

ASBS

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Society*



# Newsletter

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**Loose-leaf inclusions with this issue**

- Notice of Annual General Meeting for 2006 and proposed changes to ASBS constitution

**Publication dates of previous issue**

*Austral.Syst.Bot.Soc.Nsltr* 123 (June 2005 issue)

Hardcopy: 15<sup>th</sup> July 2005; ASBS Web site: 18th July 2005

## ASBS Inc. business

### From the President

With the Nomenclatural Section of the XVII International Botanical Congress in Vienna voting to accept the recommendation to conserve the name *Acacia* with an Australian type, we finally know “wattle become of *Acacia*”. This issue has been the subject of heated debate over the past few years and it is not my intention to rake over the embers here. Rather, I was interested to hear of the public lobbying in favour of the proposal in the weeks preceding the congress. The secretary of the Committee for Spermatophyta, Dick Brummitt, is reported to have received around 250 letters supporting the committee’s recommendation (Web ref. 1). I am told Dick had these displayed on boards at the Nomenclatural Session in Vienna. Whether this had any impact on the final outcome at that late stage is debatable. Some of these letters came from professional botanists. However, by far the majority came from ordinary Australian folk who, while obviously having an interest in our native flora, probably have little understanding of the technicalities of accurately applying names to plants. I was amused to read the claim that much of the support came from listeners to ABC radio’s Sunday morning program *Australia All Over*. One might wonder what will happen next time a contentious nomenclatural proposal involving a name for another important plant group comes up? One might also ask, if such wide ranging support can be rallied for a cause such as this, could the same people also be encouraged to lobby in support of better funding for research in plant systematics?

Congratulations to everyone involved in Melbourne’s successful bid to host the XVIII International Botanical Congress in 2011. The organising committee for the conference is jointly chaired by Judy West and Stephen Hopper. ASBS wishes Judy and Steve and their committee of enthusiastic and eminent members of the Australian botanical community every success in their preparations to showcase Australian botanical research to the world. Details and a Powerpoint demonstration delivered in Vienna are already available on Web ref. 2 (see also p. 23).

On matters related to conferences, but this time much closer to the present, Wayne Harris from BRI has put together an attractive program for the conference sponsored by ASBS to be held in Brisbane on the 2<sup>nd</sup> and 3<sup>rd</sup> of November. The conference will be followed on the 4<sup>th</sup> by a nomenclatural master class run by Dr Dick Brummitt from the Royal Botanic Gardens, Kew. Council hopes this might be the first of many such professional development classes to be run in association with ASBS conferences. I hope to be able to bring you more information on this in the next issue of this Newsletter.

And again on the subject of conferences, don’t forget the ASBS conference that will be held in Cairns in the second half of next year on November 13-15<sup>th</sup> inclusive. The title is “*Plant Diversity in the Tropics; How Much Do We Know?*” Planning is at an early stage. Also, if we discount fragmentary evidence that might suggest Portuguese and Spanish contact with the Australian mainland in the middle of the sixteenth century, 2006 will be the four hundredth anniversary of European discovery of Australia. In 1606 the Dutch ship *Duyfken* under the command of Willem Janszoon sailed southwards along the western shore of Cape York Peninsula as far as Cape Keerweer (see Web ref. 3). The organising committee thinks 2006 would be an opportune time to reflect on the contribution the Dutch have made to systematic botany in Australasia. It is hoped this will form part of the conference program.

Finally, Council, with much encouragement from treasurer Anna Monro, has embarked on a project to develop a comprehensive electronic index to the ASBS Newsletter. Once completed this will be available on the Society’s web page. Watch for further information on this as the project progresses.

### References

- Web ref. 1: [www.worldwidewattle.com/infogallery/nameissue/decision.php](http://www.worldwidewattle.com/infogallery/nameissue/decision.php)  
Web ref. 2: [www.anbg.gov.au/cpbr/ibc-2011/](http://www.anbg.gov.au/cpbr/ibc-2011/)  
Web ref. 3: [www.duyfken.com](http://www.duyfken.com)

### Hansjörg Eichler Research Fund award announcement

Council is pleased to announce that the one grant has been awarded in the latest round of applications to the Hansjörg Eichler Research Fund. The successful applicant is:

Claire Marks (University of Melbourne).  
Evolution of *Nicotiana*.

Darren Crayn  
Chair, Hansjörg Eichler Research Committee

## Eichler Research Fund report

### Molecular phylogeny of *Eucalyptus* subgenus *Eudesmia* based on DNA sequence data

Adele Gibbs

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*Eucalyptus* L'Hér. (Myrtaceae) is an ecologically and economically important tree of the Australian landscape. *Eucalyptus* subgenus *Eudesmia* Johnson & Hill includes 26 taxa, predominately in northern tropical regions of Australia, central arid deserts and the South-West of Western Australia (Hill and Johnson 1998; Nicolle 2000). Stellate hairs, pith glands, stamens usually in four bundles, and free sepals on the buds, flowers and fruit of most taxa traditionally define the subgenus. Subg. *Eudesmia* is morphologically diverse, with growth habit of trees and mallees, variable bark, variable seedling characters, adult leaf shapes that include neotenous forms, and stamens of various colours: white, yellow, and orange (Brooker and Kleinig 1994a, 1994b, Fig. 1).

The current informal classification divides the subgenus into five sections and seven series, five of which are monotypic (Hill and Johnson 1998). A phylogeny based on morphology is not resolved, with only one clade identified (Hill and Johnson 1998). Molecular and morphological studies to date have each used different combinations of only a small number of eudesmid taxa (Ladiges and Humphries 1983; Sale *et al.* 1993, 1996; Ladiges *et al.* 1995; Udovicic *et al.* 1995; Steane *et al.* 1999, 2002; Udovicic and Ladiges 2000). The subgenus was suggested to be paraphyletic by Ladiges and Humphries (1983) and Steane *et al.* (1999), but is

now considered to be monophyletic (Ladiges *et al.* 1995; Sale *et al.* 1993, 1996; Steane *et al.* 2002). The internal transcribed spacer (ITS) and *psbA-trnH* intergenic spacer regions have been studied previously in a small number of eudesmid eucalypts (Steane *et al.* 1999; Udovicic and Ladiges 2000; Steane *et al.* 2002). Corolla, androecium, operculum development and trichomes have also been studied in selected eudesmids (Ladiges 1984; Drinnan and Ladiges 1989a, 1989b). Further study is necessary to establish the phylogeny of all taxa within *Eudesmia*, and its relationship to other subgenera within *Eucalyptus*. The aim of this study is to determine the phylogenetic relationship of the eudesmid eucalypts using molecular and morphological evidence.

The Hansjörg Eichler Scientific Research Fund allowed me to conduct preliminary molecular sequencing of the ITS region of subgenus *Eudesmia*, by contributing funds for the DNA isolation, amplification purification and sequencing of 10 taxa. The Maud Gibson Trust Molecular Laboratory at the Royal Botanic Gardens, Melbourne was available to conduct the molecular work. I have since expanded the sequencing. Outgroup taxa, *E. curtisii* Blakely & White, *E. tenuipes* Blakely & White, and *E. cloeziana* F.Muell. were used in the parsimony analysis.



Fig. 1 *Eucalyptus miniata*

Table 1 Description of trees for the *psbA-trnH*, ITS and combined data sets based on parsimony analysis of *Eucalyptus* subg. *Eudesmia*

Regions	Indels	Informative characters	Total trees	Tree length	CI value	RI value
<i>psbA-trnH</i>	2 (1300-1370, 1307-1314)	28	12428	108	0.8796	0.8898
ITS	2 (206-208, 585-586)	94	68908	281	0.7402	0.6958
Combined	4	122	18	390	0.7564	0.7316

Forty taxa have been successfully sequenced across the ITS region of nrDNA and the *psbA-trnH* intergenic spacer region of the chloroplast genome. Parsimony analysis was conducted for these data sets separately and combined with two indels scored for each region (Table 1).

The strict consensus of a heuristic search of the combined data set shows a lack of resolution at the base of the phylogeny (Fig. 2), but 17 nodes were resolved, 11 of which have bootstrap support >50%.

The *E. jucunda* – *E. odontocarpa* clade (A) includes 12 taxa from four series. Nodes within

this clade are supported by two indels: one from the *psbA-trnH* spacer data set supporting series *Odontaria* and series *Tetragonae* together as a group with 53% bootstrap support, and an indel from the ITS data set supporting (100%) *E. pleurocarpa* Schauer and *E. extrica* Nicolle as sister species. *Eucalyptus odontocarpa* F.Muell and *E. gamophylla* F.Muell. are sister species, with 87% bootstrap support. *Eucalyptus gittinsii* Brooker & Blaxell is related as sister taxon to all four of these species. Within clade A, *E. pallida* Johnson & Hill, *E. selachiana* Johnson & Hill and *E. eudesmioides* F.Muell. are a monophyletic group (79%), recognized as subseries *Eudesmioideosae* by Hill and Johnson (1998).

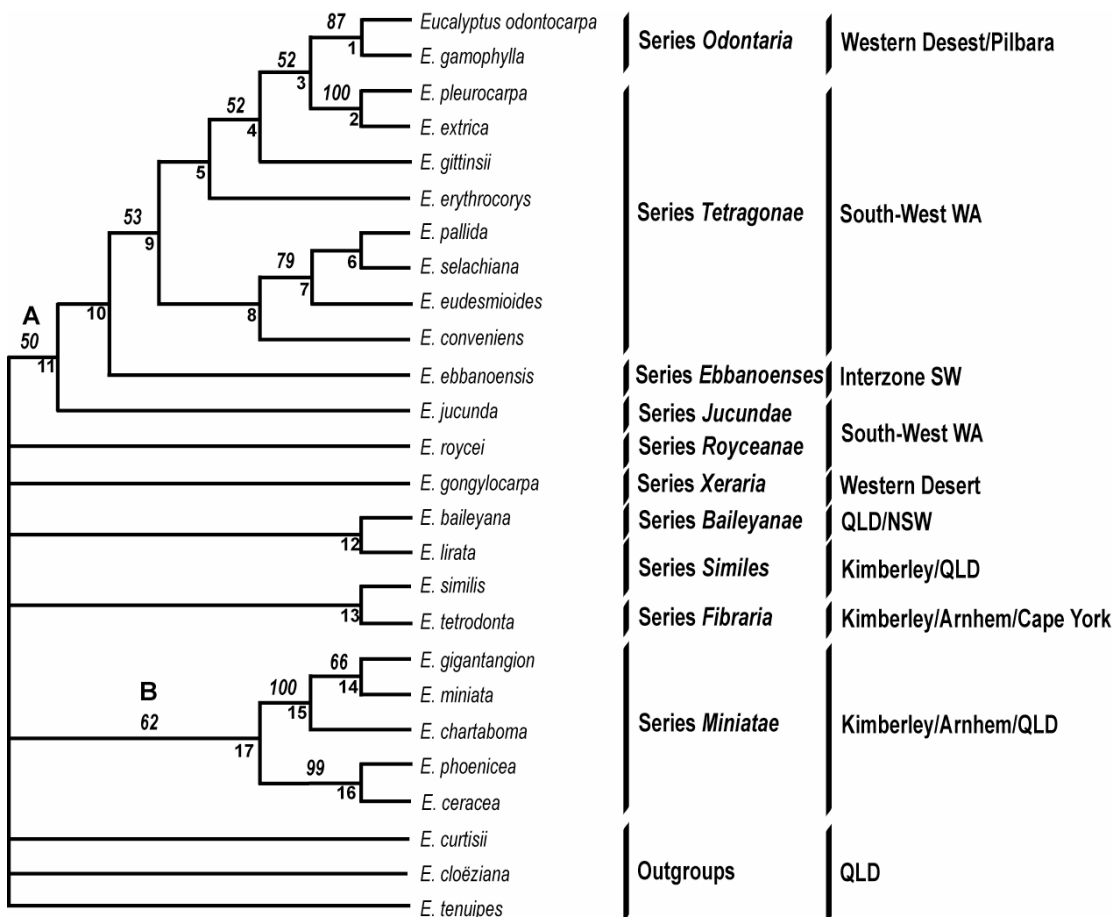


Fig. 2 Strict consensus of 18 trees resulting from parsimony analysis of combined *psbA-trnH* spacer and ITS region data from species of *Eucalyptus* subg. *Eudesmia*. Bootstrap values >50% are indicated above branches, and node numbers below. Series names follow Hill and Johnson (1998). GenBank accessions included in this analysis are: *E. eudesmioides* (ITS), *E. erythrocorys* (AF190382), and *E. ceracea* (ITS)

These three species have sessile juvenile leaves. Series *Odontaria* comprises *E. odontocarpa* and *E. gamophylla*, which are similar in fruit size and shape, and lack trichomes (Ladiges 1984).

The *E. miniata* clade (B) confirms series *Miniatae* as a group of five species. An indel from the *psbA-trnH* spacer data set contributes to the 62% bootstrap support of this clade. An indel from the ITS data set also gives support to *E. gigantangion* Johnson & Hill, *E. miniata* Cunn. ex Schauer and *E. chartaboma* Nicolle together being the sister group to *E. phoenicea* F.Muell. and *E. ceracea* Brooker & Done. These five species all have orange stamens in a continuous ring, ribbed fruit, multicellular trichomes and large fleshy cotyledons.

### Biogeography

Clade A includes taxa endemic to the South-West region of Western Australia and adjacent arid regions (Western Desert and Pilbara) (Fig. 3). In contrast, clade B occurs across northern Australia, in the Kimberley, Arnhem Plateau and Queensland.

