dilated petioles or phyllodes of which look like leaves, with the real leaves, which are bipinnate, attached to their extremities.

A paragraph, omitted here, deals with non Australian Acacias.

All the kinds of Acacia require to be grown in sandy loam, or in a mixture of sand, peat, and leaf mould, well drained. They are generally propagated by imported seeds (though some of the species have ripened seed in this country); and the seeds are sometimes two, or even three, years in the ground before they come up. To hasten their vegetation, they may be steeped in very hot water, and left in the water for several days, or in oxalic acid and water, and sometimes even boiled for a minute or two, or a little bit may be cut or scraped off just at the scar on the seed; and then prepared by any of these modes, they will generally come up in about a week or a fortnight. Acacias may also be propagated by cuttings; but as these are rather difficult to strike, they should be put into a pot filled with pure white sand, covered closely with a bell-glass, and then plunged into a hotbed. The tenderer species may be grafted on *A.dealbata*, *A.lophantha*, and *A.melanoxylon*, which appear to be the hardiest kinds. All these three species will generally spring up again from the root, when killed down to the ground by frost; and whenever this is the case, it indicates that the plants may be propagated by cuttings of the roots, which is frequently done with these Acacias. All the roots of the Australian species smell like Garlic and this smell is very perceptible on entering a room where any of these plants are kept, if it has been shut up for a few days. For this reason, when Acacias are kept in a greenhouse adjoining the living room of a house, care should be taken to give the house abundant ventilation; and this is also very conducive to the health of the plant.

Jeff Irons in the UK asked about this smell almost two years ago and I still cannot tell him what causes it in spite of numerous enquiries. It is an ongoing source of embarrassment to me. Can anyone out there help?

Thais

Grace Lithgow, author of the book ‘60 Wattles of the Chinchilla and Murilla Shires’ is at present working on a book about mistletoes and would like to sell copies of her Wattle book to help finance the new project.

One page of the book is devoted to each acacia and includes superb drawings of the habit, foliage, flowers, pods and any other features of interest. The descriptions include the habit, trunk, foliage, flowers, pods, seed, habitat, uses and notes. The habitat notes often indicate precisely where a particular acacia species can be seen. The books are available for \$20 post paid from

Grace Lithgow
PO Box 67
Chinchilla 4413
Phone 07 4662 7127

Hazel Kelly of Moonbi, NSW sent the interesting galls in **Plate 1** (black and white photos, coloured in email)

Each of the segments in the clumps is a flower modified to form a gall by a parasite. On cutting open these galls there were a number of chambers each with a larva or in a couple of cases a pupa. The pupae belonged to wasps but I can't be sure if that is the primary parasite. Sometimes flies start the ball rolling and are then parasitised by wasps and sometimes a wasp is the instigator and it is subsequently parasitised by other species of wasps. These galls appear to be primary wasp jobs. Each segment of the clump is a parasitised flower and actually contains one chamber with a few tiny, very immature seeds. It would be interesting to know if the wasp laid a few eggs in each flower or laid a mass in the flower head which hatched into larvae that moved around to individual flowers. All flowers in each of the heads were parasitised.

Extra floral nectaries.

A recent query about these glands has led to the following comments and photos. I would very much appreciate any comments from members

The name is self explanatory. These are glands which produce nectar but are not associated with flowers. They occur in a wide range of plants – from cacti to rainforest plants and of course acacias. In acacias they can appear as a pit or a protuberance

Any of you who have used the interactive key on the 'Wattle' disc will be familiar with these structures as they are used taxonomically. Their presence or absence, number and position can be of importance.

Black and white photos of glands (coloured in email)

Plate 2 shows the positions (arrows) of glands in phyllodes from four different species of *Acacia*