### Conclusion

The phylogeny of *Eucalyptus* subg. *Eudesmia* based on DNA sequence data is resolved

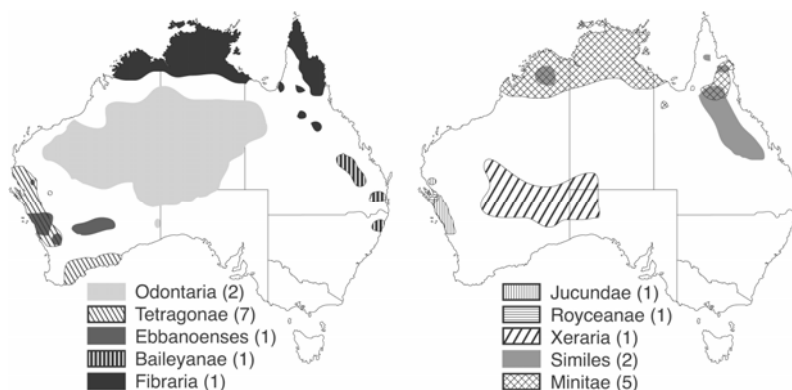


Fig. 3. Distribution of *Eucalyptus* subg. *Eudesmia*; the number in the parentheses refers to the number of taxa in each series

partially, with only two series monophyletic; *Odontaria* and *Miniatae*. The two main clades correspond to two biogeographic regions; one clade occurs across northern and eastern Australia, and the other in the South-West of Western Australia and adjacent semi arid and arid regions. Morphological characters have the potential to further resolve the phylogeny of the eudesmid eucalypts.

### Acknowledgements

I would like to thank the Australian Systematic Botany Society for the financial assistance provided from the Hansjörg Eichler Scientific Research Fund. I would also like to thank my supervisors Professor Pauline Ladiges, Dr Frank Udovicic, and Associate Professor Andrew Drinnan for their support, advice and encouragement throughout this project.

## Article

### Burning bushes

David Symon  
State Herbarium of South Australia

My interest in the Burning bush of the Bible was caught when reading a book (Evans & White 2004) on the Orthodox Monastery of St Catherine in the Sinai Mountains<sup>1</sup>. Here the bush was described as “*Rubus sanctus* a species unique to Sinai”.

The Monastery is one of the oldest surviving as it was established around 542 AD. Despite being in a politically turbulent part of Asia Minor it has survived largely unpillaged. Mohammad is reputed to have visited it and so it is significant to Muslims too. The monastery is also reputedly

the site at which Moses met his future wife and is adjacent to Mt Sinai “the mountain of the delivery of the Law”.

The book and numerous pictures on the internet<sup>2</sup> all show a green mound of vegetation, which could be a *Rubus* species, spilling over a wall. In Evans & White (2004) there is mention of a fire extinguisher nearby, no doubt to impress the stream of visitors.

The original description of the burning bush runs as follows:

<sup>1</sup> Just as an aside, the monastery has World Heritage status. International tourism has placed enormous pressures on the site (Web ref. 1). Eds.

<sup>2</sup> Web references 2-5

The angel of the Lord appeared unto him [Moses] in a flame of fire out of the midst of a bush: and he looked, and, behold, the bush burned with fire, and the bush was not consumed. And Moses said, I will now turn aside, and see this great sight, why the bush is not burnt. And...God called unto him out of the midst of the bush. (Exodus 3: 2-4).

Translations of the Bible differ and the Moffatt translation is more specific: "the angel of the Eternal appeared to him in a flame of fire rising out of a thorny bush. When he looked, there was the thorn-bush ablaze with fire..."

An earlier book on Sinai (Galey 1980) tells a rather different story. The author was a member of an expedition to the monastery from the Universities of Michigan and Princeton (USA) and Alexandria (Egypt), in the late 1970's. In reviewing the history of the site he records a visit to the Monastery in the 4<sup>th</sup> Century by a nun Etheria, who noted that the bush "is alive today and sends out shoots". This was before the monastery was enclosed with the defensive walls built by Justinian in 642 AD. Galey also records a visit by Procopius, a 6<sup>th</sup> Century AD Byzantine historian, shortly after the fortress was established; Procopius made no mention of the Burning bush or of pilgrims.

Galey comments on the present day "Chapel of the Burning Bush" so called because its altar stands over a slab which marks the site of the bush. He says that the exact date when the Bush was replaced by the Chapel is unknown but it was before 1216 when a German pilgrim Magister Thietmar visited the site and stated "there is also in a chapel of this monastery the spot where stood the bush...[it] has indeed been taken away and divided among Christians for relics."

What might then have been the Burning bush?

The identification of biblical plants has depended largely on linguistics, in particular plant names used in Arabic, Hebrew and Accadian, and on plant ecology. However the very long history of agriculture in the area and of largely uncontrolled grazing must have played havoc with early plant distribution. That said, there have been at least four plants considered as possibilities for the burning bush.

Moldenke (1952) in a substantial and heavily documented "Plants of the Bible" considered two plants. The first was *Dictamnus albus* (Rutaceae) a herb with abundant oil glands. The oil is very volatile and when it escapes into the air the approach of a naked light causes a flash flame to engulf the plant. The alternative suggestion was

based on the Hebrew word *seneh* or *s'neh* which means a prickly bush and could be a reference to *Acacia raddiana* which occurs in the Arabian Peninsula and Egypt. Tristram, cited by Moldenke, considered it could also be *Acacia seyal* or *A. nilotica* which is known locally as *sunt* and that it represents the Hebrew word *seneh* or *senna* (*Cassia senna* has bright yellow flowers and is not thorny and so is an unlikely candidate).

An explanation was suggested earlier (Smith in Moldenke 1952) that the "flame of fire" may have been the mistletoe, *Loranthus acaciae*, which grows in profusion on various thorny *Acacia* and has brilliant flame-coloured blossoms.

More recently Zohary (1982) rather contradicted the earlier opinions of Moldenke and now states there was no hint in the text that *sneh* was a thorny bush, that there are no plants in the Sinai that are not consumed by fire and that *sneh* must be identified linguistically only. Only one plant has a similar Arabic name *sneh* (*Cassia senna*).

The suggestion of *Rubus sanguineus*<sup>3</sup> as the Burning bush is based on the Aramaic translation of *sneh* or *sania*. *Rubus* species are certainly prickly but scarcely flame-like. Zohary considers that no *Acacia* species grow in Sinai and probably never have and that this identification is less sound than *Cassia senna*. He further states that the present bramble in the monastery of Sinai is a cultivated one, planted by the monks to strengthen the belief that the burning bush has grown there since the revelation to Moses, since *sneh* is so completely equated with brambles in the minds of scholars and bible students.

Neither Moldenke nor Zohary discuss *Dictamnus* at any length. Feinbrun & Koppell (1968) do not list *Dictamnus* nor "Burning Bush" but do include *Rubus sanguineus* as the Holy bramble and state that the plant was at one time thought to be the thorn-bush *sneh* of the bible and was therefore called holy.

I have not been to Sinai but *Rubus* seems unlikely to be native in those arid ranges and it is difficult to conceive of a *Senna* inspiring a vision of flames. Should we just accept that there was really no plant with these miraculous properties and the story is apocryphal?

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<sup>3</sup> *Rubus sanguineus* is used by Feinbrun & Koppell (1968) for the common *Rubus* in Israel but Monasterio-Huelin & Weber (1996) consider it to be a synonym of *R. sanctus*.

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- Web ref. 3: [www.geographia.com/egypt/sinai/burningbush.htm](http://www.geographia.com/egypt/sinai/burningbush.htm)
- Web ref. 4: [www.touregypt.net/featurestories/catherines3.htm](http://www.touregypt.net/featurestories/catherines3.htm)
- Web ref. 5: [www.markhorrell.com/travel/egypt/sinai/ind\\_katherines.html](http://www.markhorrell.com/travel/egypt/sinai/ind_katherines.html)

# News

## A new herbarium for PERTH

The construction of a new herbarium was given the go-ahead in the 2005-2006 Western Australian Government State budget. The present Herbarium building which is about 500 m north of the new location was completed in 1970 and was designed for 250 000 specimens. The new Herbarium is to be part of a new Biodiversity Science Centre to be built at the Kensington site of the Department of Conservation and Land Management. \$16.2 million has been allocated and planning is now under way for the first stage that will include the herbarium. Herbarium staff are well advanced in documenting their requirements to house the rapidly increasing collection of WA flora, curatorial spaces and taxonomist facilities. The WA State collection now totals 620,000 databased specimens, comprised mostly of vascular plants with smaller but growing collections of bryophytes, algae, lichens and fungi. Detailed planning of the herbarium is expected to begin towards the end of 2005 and the building is expected to be completed in the latter half of 2007.

Neville Marchant.

## Recent staff changes at MEL

### Jim Ross to retire

In an announcement that saddened all staff at the National Herbarium of Victoria, Chief Botanist, Prof. Jim Ross made it known that he would be retiring on 9 December.

### Michael Bayly returns

In a welcome return to Melbourne, Dr Michael Bayly recently commenced work on an ARC linkage project investigating systematics of the eucalypts. Michael is employed as a Research Fellow at the School of Botany, The University of Melbourne, and collaborates with industry partners, MEL and NSW. Michael and Alison Kellow were previously conducting a biosystematic investigation to determine the morphological and chemical characteristics,

and habitat preferences of all species of *Hebe* in New Zealand at the Museum of New Zealand Te Papa Tongarewa, Wellington.

### VICSEEDS

VICSEEDS (The Victorian Seedbank for Endangered, Endemic and Depleted Species) was recently launched as a partnership between the Royal Botanic Gardens Melbourne and the Millennium Seed Bank Project (K). The project is being led by Neville Walsh, Senior Conservation Botanist, and two new positions have been created to run the project. Jeff Jeanes has left the AVH project to become Seedbank Coordinator, and Helen Rommelaar has been seconded from Collections Branch, as Seedbank Officer until October, when Megan Hirst, formerly a Nursery Technician at the Royal Botanic Gardens Melbourne, will take on the role.

### Collections Branch

At the beginning of August Katy Sommerville (formerly Manager, Collections) left MEL to commence a PhD on plant physiology - precise topic and locality still undecided. A review of Collections management is to be held and the role of Collections Manager will be advertised after completion of the review.

Cassia Read has left the position of Fungimap Coordinator, to start a PhD on soil crusts at The University of Melbourne.

Bryan Mole, completing a PhD on *Phebalium* (Rutaceae), has left the AVH project to conduct research on Australian plants of horticultural interest.

Frank Udovicic

## Imminent changes at the top in Australian herbaria

Two positions as head of two of Australia's government herbaria have been recently advertised.



One of these is the replacement for Jim Ross, whose retirement as head of the National Herbarium of Victoria is discussed in Frank Udovicic's report.

The other is the re-instated position of Curator of the Northern Territory Herbarium. This has been necessitated by the promotion of Greg Leach in a recent restructure to Director of Biodiversity Conservation Division, the portfolio of which includes the Herbarium.

A decision on the State Herbarium of South Australia's head is expected soon.

## French gardens in the news again

Following on from the article on the rediscovery of the French gardens of the d'Entrecasteaux expedition in Tasmania (Barker 2004) it has just been announced that the northeast peninsula of Recherche Bay in southern Tasmania has been added to the National Heritage List. The Australian Government will contribute up to \$30,000 for cooperative archaeological surveys of the area already proposed by the French and Tasmanian Governments.

The media release with linkages to further information and a map of the site can be found at [www.deh.gov.au/minister/env/2005/mr06oct205.html](http://www.deh.gov.au/minister/env/2005/mr06oct205.html).

The map is detailed enough to indicate where Labillardière would have made many of his collections.

### Reference

Barker, R.M. (2004) French gardens rediscovered in Tasmania? *Austral.Syst.Bot.Soc.Nsltr* 118: 4-5

## Showcasing the Wollemi Pine globally<sup>4</sup>

The worldwide launch of the Wollemi Pine will be an occasion befitting Australia's newest icon; a public exhibition at the Royal Botanic Gardens, Sydney, culminating in an international Sotheby's auction of the Collectors Edition trees from 14 – 23 October. Several preview events showcasing the Wollemi Pine will take place in London, Frankfurt and Tokyo in the lead up to the Sydney based auction on October 23.

At Sydney's Royal Botanic Gardens, a grove of up to 100 Wollemi Pines will be installed as part of a special exhibition designed to recreate the secret location where the Pines were first

discovered. Royal Botanic Gardens staff and volunteers will be on hand to interpret the enchantment of the recreated Wollemi Pine forest.

The exhibition will culminate in a Sotheby's auction of the first generation Pines grown from cuttings taken from the wild population. Each Collectors Edition tree can be traced back to its parent in the wild, one of which has been named after Dr Winifred Mary Curtis.

There will be less than 300 trees available as part of 148 lots for auction which will range from single trees to an avenue of 20 trees from the same parent. Six groves of five trees each will be dedicated to conservation organisations in Australia, New Zealand, the UK, Germany and Japan.

The Collectors Edition trees will be up to six years of age and up to two metres tall, and will come with their own authentication certificate and care instructions. Pre registration for the auction and bidding has started and the catalogue is available now from [www.wollemipine.com/news/Catalogue.php](http://www.wollemipine.com/news/Catalogue.php).

The Collectors Edition auction will raise funds for conservation of the Wollemi Pine and other rare and threatened plant species.

The Wollemi Pine will be available in a range of pot plant sizes for indoor and outdoor use, from April 2006.

### Excerpt from Sotheby's Catalogue

Tree 13 - The Curtis

Tree 13 is a nice looking tree located on the steepest ledge in the canyon. It is named in honour of Dr Winifred Mary Curtis, a famous Tasmanian botanist who turned 100 this year. During her distinguished career Winifred made important contributions to science teaching, to botanical research and to the advancement of women in science. She was the second woman appointed to a full-time teaching position at the University of Tasmania, the first woman to be appointed Reader at the University and the first to head a department at the University. When she became aware of the absence of a suitable textbook for biology in high schools she wrote *Biology for Australian Students*, the first Australian textbook for biology. She almost single-handedly built up the modern knowledge of the taxonomy of the *Flora of Tasmania*. In 1945 she began writing the *The Students' Flora of Tasmania* to aid her teaching.

The *Flora* included five volumes and was completed in 1994. Dr Curtis is still an Honorary Associate of the Tasmanian Herbarium.

Height: 15m  
Girth: 17 cm  
Coppices: 9 major

<sup>4</sup> Since this article was received from Maya Catsanis, the auction has taken place. It raised about \$1 million (T. Entwisle, pers.comm.).

## Obituaries

With the deaths of both Dr Winifred Curtis and Dr Dennis Morris, Marco Duretto reports, in his words, on the closure of an important chapter in Tasmanian and Australian botany. Eds.

### Dr Dennis Ivor Morris D.Sc. 1924 – 2005

The Tasmanian botany community was greatly saddened by the recent death of Dennis Morris after his long and courageous battle with illness. Dennis had been an honorary member of staff at the Tasmanian Herbarium for more than 25 years. In that time he authored a number of books (e.g., volumes of *The Student's Flora of Tasmania* with Winifred Curtis) and many scientific papers (one recently submitted). In recognition of his scientific achievements, he was bestowed with an honorary Doctor of Science Degree by the University of Tasmania on the 16<sup>th</sup> of December 2003. A lovely article on Dennis was written by Matthew Baker (2003) to inform the botanical community of this much-deserved honour. In this article Matthew also discusses some of Dennis' botanical career. A more detailed account of Dennis' life and

achievements is being prepared by Gintaras Kantvilas and will be submitted to *Muelleria*.

Dennis' door was open to anyone with a sprig of some unidentified plant, or for just a chat, or for a bit of advice on some botanical matter, or anything really. His friendship, collaboration, expertise, professionalism, incredible breadth of knowledge across many fields, articulate speech, generous nature, humorous look at life, diverse anecdotes and spontaneous quotes from literature will all be sorely missed.

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Marco Duretto  
Tasmanian Herbarium



Dennis Morris in the field.  
Ph. Tasmanian  
Herbarium

## Dr Winifred Mary Curtis 1905 – 2005

The Tasmanian botany community is mourning the recent death of Winifred Curtis. Winifred was a stalwart of Tasmanian botany and as such left a lasting imprint on the psyche of the Tasmanian botanical community. Her massive contribution to Australian, and especially Tasmanian, botany and teaching has been acknowledged in the many honorariums and awards she has received. Just recently she celebrated her 100<sup>th</sup> birthday. A sketch of her life has been given by Kantvilas (1991), with additional information provided by Duretto (2005).

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Marco Duretto  
Tasmanian Herbarium

As well as the references given above there are a number of websites with further information on Dr Curtis.

Significant Tasmanian women site at

[www.women.tas.gov.au/significantwomen/search/winifred\\_curtis.html](http://www.women.tas.gov.au/significantwomen/search/winifred_curtis.html)

A website featuring an ABC Asia Pacific interview with Dr s Curtis and Morris at

<http://abcasiapacific.com/englishbites/stories/s494046.htm>

Rossister, Heather. 'Winifred Curtis AM Dsc: a women of our time', *WISENET Journal*, vol. 42, November, 1996, reproduced at

[www.wisenet-australia.org/ISSUE42/curtis.htm](http://www.wisenet-australia.org/ISSUE42/curtis.htm).

Milestone for a mentor – the display celebrating Dr Curtis's 100<sup>th</sup> birthday earlier this year as reported in Duretto (2005)

[www.utas.edu.au/prue/Unitas/UniTAS\\_No\\_279.pdf](http://www.utas.edu.au/prue/Unitas/UniTAS_No_279.pdf)

Eds.

## Vale John B. Williams 1932 – 2005

John Beaumont Williams was born in Sydney on the 12th February 1932, child of Jack and Lorna Williams, and younger brother of sister Letty. John studied botany at the University of Sydney and graduated with B.Sc. (First Class Hons) in 1953. He was also awarded a G.S. Gaird Scholarship in 1953.

From 1953 to 1956 John demonstrated as a teaching fellow in Botany at the University of Sydney and commenced a Ph.D. in 1956, under the supervision of Dr. Noel C.W. Beadle. During this time he met and later married his fellow postgraduate student, Mary Beth Macdonald, on the 21st January 1956.

Following Noel Beadle's move to take up the foundation Chair of Botany at the University of New England, in August 1957 John and Beth moved to Armidale, for John to take up a lectureship and complete his Ph.D. studies. His Ph.D. studies were halted by the infamous 1958 fire in the Belshaw Building that housed Botany, Zoology and Chemistry. The fire, which started in the basement, destroyed the original herbarium as well as the notes and work for John's thesis (and several other peoples' long-term work/theses)!

From then on, John concentrated on his teaching, fieldwork, collecting, and production of handbooks and plant lists for north-eastern NSW. John spent eight months on study leave at the Jodrell Laboratory (RBG Kew) in 1970 working on the systematic anatomy of Haemodoraceae,

was promoted to Senior Lecturer in 1971, and spent two months in 1980 studying alpine vegetation and rainforest ecology of New Zealand. In 1983 he spent another four months at the Jodrell Laboratory.

During this time John took an active role in the planning for and management of the New England National Park, as member, secretary and chairman of the New England National Park Trust (1960–1977). He was also a member of the New England and Dorrigo National Park Advisory Committees (1978–1990). At the same time (1977–1990), he commenced a long period of involvement with UNE's Continuing Education Ecofest Schools as leader/lecturer. Many of these schools were related to rainforest botany and ecology. John was, and still is, held in high regard throughout north-eastern NSW for his immense knowledge of the region's flora, and his inspirational teaching of its identification, botany and ecology. He is also remembered for his contributions towards the conservation and reservation, in particular, of rainforest areas, especially around Terania Creek and the north coast littoral rainforests, and for his knowledge of eucalypts and work on *Parsonsia*.

John undertook extensive travels in Australia from 1975 to 1990, including visits to herbaria, universities and field collecting for the New England Herbarium (NE). His travels included Tasmania, Perth–Geraldton–Pemberton, Fraser Island, Atherton–Daintree, Townsville, Mt Isa, Darwin–Kakadu, Gippsland, eastern NSW. In



John Williams, centre with hat and flowering specimen, with a big bunch of *Tasmannia stipitata* (from the best flowering shrub any of us have ever seen, on the roadside of the Waterfall Way) as a guest leader on the Monocots 3 post conference field trip to north-eastern NSW organised by Ian Telford and Jeremy Bruhl in 1998. Front left is Kare Bremer, you can spot Prof. Hesse, and the back belongs to Matyas Buzgo. Ph. J. Bruhl

northern NSW, John also worked on the western fall of the divide, including the Pilliga Scrub area and the semi-evergreen vine thickets of northern NSW. The New England Herbarium, now the N.C.W. Beadle Herbarium, holds over 73,000 specimens of vascular plants, nearly 11,500 of these (about 16%) were collected by John Williams. Ian Telford has been responsible for the incorporation of many of these and continues the work on John's backlog of specimens.

From 1981 to 1990, John was the Armidale Chapter Convener of ASBS. In February 1993, he retired from Botany at UNE and was appointed a Fellow of the University in 1994. In retirement, John continued working actively on many of his projects in spite of his deteriorating health. In recent years he was actively contributing to the updated and more extensive version of the 1984 publication *Rainforest Trees and Shrubs*.

John has left a legacy of publications, plant specimens, descriptions of new taxa and a large number of former students at all levels who have benefited from and been influenced by his natural talent. Some of this legacy is listed below including a miscellany of research papers, book chapters, booklets, conference presentations and reports, species he has named, or have been

named after him, and those he collected and recognised as new, but had not yet described. The last will be published as soon as possible, with a range of people as co-authors. John supervised over 70 honours and postgraduate theses. Some of his PhD graduates are also listed. John Williams will be remembered by many professional botanists, taxonomists and ecologists, as well as many non-professionals, for his great love of plants and his ability and patience to share his knowledge and enthusiasm with them.

A memorial service was held for John at the University of New England on the 3rd August 2005. John is survived by his wife, Beth, son Ian, daughter-in-law Jacquie, and grandsons Robert and Matthew.

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### Genus and species described by John B. Williams<sup>5</sup>

#### Genus

Asteliaceae *Neoastelia* J.B.Williams – *Flora of Australia* 45: 493 (1987)

#### Species

Apocynaceae *Parsonsia bartlensis* J.B.Williams – in *Fl. Australia*, 28: 319 (1996)

Apocynaceae *Parsonsia blakeana* J.B.Williams – in *Fl. Australia*, 28: 316 (1996)

Apocynaceae *Parsonsia brisbanensis* J.B.Williams – in *Fl. Australia*, 28: 316 (1996)

Apocynaceae *Parsonsia dorriigoensis* J.B.Williams – *Flora of Australia* 28: 317 (1996)

Apocynaceae *Parsonsia ferruginea* J.B.Williams – in *Fl. Australia*, 28: 318 (1996)

Apocynaceae *Parsonsia grayana* J.B.Williams – in *Fl. Australia*, 28: 316 (1996)

Apocynaceae *Parsonsia howeana* J.B.Williams – in *Fl. Australia*, 49: 616 (1994)

Apocynaceae *Parsonsia kimberleyensis* J.B.Williams – in *Fl. Australia*, 28: 317 (1996)

Apocynaceae *Parsonsia kroombitensis* J.B.Williams – in *Fl. Australia*, 28: 319 (1996)

Apocynaceae *Parsonsia larcomensis* J.B.Williams – *Flora of Australia* 28 1996

Apocynaceae *Parsonsia longipetiolata* J.B.Williams – in *Fl. Australia*, 28: 317 (1996)

Apocynaceae *Parsonsia paulforsteri* J.B.Williams – in *Fl. Australia*, 28: 318 (1996)

Apocynaceae *Parsonsia purpurascens* J.B.Williams – in *Fl. Australia*, 28: 318 (1996)

Apocynaceae *Parsonsia sankowskyana* J.B.Williams – in *Fl. Australia*, 28: 316 (1996)

Apocynaceae *Parsonsia wildensis* J.B.Williams – in *Fl. Australia*, 28: 319 (1996)

Apocynaceae *Parsonsia wongabelensis* J.B.Williams – in *Fl. Australia*, 28: 318 (1996)

Asclepiadaceae *Marsdenia liisae* J.B.Williams – *Austrobaileya* 3(1) 1989

Asteliaceae *Neoastelia spectabilis* J.B.Williams – in *Fl. Australia*, 45: 493, 175 (1987)

Davidsoniaceae *Davidsonia jerseyana* (F.Muell.ex F.M.Bailey) G.J.Harden & J.B.Williams *Telopea* 8(4): 420 (2000)

Davidsoniaceae *Davidsonia johnsonii* J.B.Williams & G.J.Harden – *Telopea* 8(4): 423 (2000)

Gentianaceae *Gentiana wissmannii* J.B.Williams – *Telopea* 3(2) 1989

Myrtaceae *Eucalyptus boliviana* J.B.Williams & K.D.Hill – *Telopea* 9(2): 409 (2001)

Rutaceae *Acronychia littoralis* T.G.Hartley & J.B.Williams – *Brunonia* 6(2) 1984

Winteraceae *Tasmannia glaucifolia* J.B.Williams – *Australian Journal of Botany* 36(4) 1988

### Taxa John B. Williams had been working on towards description<sup>6</sup>

*Acacia nana* J.B.Williams ined.

*Acacia nana* subsp. *eborensis* J.B.Williams ined.

*Acacia nova-anglica* J.B.Williams ined.

*Boronia boliviana* ined. [*Boronia* sp. Bolivia Hill (J.B.Williams 89556)]<sup>7</sup>

*Gaultheria viridicarpa* J.B.Williams ined. [*Gaultheria* sp. Point Lookout (J.B.Williams NE37757)]<sup>8</sup>

*Melichrus hirsutus* J.B. Williams ined. [*Melichrus* sp. Newfoundland State Forest (P.Gilmour 7852)]<sup>9</sup>

*Melichrus* sp. Gibberagee (A.S.Benwell & J.B.Williams 97239)

*Trochocarpa* sp. A J.B.Williams ined.<sup>10</sup>

*Eucalyptus* sp aff. *macrorhyncha*<sup>11</sup>

### Species described in honour of John B. Williams

*Acacia williamsiana* J.T.Hunter

*Elaeocarpus williamsianus* Guymmer

*Eucalyptus williamsiana* L.A.S.Johnson & K.D.Hill

### Some UNE PhD graduates supervised by John B. Williams

Vilaiwan Anusarnsunthorn

Colin Bale

Don Foreman

Gordon Guymmer

Bill Macdonald

Ben Wallace

Prepared by:

Jeremy J. Bruhl (NE, UNE) with help from

Colin Bale (UNE),

Robert and Kate Boyd (Armidale),

Doug Clark (UNE),

Gwen Harden (Valla Beach, NSW),

Ian Telford (NE, UNE),

'Wal' Whalley (UNE), and

Gordon White (Armidale)..