- A. *A.rubida*
- B. *A.macradenia*
- C. *A.cultriformis*
- D. *A.leptoloba*

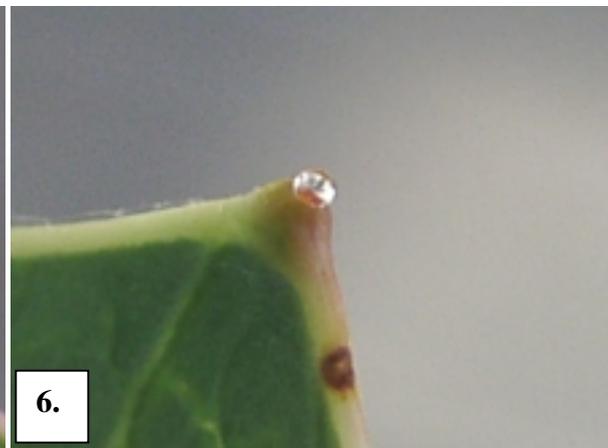
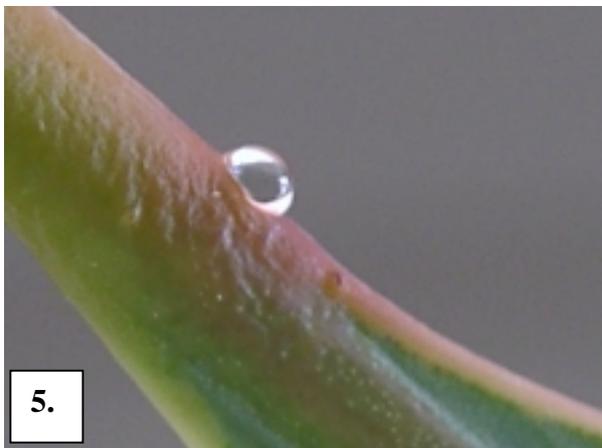
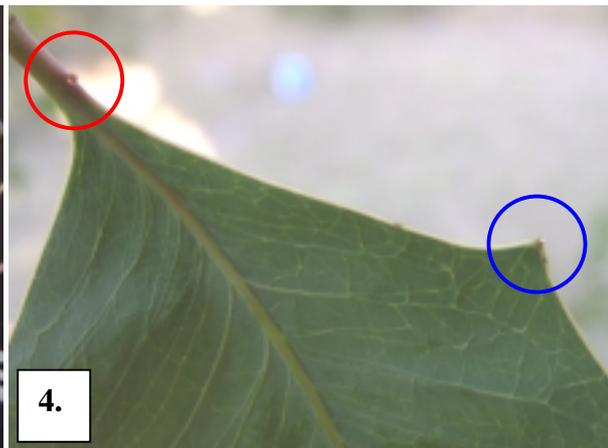
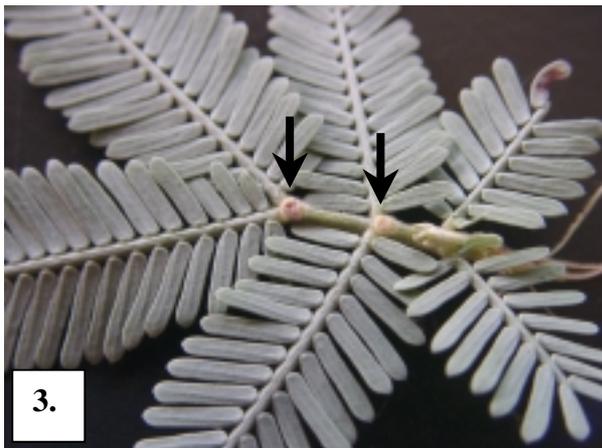
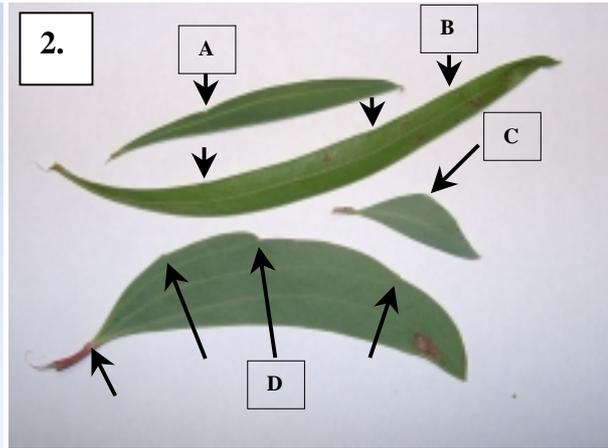
Plate 3 shows the position of glands in a species with true leaves – *A.baileyana*. Again the position and number is variable for different species.

Plate 4 shows the position of glands on a phyllode of *A.bancroftiorum* and

Plates 5 & 6 show droplets of nectar secreted by these glands.

Plate 7 shows ants feeding at glands on the phyllodes of *A.longispicata*.

Extra floral nectaries are usually explained as attractants for ants. Australian acacias don't have the close association with ants seen in some African species where ants live in swollen thorns on the plants and appear to provide some protection from grazers large and small. A similar role is seen for ants in Australia.



The 'Dictionary of botanic terminology' at

http://www.cactus-art.biz/note-book/Dictionary/dictionary_nectary.htm lists four hypotheses for why plants secrete extra floral nectar.

1. The presence of ants seems to reduce the vulnerability of flowers to herbivorous insects.
2. Ants are distracted from floral nectaries where their presence might deter pollinators.
- 3 Ants are more likely to nest near plants and enhance the nutrient status of the area.
- 4 Ants can play an important role in seed distribution.

Personally, I have never seen ants near foliage glands in numbers great enough to be a deterrent to anything wanting to eat an acacia – foliage or flowers. I do spend a quite a bit of time looking for insects on acacias but my experience is limited. In the area I cover in SE Qld, large numbers of ants which stop me from touching a branch are associated with either sap sucking bugs (which are producing honey dew) or larvae of blue butterflies. Usually the butterfly larvae site themselves near leafhoppers or other bugs presumably to enhance the ant's protection. The ants certainly confer a deal of protection from me as they become very agitated and move into attack mode with any disturbance.