<sup>5</sup> From APNI and IPNI.

<sup>6</sup> JBW's address on these publications should be 'Botany-Centre for Ecology, Evolution and Systematics, The University of New England, Armidale NSW 2351, Australia.

<sup>7</sup> A manuscript co-authored by Williams, J.B. and Hunter, J.T. has recently been submitted.

<sup>8</sup> A name (*Gaultheria appressa* var. *glabra*) is already available for this entity, rendering the phrase name redundant

<sup>9</sup> Manuscripts for *Melichrus* taxa will be completed by Elizabeth Brown.

<sup>10</sup> A manuscript for this species will be completed by J.T. Hunter.

<sup>11</sup> ~-This putative entity was independently observed and noted by John R. Hosking and Jeremy Bruhl in 1995.

Other taxa on this list will be managed via NE.



## Yak(k)as Lelean 1937 – 2005

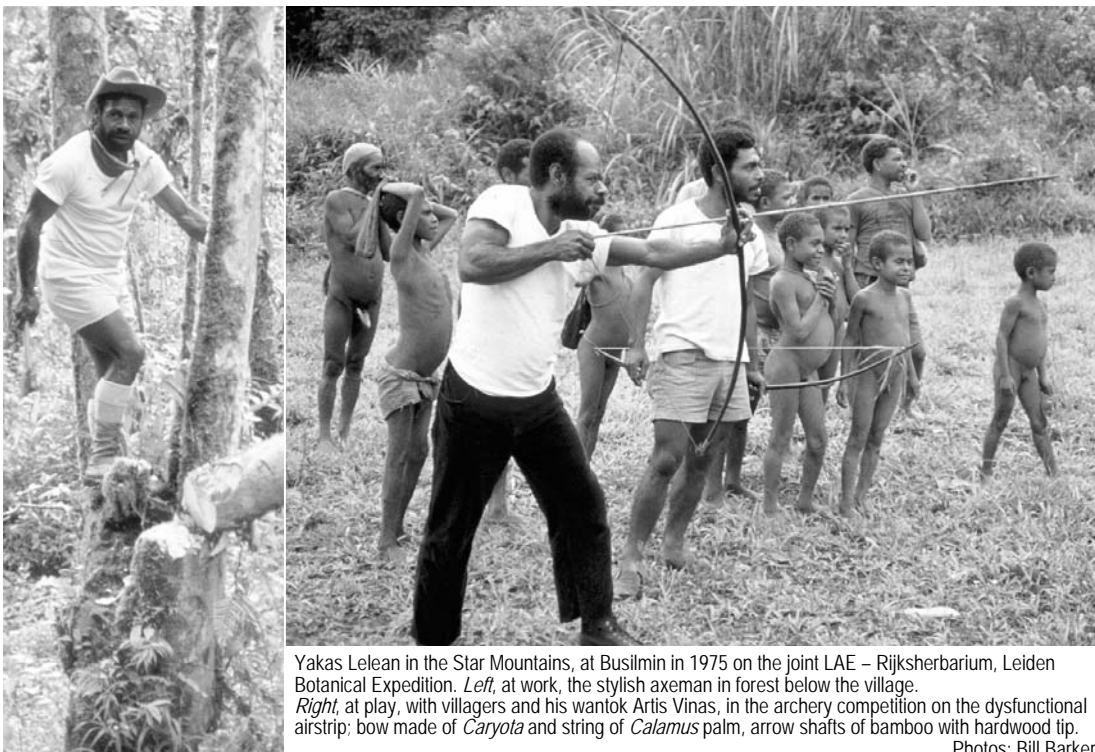
Sad news has reached us of the recent death of Yakas Lelean, a Papuan New Guinean well known to and fondly remembered by most of two generations of expatriate botanists visiting the PNG National Herbarium at Lae in the decades before and after the Country's independence. He will be most remembered for his tireless and willing field assistance, his practical skill and determination in expedition management and plant collecting and unbendingly friendly and optimistic approach to life. He was a guide and mentor for a cohort of green botanists and a stalwart supporter for the older ones.

He assisted, and in many cases was instrumental, in the collection of at least 906 acknowledged specimens (Web ref. 1), almost all of them in the 1970s, many in association with botanists such as Coode, Croft, Craven, Foreman, Henty, Stevens, Streimann and Womersley and also in later times with fellow countrymen such as Joe Wiakabu.

From the Finschaff area on the Huon Peninsula NE of Lae, Yakas was skilled in bushcraft and had a natural understanding of the land, its flora and vegetation, travelling all over the country from lowland rainforest to alpine herbfield. The structures he could throw together effortlessly with an axe and a bushknife had to be seen to be believed and his skill with an axe in

collecting specimens would make a lumberjack weep. An excellent marksman with shotgun and rifle, no fertile branch was safe, even in the tallest forest giant – and the camp often fed very well on wild game. He also was able to render the tedious regime of tinned fish and bully beef into something remotely palatable. When not on field work Yakas was a technical officer in the herbarium – if you are looking at herbarium sheet from LAE, there is an even chance that Yakas mounted it.

Yakas's innate logistic skill and his relaxed rapport with people ensured the success of many expeditions, working through difficult landowners, guides and carriers. Throughout his life Yakas delighted everyone with his sense of humour – surprises like pressed and labelled hornbill heads, cassowary feet and huge fish tails were a sure indication that Yakas was in the field. Those who could speak New Guinea Pidgin experienced his quick wit, and at least some who could not speak the national language regretted it most keenly when infected by the incessant laughter of his audience. With one young botanist who shall remain nameless, he communicated in nothing but Pidgin for the entire six weeks of the field trip, revealing at the end of it, in perfect English, what a great job he had done as a language teacher.



Yakas Lelean in the Star Mountains, at Busilmin in 1975 on the joint LAE – Rijksherbarium, Leiden Botanical Expedition. *Left*, at work, the stylish axeman in forest below the village. *Right*, at play, with villagers and his wantok Artis Vinas, in the archery competition on the dysfunctional airstrip; bow made of *Caryota* and string of *Calamus* palm, arrow shafts of bamboo with hardwood tip. Photos: Bill Barker

Yakas Lelean was a pillar of PNG botany, liked and appreciated by all who had the pleasure to work with him.

Lukim yu bihain, wantok

## Reference

Web ref. 1. Derived from PNGplants database at <http://plantnet.rbg Syd.nsw.gov.au/PNGplants/search.htm>

Jim Croft, Bill Barker,  
Robyn Barker, Barry Conn

## Historical note

### A nickname for Piron

Piron (fl 1791–1797) was the artist on the d'Entrecasteaux expedition in search of La Pérouse during 1791–1794. The botanist on board was J.J.H. Labillardière (1755–1834). When Labillardière published his *Novae Hollandiae Plantarum Specimen* (1804–1806) many of the engravings were based on drawings by Piron. Amazingly Piron's Christian name was not documented in any of the records concerning the expedition – perhaps not so amazing because artists tend to be low in the hierarchy.

The mystery of his Christian name remained (apparently) until an exhibition mounted at the Mitchell Library, Sydney, *Dare to Know* (1998). There he was named Nicholas Piron. I accepted this as valid and proceeded to use it when I

published *Australia: 300 years of Botanical Illustration* (1999).

However, this troubled Edward and Maryse Duyker. In their book, *Bruny d'Entrecasteaux Voyage to Australia & the Pacific 1793–1793* (2001, p. 316), the Duykers discuss Piron's name. Then in Edward Duyker's book, *Citizen Labillardiere* (2003, p. 278) he recorded his doubts. Since then he has conducted further enquiry and has reached the conclusion that there is no substantiated evidence that Nicholas is Piron's Christian name (pers. comm. via M. Fagg).

At best I can apologise for this error and at worst regard Nicholas as Piron's nickname.

Helen Hewson

## CHAH business

### The Australian Plant Census

#### Change of name

After a major consultative and navel-gazing exercise, the Census Working Group came up with a list of around 14 possible official titles for this project, ranked in order of preference by a fiendishly complicated voting system. This list was passed to CHAH, the overlords of the project, and they have decided that the official title will henceforth be Australian Plant Census (APC).

#### The EPBC taxa

One of the conditions for funding of the project was that we would give first priority to reviewing the nomenclature of all those taxa currently listed as extinct, rare and endangered under the Commonwealth's *Environmental Protection and Biodiversity Conservation Act* (EPBC), accompanied by recommendations on how the existing nomenclature should be revised to bring it into line with the Census.

This task has been completed. It involved over 1200 taxa. Despite the fact that many had been added to the list relatively recently, we found that around 10% required changes, an instructive

message on how volatile plant nomenclature still is. Even since this report was delivered in July, a handful of additional taxa have changed, and one of the tasks of the Census project will be to continually update this important list, to ensure that conservation efforts are based on contemporary nomenclature.

#### The family treatments

The project has now entered its core phase, with census and synonymic information being compiled family by family. The decision of the Working Group was that we would begin with those families for which recent country-wide treatments were available, particularly, but not exclusively, those families already treated in *Flora of Australia*.

Census compilation has now been completed for *Flora of Australia* volumes 3 and 18, and draft lists have been circulated among the Working Group. The first parts are agreed, and work has begun on loading the data to APNI. Serendipitously, the *Flora Malesiana* treatment of *Ficus* appeared during consideration of Moraceae from *Flora of Australia* vol. 3, and this, together with Dale Dixon's input means that we now have a very contemporary view of the nomenclature of this complex group. Work has begun on compilation of lists from vol. 16, and

this will be followed by volumes 17A and 17B to complete the Proteaceae.

Thus, in the next few weeks the following families will start to appear on the Census web site with the full complement of accepted genera, species and infraspecific taxa, and with full synonymy (or as complete as we can get it):

Balanopaceae  
Betulaceae  
Cannabaceae  
Casuarinaceae  
Combretaceae  
Fagaceae  
Gunneraceae  
Haloragaceae  
Hamamelidaceae  
Lythraceae  
Melastomataceae  
Moraceae  
Onagraceae  
Podostemaceae  
Punicaceae  
Sonneratiaceae  
Thymelaeaceae  
Ulmaceae  
Urticaceae

They will be followed by Elaeagnaceae and Proteaceae.

Please remember that this is a work in progress and that not all of the above will necessarily be available when you rush from reading this to the website. However we encourage you to visit it regularly and watch progress. We also encourage feedback on the content: have we missed some taxa or synonyms; have we failed to mention alternative taxonomies; are there other errors? The other thing you will need to remember is that the taxonomy we are presenting is that arrived at by consensus. It is not the only possible view of the world, nor is it necessarily the best. It is that view that CHAH has agreed is a useful working model. It is permanently open

to change, and suggestions on alternative or modified views will be considered, and acted on as appropriate.

We are also very keen to receive direct input on parts of the Census that have not yet been developed. If you have a detailed synonymy for any taxonomic group, and you are prepared to make it available to the Working Group as the basis for their compilation, please contact me or your local Working Group member to discuss how we might access your data.

Some of you will be aware that the Working Group has been preoccupied in recent weeks with in-depth discussion of a few particular cases. These arise when current usage is split between States or Territories, or where there are competing recent taxonomies. In the spirit of trying to arrive at a true consensus we will resort from time to time to asking proponents of competing views to provide the Working Group with brief summaries of their positions, allowing us to weigh the arguments on both sides. I would like to thank those who have already been involved in these exercises – your contributions have been most welcome and helpful – and to encourage others to contribute, as appropriate, in the future.

#### Contact information

Brendan Lepschi and I will be contributing a paper to the CHAH /ASBS conference in Brisbane in November, and will be very happy to discuss the project with anyone who can get there. I can be contacted at any time by email on [tony.orchard@deh.gov.au](mailto:tony.orchard@deh.gov.au). There is a Working Group member (and backup) in each of the State and Territory herbaria (see June ASBS Newsletter for names), and these members will pass on information to the project as well. Background information is found on the CHAH website ([www.chah.gov.au/chah/apc/index.html](http://www.chah.gov.au/chah/apc/index.html))

Tony Orchard  
APC Project Coordinator

## ABRS report

### ABRS Advisory Committee

The Advisory Committee met in Canberra on 7 September and was delighted to meet with the Parliamentary Secretary for the Environment and Heritage, the Hon Greg Hunt MP. The Parliamentary Secretary told the Committee how much he appreciates the work being done by them and the whole taxonomic community.

The Parliamentary Secretary then officiated at a public launch of a number of recent ABRS publications: *Native Plants of Christmas Island*, *Flora of Australia Vol 44B* (Grasses 3), *Fabulous*

*Flatworms: a guide to marine polyclads*, *Key to Australasian Liverwort and Hornwort Genera* (CDRom) and *Native Earthworms of Australia II* (CDRom). Mr Hunt told the audience that the Australian Government is committed to good science and to improving knowledge of biodiversity and sharing this knowledge with the broader Australian and international community. He complimented ABRS on the quality of its productions and thanked the many contributors from other organisations who work with us to present this information in a variety of forms.

#### **Whitley Award**

Congratulations to all involved in the production of the CD-Rom *Fabulous Flatworms: a guide to marine polyclads* which won a Certificate of Commendation from the Royal Zoological Society of NSW at the recent Whitley Awards.

#### ***Fabulous Flatworms: a guide to marine polyclads***

**L.Newman & L.Cannon**  
**CD-Rom — ABR/CSIRO Publishing, 2005**  
**ISBN 0 643 06964 X**  
**Available from CSIRO Publishing**

#### **Participatory Program**

Fifty-six grants having a total value of \$1.532m were awarded for 2005/06. All grantees have been notified and funds are being distributed.

Applications for the 2006/2007 Grants will close on **10 November 2005**. Applications must be submitted using the current application form available from [www.deh.gov.au/biodiversity/abrs/admin/grants/index.html](http://www.deh.gov.au/biodiversity/abrs/admin/grants/index.html). A reminder that applicants need to conform to the guidelines when preparing applications, otherwise the application may not be considered.

The Advisory Committee has noticed a drop in the number of 'flora' applications in recent years which has resulted in a smaller proportion of the funds being allocated to flora projects. A greater number of applications will help ensure a higher level of funding for flora research.

ABRS also awards **postgraduate scholarships** to foster taxonomic research training compatible with National Research Priorities. One award is given each year and includes a stipend and research support funding for three years. Applications for 2006 close on 3 November 2005.

Applications for the current round of **student bursaries** recently closed and 8 awards are being offered. The next round of applications will close on 10 March 2006.

Enquiries about grant conditions or applications for any part of the Participatory Program should be directed to the ABRS Business Manager.

#### **Publications**

***Native Plants of Christmas Island*, by J.Claussen**  
**Flora of Australia Supplementary Series, Number 22**  
**ABRS/Christmas Island Natural History Association, 2005. ISBN 0 642 56831 6**  
**AUD 28.00 (price includes surface postage for overseas orders, and GST and postage within Australia). Available from ABRS**

This is a beautiful book describing 118 of the more common native plants on Christmas Island. In addition, each species is illustrated in colour, and flowering and fruiting times are given. There are six colour pages showing some of the drift seeds found among the flotsam and jetsam on the island shores.

***Species Plantarum, Flora of the World Part 1: Saururaceae*, by A.R.Brach & Xia Nian-he.**  
**AUD 13.50 (price includes surface postage for overseas orders, and GST and postage within Australia). Available from ABRS.**  
**Published by ABRS for the Species Plantarum Steering Committee of the International Organisation for Plant Information (IOPI).**  
**ISBN 0 642 56841 3**

Saururaceae is a family with 4 genera and 6 species found in Asia and North America. Although small, it has been the subject of numerous studies, being an interesting "primitive" angiosperm and closely related to Piperaceae.

#### **Coming Soon**

- *Biologue* - ABRS's annual magazine, with articles about ABRS-funded research, details of grants, and news about the program. Out in October.
- *Fungi of Australia (Hygrophoraceae)* - At the printer. Publication in late September or early October.
- *Flora of Australia Volume 51*, the first of approximately four Moss volumes, should go to press in late October.

Mary Colreavy  
Director

### **ASBS Book Sales**

Credit card payments are now acceptable for ASBS publications.

Please fax relevant personal and credit card details to the Book Sales Officer, Helen Thompson

Fax: 02 6250 9448

## ABLO report

So the 49th ABLO term comes to a close. The past three months have been as busy as usual with requests and visitors, with an increase in the latter as people called in going to or from the IBC in Vienna.

The bombings on 7 July, while they did not affect anyone at Kew directly, nonetheless left most disturbed at the senseless violence. The following day, the flag was flown at half mast on the large flagpole in the Gardens, and on 14 July the herbarium staff and visitors observed two minutes' silence at the front gates.

Four significant new books have just been published by Kew. They are *Legumes of the World* edited by Gwilym Lewis, Brian Schrire, Barbara Mackinder and Mike Lock; *World Checklist of Palms* by Rafaël Govaerts and John Dransfield; *A Monograph of Cupressaceae and Sciadopitys* by Aljos Farjon; and *A Bibliography of Conifers* (2nd edn) also by Aljos Farjon.

Early in August we visited the herbarium in Oslo. Although the Australian material of groups that I looked at is relatively small, it includes collections by Ludwig Preiss and Max Koch.

### Kew's Economic Botany collection

Although I have toured this collection (housed in the Banks Building just south of the herbarium) before, I have not consulted it until a request took me there. It would seem that few if any Australians have used it, at least in recent decades. I was amazed to find a rich resource that includes possible type collections. I will be writing a paper on some items.

### Visitors

- Rosie Jones, Melbourne (items associated with Ferdinand Mueller)
- Sue Patrick, PERTH, Philippa O'Brien, University of Western Australia, and Bernice Barry and Mike Rumble, Margaret River (specimens collected by Georgiana Molloy)
- Bruce Maslin (*Acacia*, including a demonstration of WATTLE)
- Philip and Emma Short, DNA (Asteraceae et al.)
- Michele Adler, Burnley College, Melbourne (cultivar description project)
- Bob Webber, Melbourne
- Andrea Hope, Darwin (to see the herbarium)
- Jean Dennis, Benalla, Vic. (to display and discuss her paintings of *Brachychiton*)
- Alison Shapcott, University of the Sunshine Coast (working with Mike Fay on DNA of Madagascar rare plants)
- Jeremy Bruhl, University of New England (Cyperaceae)
- Caroline Gross, University of New England (Sapindaceae)
- Darren Crayn, National Herbarium of New South Wales (Elaeocarpaceae)

- Judy West, Plant Biodiversity Centre, Canberra (to discuss the GBIG/AVH scanning project)
- Alex Chapman, Western Australian Herbarium (to discuss herbarium design)
- Peter Weston (Orchidaceae, at the Jodrell)
- Catherine Jordan, Australian National Botanic Gardens (Library)
- Roger Hnatiuk, Canberra (*Eremaea*)

### Other

I managed to avoid the weather in my earlier reports. In summary, the winter in London was generally mild and dry (just one extended cold spell in late February/early March) and spring and summer have also been mild (a few warm days in May, June and August). There has been much talk of drought but the past month has brought a return to wetter weather.

Having first been ABLO in 1967–68, it is interesting to compare the two terms. In 1968 the Herbarium expanded into Wing D, with the particular gain in having most of the library finally in a single room. The main building additions since then have been the addition of another floor to Wing D and the large underground storage area in the central quadrangle. Staff responsibilities were restructured some years ago from a purely geographic to a combined geographic/systematic one. Only one member of staff from that year has not yet retired – Peter Edwards in the Fern Section. In daily operations there has been the huge change from being entirely paper-based to largely electronic: so many resources are now electronic, most correspondence is by email (I've had only three requests by the post), and records are now essentially electronic (with the associated problems of secure storage and access to future users). Requests were far more numerous this time. In the Gardens, the Australian House has become the Evolution House, the T-range of glasshouses has gone and been replaced by the Princess of Wales Conservatory, and the Economic Botany collections have gone to the Banks Building. Currently a new Alpine House and the extension to the Jodrell Laboratory are in progress. Another striking difference is that the second term, even though three months shorter, went at least twice as quickly as the first!

The ABLO for 2005–06, Dr Juliet Wege from Perth, spent 15–18 August at Kew for familiarisation. I wish her well in the 50th ABLO term.

Alex George  
August 2005

## Conference reports

### International Botanical Congress, Vienna, Austria

More than 4,000 delegates from all regions of the world attended the XVII International Botanical Congress (IBC), held in Vienna 18-23 July 2005. We would categorise it as being memorable for its good organisation, excellent facilities, and the opportunity to visit many historic collections and places in and around the city. The IBC was held in a big new conference centre to the NE of the old city (at the second train station across the Danube) – well-designed, with all the lecture theatres, poster areas, company displays, coffee shops, post office, etc., under one roof.

Like all such big congresses, it was hard to catch up with everyone you wanted to. Among the Australian systematists were our Sydney colleagues Barbara Briggs, Maurizio Rossetto, Peter Weston, and Glenda Wardle, as well as Jeremy Bruhl, Carolyn Gross, Glenda Wardle, Arthur Chapman, Mike Crisp, Les Pedley, Andy Gillison, Tony Orchard, Judy West, Philip Short, Andrew Drinnan, Dan Murphy, Alex Chapman, Amanda Spooner, Gillian Brown, Adele Gibbs, Gillian Perry and Juliet Wege (on her way to take up the post of ABLO at RBG Kew).

Only computer projection facilities were used – shades of the future for presentations. You took your CD or USB stick to the 'check-in' room where a red-vested young worker copied your PowerPoint presentation into the correct folder for that symposium/talk number on their network. Then, when it was time to speak, another red-vested worker was there to bring up your PPT on the laptop present on every podium. Altogether a slick, efficient operation, and a high standard for Melbourne to match in 2011.

Yes, the next IBC will be held in Melbourne in late July 2011 – just on 20 years after the Sydney Congress, and only the second IBC to be held in the southern hemisphere. The Australian ambassador to Austria and Judy West spoke at the closing ceremony, inviting everyone to enjoy warm and sunny Melbourne in 2011 – well, there we lie: they didn't actually dwell on the weather in our southern city at that time of year! Unfortunately, the timing is apparently dictated by the northern hemisphere summer holiday season, although it wasn't clear to us why the IBC couldn't be held in late August, as was done in Sydney in 1981 and in Yokohama in 1993.

As always, the IBC was not just a chance to hear talks or read posters about a fascinatingly wide range of research but it also provided a great meeting place to forge new collaborations with

colleagues from all over the world. The chat was slotted in between sessions: 14 symposia with 13-17 speakers in each, and 13-17 of these symposia running concurrently. And then there were the posters: all 2,700 of them, presented in two poster sessions, each of two days, occupying most of one floor of the conference centre. The overall standard of poster preparation was most impressive, influenced no doubt by the now wide availability of image and design software.

There was an extremely diverse range of talks and posters on genetics, cell biology, developmental biology, systematics, population biology, physiology, ecology, biogeography, palaeobotany, ethnobotany, conservation, databases, biotechnology, and global change impacts, etc. Many symposia dealt with the systematics of specific groups ranging from very large clades (e.g. eudicots, ferns) through various orders (e.g. Ericales, Fagales, Proteales) and families (e.g. Bromeliaceae, Moraceae, Vitaceae), to genera (e.g. *Viola*, and a session on 'giant genera' such as *Astragalus* and *Solanum*). Scheduling symposia to minimise clashes is a major challenge for such large meetings, and it proved impossible to get to all the symposia of interest. A few that were particularly worthwhile were:

Several well-attended symposia on electronic dissemination of information about species and specimens. Numerous herbaria in other parts of the world are following the lead of *Australia's Virtual Herbarium*, databasing their specimen records and making them widely available via the Web for use in conservation activities. As one speaker put it, the stars will be here to look at in a thousand years' time, but many of today's plant and animal species will be gone in ten years unless we take action quickly. Many speakers emphasized that the value of data lies in their use, underlining the need for collaboration to ensure wide availability of data, common data exchange standards, and maintaining data quality in such electronic projects.

Biogeographic symposia (also well-attended), with one interesting symposium devoted to New Zealand. It was notable that long-distance dispersal in geologically recent times was recognised as being more important than previously thought for Southern Hemisphere groups occurring on more than one land-mass. For example, New Zealand seems to have had frequent colonisations via water or wind in this way.

Horizontal gene transfer excited attention. More than 40 cases of this are known, thanks to interactions between a parasitic plant and its host, or biological vectors such as viruses or sap-sucking insects, or possibly even by pollen from the 'wrong' species being deposited on a female flower. *Amborella* in New Caledonia shows 20 cases of this; the 'alien' gene sequences are suspected of coming from other plants growing around it, including mosses and lichens. Grasses commonly show this, too. This gene transfer has major implications for plant-breeding and to a lesser extent for phylogeny reconstruction.

New analytical techniques for discovering the deep history of plant lineages were presented. The fossil record is inadequate to provide fine detail on the past for most plants, but new DNA-based techniques for discovering the genealogy of living species and estimating when they first evolved are being actively developed. These molecular dating methods usually incorporate fossils as calibration points for molecular clocks, and so very usefully integrate the complementary perspectives of the fossil record and DNA sequencing.

Before the main congress, about 150-200 botanists joined the cut and thrust of the week-long Nomenclature Section meeting, debating a wide range of proposed changes to the *International Code of Botanical Nomenclature*. These sessions were held in a university lecture theatre on the NW side of the old city, with very pleasant sunny courtyards to sit and enjoy a chat or argument over a beer or a bratwurst.

The most contentious matter, attracting earlier wide public attention here and elsewhere (resulting in over 100 emails to Dick Brummitt, secretary of the relevant committee), was the proposal to conserve the name *Acacia* with a different type, the Australian species *A. penninervis*, to avoid changing the names of more than 900 spp, mostly Australian, from *Acacia* to *Racosperma*. This proposal was very narrowly supported (in fact, 54.9% of the vote was against accepting it, but that was less than the 60% majority vote that would have been needed to defeat the proposal). The Section has traditionally required a super-majority of 60% in voting but as usual this was not clear to some people, particularly those from non-English-speaking backgrounds. The *Acacia* case was not easy to decide, and whichever way it went was going to disturb a lot of people. It has caused great upset amongst botanists working on the African and Latin American spp., since those '*Acacia*' species now have to be re-named in other genera: mostly in *Vachellia* or *Senegalia*. Whether this case will set a precedent for conservation of well-known genera with new lectotypes remains to be seen.