In the frenzy of insects at flowering time I have rarely collected ants. Perhaps the extrafloral nectaries do distract them. I am very interested in the various moth larvae that feed on acacia flowers and it is hard to see how their numbers are influenced by a small number of ants somewhere else on the plant.

I spent a morning last week examining acacias of different species and found only half a dozen plants where ants were using the nectaries even though droplets of nectar were sometimes obvious on young foliage. A fellow acacia/insect enthusiast has agreed with these observations. He has, however, found a different situation with some inland *Senna spp.* Ant nests were sited near the plants and enough ants were using the nectaries on them to be a deterrent to other visitors.

Plate 8 shows one insect which I have seen taking an intense interest in extrafloral nectaries. At the time this photo was taken (shortly after flowering) plants of *A.wilhelmiana* were attracting large numbers of honey bees – enough to cause the plants to really 'buzz'. These were feeding at the nectaries. Obviously the nectaries can be very attractive to insects but here it is a foreigner and ants were not in evidence.

Please let me know of any of your own observations. As mentioned my experience is very limited geographically as well as in observations.

Another Wasp Parasite.



Plate 9



Plate 10



Plate 11

When collecting larvae of a blue butterfly (Lycaenidae) on *Acacia jucunda* I noticed that some of the larvae looked unhealthy and were no longer attended by ants. White webbing appeared around them (**Plate 9**) and they ultimately shrivelled until the dried skin disappeared and a cocoon attached to the phyllode and covered in the webbing was revealed (**Plate 10**). A small wasp hatched from this (**Plate 11**).

Even the defensive hordes of ants which attend these butterfly larvae were not able to protect them. It is difficult to see how the female wasp manages to get through.

An Acacia hybrid

The following article and coloured photos are from **Ken Forbes** of Nowra, NSW. Many thanks Ken.

Three years ago I collected seed from *A. chinchillensis*, these germinated well and about 20 were potted on into 4" pots. However half of them were not true to form, therefore some cross-pollination had occurred but with what? The only other Acacia within several kilometres and flowering at the time was *filicifolia*.

. I thought this interesting as these two almost represent the extremes of the fern leaf Acacias in their plant size, leaf colour, pinnae/ pinnule number size and arrangement, gland number and placement. Some of these 'hybrids' are now about 1.5 m high and in bloom and appear to be halfway between their parents in all aspects. (**See coloured plates**)

A.chinchillensis was also pictured and described(description reproduced here) in N/L No 84

This is a magnificent small acacia which grows to a maximum of 2 m. It has small, silvery, bluish green, true leaves which give the plant a delicate appearance. It has a very limited distribution near Chinchilla and Tara on the western edge of SE Qld. It grows naturally in sandy soil in a low rainfall area.

There are very few records of its cultivation in the ASG archives and though it has been grown in clay as far south as Croydon in Vic. its health is not mentioned. There are some magnificent specimens in Brisbane, including one in a large pot.

This is a species that is well worth a try.

A.filicifolia can grow to tree size but in harder country may remain at shrub size. According to the 'Wattle' disc it is a common species occurring from Stanthorpe in SE Qld to the south coast of NSW as well as on the northern and central tablelands and central western slopes. It grows on valley slopes or alluvial flats often near streams usually on granite or in sandy soils.

In the ASG archives it has been cultivated successfully on sandy soil over clay. I found it grew well in the shallow soil over granite near Kingaroy but was very short lived as a result of insect attack.

Coloured plates

Plate 1 *A. chinchillensis* parent plant

Plate 2 Close up of above

Plate 3 Close up of hybrid in bloom

Plate 4 Close up of hybrid in bloom

Plate 5 *A. filicifolia*

Ken also sent the following photos

A. jonesii photographed near Kangaroo Valley, NSW. August 2004.

Plate 6 *A. jonesii* habit of plant

Plate 7 *A. jonesii* close up

A. subtilinervis photographed at Burrier Rd near Nowra, NSW. September 2004

Plate 8 *A. subtilinervis* habit of plant

Plate 9 *A. subtilinervis* close up

A. jonesii According to the 'Wattle' disc *A. jonesii* grows from 0.4 to 4m and often suckers. It occurs in NSW from Yerranderie south to Goulburn and as far east as Nowra. It grows in open forest or exposed situations on a variety of soils from dry stony ridges to sandy or clayey soils.

According to the ASG archives it has been grown very successfully in heavy clay which in one case was waterlogged in winter.

This sounds like a truly adaptable species.

A. subtilinervis can grow into a tall shrub but is often not much more than 2m high. According to the 'Wattle' disc it occurs on the central coast-central tablelands border, the south coast and southern tablelands and southwards to the upper Snowy R, Vic. It grows in heath or eucalypt forest, in sandy gravelly soil amongst boulders, on granite, rhyolite and sandstone.

There are no records of its cultivation in the ASG archives.



Plate 1



Plate 2



Plate 3



Plate 4



Plate 5



Plate 6



Plate 7



Plate 8



Plate 9