Another contentious matter was whether to allow electronic publication of new plant names as well as publication in hard-copy. K LW had chaired a Special Committee to consider this matter, but its published proposals were given a strongly negative vote in the postal vote and were not considered by the Section. However, an informal group of those present worked during the week on various new proposals, which were passed after much discussion. They are mostly new Recommendations rather than changes to the Articles and still do not permit formal publication of new names electronically but are the first step towards accepting electronic publication as it becomes a mature, stable technology.

The usual proposal to abandon the requirement for a Latin diagnosis was defeated (also as usual, but the positive vote is growing).

Names of suprageneric taxa had been considered by another Special Committee, of which PGW was a member. Some of the proposals that affect such names were accepted, notably:

- Art. 11, Prop. F changed the sentence 'The principle of priority is not mandatory for names of taxa above the rank of family' to 'The principle of priority does not apply above the rank of family'.
- Art. 13, Prop. A made Jussieu's *Genera Plantarum* (1789) the starting date for suprageneric names of Spermatophyta, Pteridophyta, Sphagnaceae and Hepaticae
- Ted Ahti's proposal from the floor to exclude parenthetical authors in suprageneric names. Although changes in rank are not combinations as such, it has been customary to give parenthetical authors for a *stat. nov.* as a link to the earlier usage of the name. This practice will now not be allowed under the Code.

Proposals to clarify Articles dealing with doubtfully published names (*nomina subnuda*) by adding more examples of what should and should not be regarded as published were mostly defeated, which is unfortunate since this question of valid or effective publication causes so much argument.

The section on orthography is being edited somewhat, but most of the admirable attempt by Paul van Rijkvorsel to re-write that section in something closer to plain language and doing away with rules masquerading as Recommendations was voted down.

Those wanting more detail will be able to read it in the edited transcript of the Nomenclature Sessions, which will be published as usual in *Englera*. The new *ICBN* is expected to be out in about 12 months' time.

Many systematists took advantage of being in Vienna (Wien) to visit the Natural History Museum herbarium (W), which is one of the great old European collections. There are relevant types for many Australian groups, including all of Buchenau's Juncaceae herbarium, a good selection of Sieber material, and a scattering of other early collectors such as Drummond, Roe and Caley.

Altogether, it was a very satisfying IBC. Now we all have the major challenge of putting together an equally good program for July 2011.

Karen Wilson, Peter Wilson and Darren Crayn  
National Herbarium of NSW  
Royal Botanic Gardens, Sydney

## Taxonomic Databases Working Group at St Petersburg

The annual meeting of TDWG (The Taxonomic Databases Working Group of the International Union of Biological Sciences) was held in September in St. Petersburg, a wonderful city if you don't stay out beyond 2 a.m. (all the bridges on all the rivers open to let ships through at that time), travel on the subway (some very sophisticated scams relieved several members of wallets and digital cameras), or allow the locals to determine how many rounds of vodka will follow a meal.

2005 is the 20<sup>th</sup> anniversary of the foundation meeting of TDWG. While much of its activity has been invisible to many parts of the taxonomic community, TDWG has been instrumental in developing and ratifying standards to facilitate better management and communication of biodiversity data. Standards such as HISPID (developed in Australia and adopted by TDWG, though now superseded by new and more powerful standards), DiGIR and the Darwin Core are allowing biodiversity data to be shared, federated and deployed effectively in the digital era.

Of particular importance are the ABCD (Access to Biological Collection Data), TCS (Taxonomic Concept Standard) and SDD (Structure of Descriptive Data) standards, all ratified at this meeting after 2-5 years of work by specialised subgroups. Even though most taxonomists will never actually see these standards and many will scarcely be aware of them, sooner or later every taxonomist will use them daily.

Australia is well represented in TDWG. Of those involved in the organisation Arthur Chapman, Paul Flemon (Australian Museum), Lee Belbin and Kevin Thiele attended the St. Petersburg meeting and have a continuing involvement in many of the subgroups. Lee Belbin, in particular, is playing a crucial role as the leader of a project funded by the Moore Foundation to create a more sustainable structure for TDWG's work.

The following presentations were particularly relevant to taxonomic work in Australia.

Reed Beaman (Peabody Museum) and Bryan Heidorn (University of Illinois) reported on

aspects of HERBIS, a large NSF-funded project to automate the digitisation of label data from herbarium specimens. Scanned images of labels (ideally, cropped from a scanned image of the whole specimen) are passed through Optical Character Recognition (OCR) software which attempts to convert the label image into a text file of the label data. Labels that fail OCR processing (such as handwritten labels) are passed through a Natural Handwriting Recognition (NHR) algorithm which, with suitable training, may often be able to effectively digitise even these. Once a text representation of the label has been created, it is passed to a Natural Language Processing (NLP) module which attempts to tag the various Darwin Core attributes of the label (name, collector, locality etc) ready for indexing. In many cases, the whole label can be databased without ever having been read by a human, leaving only intractable ones to be entered manually. The ultimate aim of the project is to provide the whole method as a web service. Visit [www.herbis.org](http://www.herbis.org) to find out more.

John Wieczorek, UCLA Berkeley, Arthur Chapman and others reported on progress by the Biogeomancer Consortium, which seeks to provide freely available tools to georeference, manage and validate free-form text strings describing localities (perhaps tagged automatically by HERBIS). Specimen databases contain many localities with forms such as "14.5 miles from Dubbo towards Parkes", "28 km NNW of Toowoomba" or "Headwaters of the Avon". The Biogeomancer Workbench provides tools that can automatically recognise and process different forms of locality strings, mark up the string, then place a georeference and likelihood polygon on the locality. Other tools can validate the locality against habitat (picking up those ubiquitous cases where a terrestrial locality is all at sea), altitude (comparing the stated altitude with a digital elevation model) and collector itineraries (checking a collection against others by the same collector in the same period, to flag cases where the collector seems to have magically jumped hundreds of kilometres then back again). You can try out the Biogeomancer Workbench at [www.biogeomancer.org](http://www.biogeomancer.org).



Richard White reported on a project to assess ways of detecting spelling errors in taxon names fields in large databases. The project searched a number of large databases for pairs or groups of species epithets that were orthographically or phonetically very similar but differed slightly – amongst such groups were candidates for typographic errors in data entry. Problems encountered were the lack of phonetic matching algorithms for Latin and Greek (apparently phonetic matching can only be done in English and Portuguese!). While relatively few errors were detected in most databases, this is still a useful data-cleaning exercise.

Finally, Chuck Miller (MO) reported on progress in the Botanicus project. Funded by a dream philanthropist (who approached Missouri Bot-

anic Gardens and asked if they had any good projects that no-one else would fund!), Botanicus will fully digitise the 500 historical titles from the MO library that together contain the greatest number of protologues (for taxa in the TROPICOS database). While Australia may not be particularly well-served in the top-500 list, important titles such as Engler's *Das Pflanzenreich* and De Candolle's *Prodromus* will be provided online and fully searchable (look for [www.botanicus.org](http://www.botanicus.org), coming soon to a computer near you, and see further note on p. 32).

TDWG meets once a year, but many activities, particularly of the subgroups, continue through wiki forums. See the TDWG website at [www.tdwg.org](http://www.tdwg.org) for more.

Kevin Thiele

## Coming conferences

### International Botanical Congress 2011 – Melbourne

Australia is to host the next International Botanical Congress (IBC). We were officially notified during the recent IBC in Vienna that our bid submitted earlier this year had been successful. This was ratified at a meeting of the International Association of Botanical and Mycological Societies (IABMS) Board on Tuesday 19 July and overwhelmingly supported by delegates at the plenary session of the Congress on Saturday, 23 July.

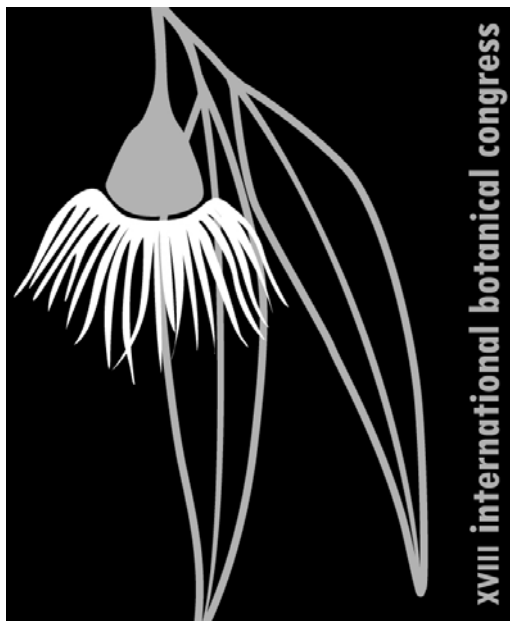
The XVIII Congress will be held in Melbourne during July 2011. The Melbourne Convention and Visitors Bureau (MCVB) greatly assisted with the development of the bid and have been following through on several aspects since the Vienna meeting. The Melbourne Congress will be held in the new Convention Centre (near the current Exhibition Centre) which is to be completed at the end of 2008.

During the XVII

Congress in Vienna we took the opportunity to do the first lot of delegate boosting. A small booth was "manned" by two enthusiastic MCVB

representatives who provided participants with a range of promotional material:

- Melbourne touristy flier – the Yarra even looked blue
- A4 front & back designed flier with 2011 logo, dates, venue, scientific program information, field trip information and potential committee
- IBC 2011 fridge magnets
- Clip-on koalas
- Balloons
- Photographic books on Australia (for perusal only)
- Brochures provided to us by the Australian Embassy in Vienna



**IBC 2011**  
MELBOURNE, AUSTRALIA

All items were extremely popular and we were left with none of the 3000 koalas and fridge magnets! Let's hope they end up in prominent places as a reminder.

At the Closing Ceremony (Sat July 23):

- we arranged for Australian Ambassador to Austria, Deborah Stokes, to attend – she spoke about Australia and Melbourne and why delegates should visit
- Judy West made a presentation about the 2011 Congress and early plans and ideas in terms of organising committee and involvement of scientists beyond Australia, scientific program and field trips
- 4½ minute Tourism Australia DVD was shown – it didn't make the Australians cringe too much, and non-Australians seemed to enjoy it.

All delegates seemed very keen to hear the next Congress will be held in Australia – and only some realised that this means winter in Melbourne! We have no choice in these dates as the IBC has to coincide with the northern hemisphere university breaks. Hopefully we can balance it with the thought of great field trips in the northern half of the country.

The Vienna Congress was a great success, with a wide range of plant sciences covered in the symposia and excellent networking opportunities. The numbers are a little daunting:

- 1250 speakers
- 330 symposia; c. 15 concurrent sessions
- 2700 posters
- Delegates from 170 countries (good numbers from Australia across the disciplines).

Much was learnt from the organisers of the 2005 Congress and the 1999 Congress in St Louis as well as discussion with delegates. We have an enormous task ahead of us and even though it may seem a long way off now it will come upon us faster than we wish I'm sure.

We put together an Organising Committee at the time of developing the bid and most of those people are still keen to be involved, although some of the roles may change. The School of Botany, University of Melbourne and CSIRO Plant Industry have agreed to act as the host organisations. A professional conference organising body will be appointed by tender in the next couple of months.

We have time to develop a stimulating scientific program that will accommodate all aspects of the botanical sciences, particularly the core disciplinary areas, such as:

- Ecology and the environment
- Conservation and restoration biology
- Population biology
- Systematics and evolutionary biology

- Physiology and phytochemistry
- Botanical diversity and taxonomy
- Cell Biology
- Molecular Genetics
- Physiology and Functional Genomics
- Structure and Development
- Botanical History
- Ethnobotany
- Bioinformatics, biological databases, knowledge management

In addition, the scientific program will need to incorporate symposia that look “over the horizon”, fundamentally re-examining the way we think about how plants evolve, function, and exist in a complex and changing environment as we approach the 2011 Congress. Further, with Australia's position in the southern hemisphere and its gondwanic origins and consequent evolution of a unique biota, we have the opportunity to develop other symposia that provide means to explore the diversity and evolution of Oceania and the gondwanic floras. Some of these more specialized symposia might include:

- Urban plant ecology and conservation
- Restoration ecology
- Genes and genome evolution
- Climate change
- Function and development
- Biogeography of Oceania
- Biosecurity – invasives and invasiveness
- The rhizosphere
- Evolution of gondwanic floras
- Sustainable agriculture
- Systematics and botanical diversity in the genomics age
- Tropical forests

A critical drawcard to encourage delegates to come to the Melbourne IBC will be to host an outstanding range of field trips. Most still regard Australia as a long way to travel, so inclusion of opportunities for delegates to experience the diversity of Australia and its distinctive flora will be essential. Field trips need to cover a broad spectrum of vegetation types and a good cross section of the species, particularly the endemic groups and those for which the Australian flora is widely known. The bid document included some potential field trips across all states and territories, and clearly a coordinated approach will be needed so that trips of varied duration, accommodation type and degrees of difficulty are offered. Please feel free to let me know if you have some suggestions.

Judy West  
judy.west@csiro.au

## Book reviews

### Fungi Down Under: another Fungimap achievement

Graham Bell

State Herbarium of South Australia

**Fungi Down Under – The Fungimap Guide to Australian Fungi**, by Pat Grey and Ed Grey (Fungimap, c/- Royal Botanic Gardens Melbourne)

“Fungimap” is an on-going project which was commenced in 1995 by the Royal Botanic Gardens Melbourne and the Field Naturalists Club of Victoria. It seeks to contribute towards what had often seemed a rather superhuman task – that of documenting the diversity and distribution of Australian fungi. By comparison with plants, our knowledge of fungi is minimal and we have only (sometimes wildly disparate) estimates of species numbers in Australia. It is thought there are at least five times as many species of fungi as of plants, yet the amount of research effort and available publications on these two groups is probably inversely proportional. Much past research has been focussed upon a relatively small number of fungi of pathogenic importance, either for medical or agricultural reasons.

The Fungimap project aims to enlist largely untrained members of the public to assist with documenting the Australian distribution of a manageable number (100) of recognisable fungal taxa (“target” species) by means of sight records. Whilst the scientific validity of these records is lessened by the lack of voucher material for most, this is counterbalanced in part by a judicious choice of non-confusable taxa for investigation. The list of taxa includes many common species of wide distribution, but also a number of apparently rare species for which

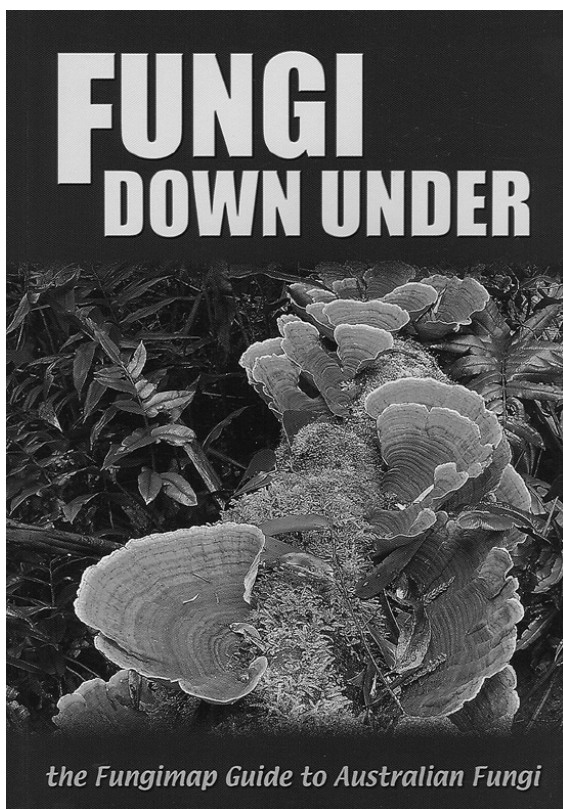
further records are sought. To date, at least 20,000 records have been received from 300 volunteers and the data collated into distribution maps.

One of the stumbling blocks to such a project was the inadequacy or non-availability of literature relating to most Australian fungi, especially for the non-mycologist.

This book aims to cover the deficiency, at least in relation to the Fungi-map target species. Whilst its title suggests it is a “guide to Australian fungi”, that seems a slightly extravagant claim – perhaps an “introduction to Australian fungi” would have been better. The target list covers many, but by no means all, of the major groups of larger fungi, but this is not readily clear until one delves at some length into the book.

Given these stated limitations of the book and the project, the result is a clearly produced and beautifully presented publication comparable with little else relating to Australian fungi. It is consciously aimed at the “informed layperson” market and

well fulfils this role, not least because the authors are from this background. Whilst scientifically accurate and sufficiently detailed, the book does not get “bogged down” in unnecessary complication or academic distinctions. Additional information contained in several appendices is very valuable, especially relating to derivations of the scientific names of the taxa (Appendix 4) and “alternative” names for the taxa used in other literature (Appendix 2). Perhaps “non-current names” may have been a better title, but this is still valuable linkage to



other publications. There may, however, have been value in incorporating the name derivations with the main descriptions, rather than in a separate list.

Explanations of fungal biology and morphological diversity are excellent and well-presented. The descriptions of taxa are admirably clear and concise, closely linked with superb photographs. The distribution maps from Fungimap data reveal most interesting distributions in many cases. Extremely valuable for the field observer are the comparisons with "look-alike" species.

Whilst there are many ways of dealing with the problems of pronunciation of scientific names, one is presented in Appendix 3 in the form of a rather quirky phonetic approach, again avoiding the overly academic. Whilst one has reservations about invented "common names" for plants or fungi (do we really still need these in our supposedly educated society?), at least there is a consistency of presentation.

All in all, this publication deserves high praise and a wide exposure. It will be valuable to mycologist and amateur alike, and its reasonable price will further aid its appeal to a wide audience.

## Inland Australian plants

Review by Helen Vonow and Robyn Barker  
State Herbarium of South Australia

**A guide to plants of inland Australia,**  
by Philip Moore  
New Holland Publishers (Australia) Pty Ltd.  
RRP \$49-95

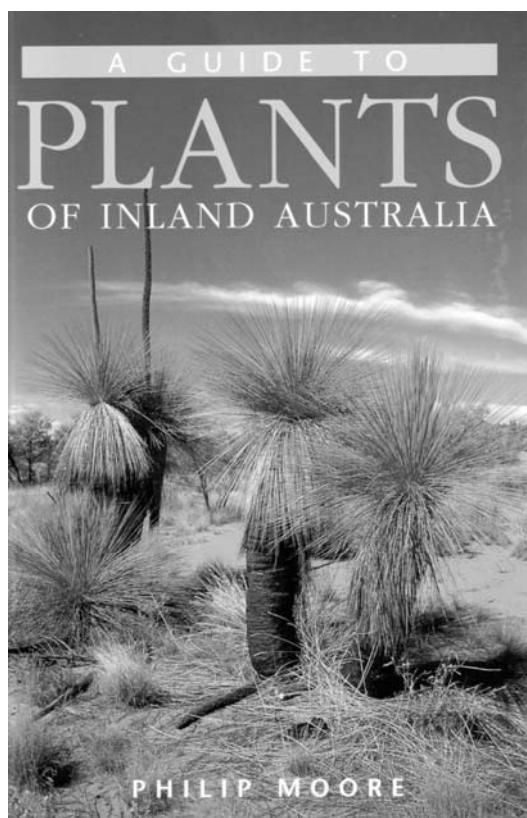
This is a nice-sized glossy book of 500 pages with lots of great photographs of flowering plants of the more obvious and spectacular flora of Australia. The title says it covers plants of inland Australia but this is misleading since it covers many species from coastal Western Australia, even, in Appendix II, covering the plants occurring between Shark Bay and Kalbarri. The coverage in reality is very similar to that of the *Flora of Central Australia* except for the inclusion of plants like boabs, figs, *Bossiaea bossiaeoides*, *Jacksonia dilatata*, *Barringtonia acutangula* and *Terminalia* which one wouldn't normally associate with this region, but rather with the monsoon tropics. The author does give an explanation for the choice of boundaries and plants in the Introduction to the book

The fact of the title aside, this is a copiously illustrated guide with each of the 900 species

covered by the book having at least one photograph, a brief description, distribution map and notes about the plant. These range from hints for recognition, species it might be confused with, variation within the species and facts of interest concerning such items as aboriginal use, honey production and horticultural use.

As part of the Introduction there is a short section on cautionary travelling in the outback and recommendations for the best time to visit areas for flowering together with instructions on how to use the book. The map produced here shows the major roads delineating the area but don't rely on it for the indication of National Parks and conservation areas, since it is very much less than comprehensive e.g. the Unnamed Conservation Park, Yellabinna and Yumbarra are all missing from western South Australia.

The book is divided into three main parts. Part I deals with Evolution, Humans and Vegetation and has some interesting brief chapters in popular format on the evolution of the flora (posing some of the still unanswered questions concerning the adaptations of the Australian flora), plant communities of the



region, poisonous plants, fire and aboriginal plant use.

Part II, the greater part of the book, deals with plants of major and distinctive groups, each under a differently coloured banner; plant groups headings include Cassias (treated as *Senna* within the text), Casuarinas, Chenopods, Cycads, Daisies, Emubushes, Eucalypts, Figs, Boabs, Goodenia family, Peas, Palms, Grasses, Palms, Mistletoes, Mulla Mullas, Potato and Tomato Bushes, Hibiscus Family, Grevilleas and Hakeas and Wattles. There is an illustrated guide to these groups at the front of the book capturing their more obvious features and within each of these groups there is a short introduction to the group as a whole.

The number of species and their distribution would rarely be sufficient for the user to be certain that what they are looking at is the same species. For example, within the Hibiscus family there are only two *Sida* species shown for the entire area, where there are probably upwards of fifty species; one of these is wrongly named and the other is the atypical *Sida platycalyx*. But there is information in the text telling you how *Sida* and *Abutilon* (3 of the more commonly encountered species) differ. The bizarre *Lawrencia helmsii* (this is one photograph which probably doesn't really do justice to the plant) has the fascinating information that 22,000 flowering stems were picked from 3 populations for the wildflower trade in 1980-81!

Part III consists of accounts of less familiar plants, arranged alphabetically. Its hard to know why the seven species of *Terminalia* and the six species each of *Calandrinia* and *Dicrastyliis* are treated here rather than as groups in the second

part and the mixture of species again ranges from monsoon tropics (*Gomphrena* and *Passiflora*) to Mediterranean (Paterson's Curse) and wetter areas (*Thysanotus manglesianus*).

Photographs of plants are true to colour and nicely composed. A number of them would have been of more value if they also showed a close-up – this would apply particularly in the eucalypts, wattles and grasses where there is often a habit shot only.

The unusual feature of the book appears in the Appendices, the first consisting of a groups of photographs of massed flowerings along roadsides and the second of about 100 spring-flowering plants occurring between Shark Bay and Kalbarri, the latter identified but without additional text.

There is a glossary, a list of references consulted, further reading and an index to common and scientific names to complete the book.

Like many such books it has a role in bringing the Australian flora to the notice of the general community. Despite its claims, it is not really useful for identification except perhaps at generic level. But perhaps the saddest part of the book for any herbarium systematist is included in the preface:

It is quite another matter on trips lasting several months with a busy daily schedule to deal with a large number of specimens in a way which does not impair or destroy their usefulness or contravene quarantine restrictions on the transport of plant material ... Specimens were discarded in roadside bins or burnt on the campfire to minimise the possible spread of insect or disease.

## Modern approaches to investigating plant evolution

### Review by Greg Guerin

School of Earth and Environmental Sciences, University of Adelaide

**R. J. Henry (Editor) (2004) Plant Diversity and Evolution: genotypic and phenotypic variation in higher plants. 352 pp. CABI Publishing. [www.cabi-publishing.org/bookshop](http://www.cabi-publishing.org/bookshop) Hardback; (ISBN 0 8599 904 2) Price: £65.00, US \$120**<sup>12</sup>

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The take-away point of this book is that plant evolution is complex and dynamic, hence a multidisciplinary approach is required to understand it. The methods of sciences that deal with plant diversity are advancing rapidly in scope as well as technical capability. We can now investigate plant evolution from a combined viewpoint of functional genetics and morphology.

Occasionally the authors contradict each other, but this is only a sign of healthy scientific debate and a nit-picking reviewer. For example, Chase (Chapter 2) argues that phenotypic data are not appropriate for phylogenetic studies and that DNA trees should be used exclusively, whereas Soltis *et al.* (Chapter 10) appear to advocate

approaches combining data from a range of fields such as DNA sequences, functional genomics and morphology (particularly evolutionary developmental studies). Although studies using multiple genetic markers are now possible, the overall tone of the book is one of caution of blind faith in DNA markers, and it would seem pointless to exclude *ad hoc* morphology as an independent source of data. Chase does, however, make a sound argument about the limitations of earlier classifications, in which the assignment of distinguishing characters was based subjectively on obvious characters, rather than those indicating phylogeny.<sup>13</sup>

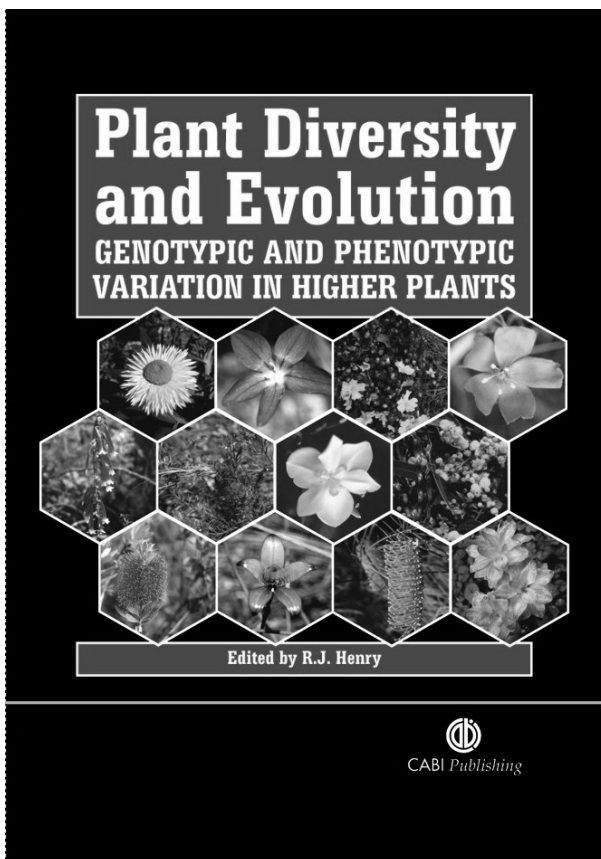
Chapters 2 and 3 reveal that high-level plant systematics has advanced rapidly, and that the relationships among the orders of the angiosperms are now well understood. However, the origin of the angiosperms and their position relative to other seed plants is yet to be clarified.

In Chapters 4 and 5, Raubeson and Jansen, and Mackenzie give a useful account of the nature, origin and uses of the chloroplast and mitochondrial genomes respectively (cpDNA and mtDNA). In Chapter 4, the 'enslavement' of free-living bacteria to become endosymbiotic organelles is described, however the choice of the word seems careless, as it could be argued that the captured genomes have benefited in terms of adaptive radiation. Researchers are now aware of the complex functional interactions and genetic exchange between the nucleus and non-

nuclear genomes. The chloroplast genome has been used extensively in plant systematics, and now with efficient techniques (PCR and automated sequencing), DNA sequencing is used almost exclusively, although problems exist with the level of variation and homoplasy. In Chapter 4, we are told cpDNA is conservative but changes more rapidly than mtDNA, while in Chapter 5 we are told that mtDNA is extremely variable!

Chapter 5 gets bogged down in minor detail at times, and some of the writing is hard to decipher. Although the chapter is short, it requires further illustration. The theme is informative as it focuses on how and why structural changes (and therefore 'diversity') happen, rather than how the data can resolve evolutionary patterns. However, I would have liked to hear some thoughts on the phylogenetic utility of the variation.

Chapters 6 and 7 present key topics: reticulate evolution and polyploidy. The main thrust of these chapters is that these phenomena are common and central to speciation, therefore simple bifurcating phylogenies may be unable to adequately illustrate historical divergence. Moreover, systematists may have to deal with the notion that a distinct biological species may have more than one origin due to repeated hybridisation/polyploidy events. Disappointingly, the authors make no attempt to discuss how this might be dealt with taxonomically. They do, however, touch on analyses of molecular phylogenies. The possibility of instantaneous sympatric speciation due to hybridisation or polyploidy, and the instant creation of unique phenotypes, gives a radically different view of evolution. A significant point raised here is that species may carry multiple chloroplast lineages that may not be species-specific. This means cpDNA markers used to create phylogenies based on tissue samples from



<sup>13</sup> Full details of chapter titles and authors can be found on the web: [www.cabi-publishing.org/pdf/Books/0851999042/0851999042.pdf](http://www.cabi-publishing.org/pdf/Books/0851999042/0851999042.pdf). Eds.

individual specimens may represent only a gene tree of that lineage/marker.

I have some minor quibbles about Chapter 7. It is suggested that comparisons of stomatal size can inform us about ancient chromosome doubling, a statement that seems nonsensical without explanation. Some parts of this chapter are written in convoluted or overly technical sentences, while other sections are chatty. Some of the illustrations are confusing, and the text is easier to follow. These figures are unnecessary and appear to have been added simply for the sake of illustration. In a late section, the authors define the term epigenetic, yet the term has already been used extensively in the chapter.

Chapter 8 is a very specific chapter on Cruciferae that doesn't really fit, except as a case study of phylogenetics within a major family. However, the information is not presented as such. The chapter does provide a good practical coverage of all areas of applied systematics. The chapter is divided into broad introductory sections which tend to highlight the origins of each field in a general sense before moving on to the topic at hand, or include little useful detail. A lot of this text is uninformative and could have been removed.

Chapter 9 discusses diversity at the population level and provides a good overview of the development of practical techniques. It has meaningful discussion on the interpretation of data and its applicability to conservation. The pros and cons of various methods are described, however the text could either have been expanded to explain what the methods actually involve in practise, or removed, since those who already know the detail necessary to follow the discussion would already be aware of the background information.

The standout chapter is Chapter 10, "Evolution of the flower". In a well-presented text, we are informed of the state of knowledge in this relatively new area of research. It is possible to study this topic area now that laboratory techniques have advanced and high-level phylogenies are available for the angiosperms. The key issues here are the evolution of floral development ("evo-devo"), its genetic control, and the associated homology of basic floral organs (petals etc). It is interesting that basic floral organs may have multiple origins and therefore long-assumed high-level homologies are now under question. The chapter gives an interesting but rather technical account of the genetic control of floral development. The incredible scale of this research is demonstrated

by the long list of co-authors, which includes Douglas Soltis, Pamela Soltis, Victor Albert, Mi-Jeong Yoo, Sangtae Kim, Hong Ma and Kerr Wall, to name a few.

Chapters 11 and 12 address interesting subsets of plant diversity (cell walls and secondary metabolites), but by this stage the crucial areas have already been covered, and these chapters are almost filling in detail to make a rounded text. Both chapters suffer from reading like a list, with only short sections applying an evolutionary context and little by way of an overall argument. Some illustrative figures in Chapter 11 would have been better than the chemical structures given. The applied uses described by Waterman in Chapter 12 are important but perhaps not in line with the greater theme of the book.

The final three chapters attempt to bring the discussion around to the application of knowledge of plant diversity to conservation and economics. The importance to agriculture of understanding genome function is not a hard case to make, but a true understanding of the importance of diversity to conservation is yet to be reached. Research into the functional importance of diversity is in its infancy.

Chapter 13 brings the book back into focus in terms of generating a thesis about plant diversity. It addresses the relationship between biodiversity and ecosystem function. The question at hand is whether diversity is necessary to allow capacity to adapt to changing environmental conditions, and whether functional redundancy is therefore important. As with all ecological questions, a good ecologist answers: it depends. Beierkuhnlein and Jentsch highlight the play-off between species diversity in a system and diversity within its individual populations. The chapter places the preceding chapters in the context of the impact of *Homo sapiens*.

Chapter 14 and the final chapter (the second chapter by editor Robert Henry) address primarily diversity as an agricultural resource.

Although this book is aimed at an educated audience, it has some detailed technical discussions in a number of unrelated fields. A glossary of technical terms would have helped.

*Plant Diversity and Evolution* is a high-quality scientific text. The science is rapidly advancing and this recent release is a good chance to catch up. The price is prohibitive for some but I would recommend it as an (for the most part) important and absorbing read.

## Christmas Island native plants

Robyn Barker

State Herbarium of South Australia

**Native Plants of Christmas Island, by Jeff Claussen. Flora of Australia Supplementary Series, Number 22 (ABRS/Christmas Island Natural History Association, 2005) Paperback, 152 pages. ISBN 0 642 56831 6 Price (through ABRS): AUD\$28.00 (includes surface postage for overseas orders, and GST and postage within Australia).**

Going to Christmas Island in the Indian Ocean for some reason? Then if you want a quick introduction to the plants on the island, this is what you should take with you, or buy on the island. Nice size and lots of glossy photographs of 118 of the more commonly encountered plants on the island and much easier to pack than the *Flora of Australia* volume 50 with all its other superfluous islands.

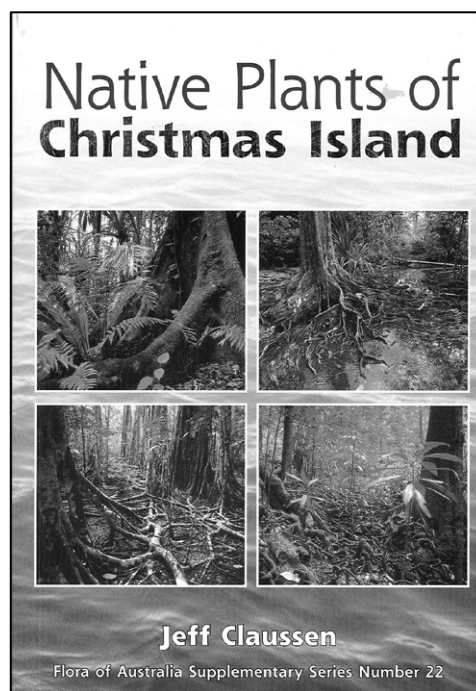
Species are grouped under 6 colour-coded headings

- trees – 50 spp.
- shrubs – 18 spp.
- vines – 13 spp.
- herbs, grasses and sedges – 10 spp.
- ferns – 18 spp.
- orchids and lilies – 9 spp.

Each species has a habit photograph, invariably showing the upper surface of the leaf, a brief description, information about where it is found on the island and its larger distribution, derivation of its botanical name, common name and diagrams indicating flowering and fruiting. Although it is not said anywhere that I could find in the text, there is also a separate depiction of the under-surface of the leaf for each of the species.

The bonus? A great 6-page spread of the disseminules of 48 of the 63 drift species recorded for the island. This last bit, together with an introductory essay by Peter Green, just make you want to become a beachcomber for a while at least. Pity about the title of “Drift seeds”, particularly since the terms propagule and disseminule are used throughout the essay.

The criticisms? Some of the smaller photographs depicting flowers are over-exposed or just too small to give any real feel for the floral structure and the flowering and fruiting diagrams showing spring, summer, winter and autumn are a bit strange without a discussion of just what months these seasons relate to. For an island located where it is, the terms wet and dry season may have been more appropriate, since we are at least told in the introduction that rain falls November to June and the discussion concerning the semi-deciduous closed forest (p. 2) is in these terms.



Where there is more than one species in a genus it would have been good to have been told how to tell them apart, rather than repeating the derivation of the generic name. It would have been of interest to most readers that the endemic species are almost all very closely related to other more widespread species (*Asplenium listeri* & *A. polyodon*; *Asystasia listeri* & *A. oppositiflora*; *Pandanus chrismatenis* & *P. tectorius*; *Ischaemum nativitas* & *I. foliosum*) and their distinction from each other would have been useful.

A number of species are treated as if native to the island, whereas they may well be, or are definitely, introductions e.g. *Sida acuta*, *Merremia hederacea*, *Datura metel*, *Ruellia prostrata* and *Indigofera hirsuta*. While a decision as to whether their occurrence is natural or otherwise is not expected, some warning about their propensity to spread in other places would have been useful.

The lack of background information is rather unfortunate. The removal of the superfluous Species list (p. 5) at the front of the book could easily have made more room available for such information, including perhaps a map of the island and an expansion of the introduction to include something on endemism, biological interactions and the effects of mining and people on the vegetation. There is no information about the author, Jeff Claussen, or Peter Green, who



wrote the item on drift propagules. Nor is there any information, apart from a box number, about the Christmas Island Natural History Association, who co-published the book.

These things aside, if ever I get to Christmas Island, I know what book I will be packing.

## A field and garden guide to Hakeas

**Robyn Barker**

State Herbarium of South Australia

**Hakeas: a field and garden guide, by Ivan Holliday** (New Holland Publishers, Sydney) August 2005. 224 pages, \$29-95, ISBN 1 877069140

I arrived back from overseas to find a complimentary copy of this book on my desk. Unlike its more famous cousin, *Grevillea*, this is the first glossy account of *Hakea*, and it's a neat little package. Layout is similar to Ivan's earlier account of the *Melaleucas* (Holliday 2004).

Species are arranged alphabetically. Coloured photos, mostly of habit and flowers, are all on the right hand side, making it easy to "flick" the pictures. These are supplemented with Ivan's black and white drawings of the fruit and sometimes the habit. On the left hand side are common names, derivation of the epithet, a brief description, flowering time and duration, natural distribution and cultivation notes. On occasions there is a treatment of a similar species also on this side and where this happens the species has not been treated in the same detail as most. Sometimes these species are represented by a small photograph e.g. *H. stenocarpa*, *H. lasianthoides*,

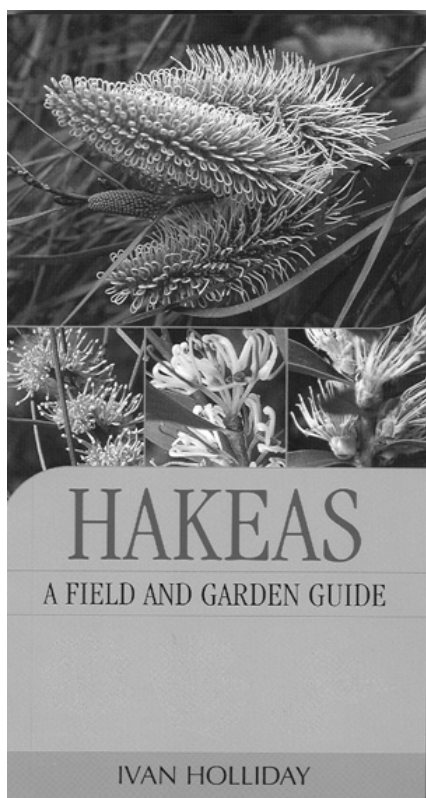
but in other cases there are no visual cues to help in their determination e.g. *H. standleyensis*, *H. collina* and *H. rhombales*.

There is a brief introduction to the genus, a glossary, brief bibliography and an index to common and scientific names. The colour photos, with very few exceptions, are of a high standard which is a good thing since some of them will undoubtedly feature in the Lucid key to *Hakea*, currently in preparation. Clearly the major drawback for all books such as this is the lack of any means of determining an unknown specimen aside from looking at the pictures. Some of the more distinctive species may be able to be worked out in this way but closely related and cryptic species will not. Hence the need for a key – and the time to complete it.

But if you already know what species you have or you want to see what a particular species looks like, then this book is a great way to start.

### Reference

Holliday I. (2004). *Melaleucas: a field and garden guide*. (New Holland Publishers, Sydney).



## Websites of interest

### Handwriting samples of botanists

<sup>14</sup>Burdet's series of papers on botanist's handwriting, published in *Candollea* from 1972 to 1979 under the title *Cartulae ad botanicorum*

<sup>14</sup> Unless otherwise indicated articles under this section in this and prior issues have been compiled by Robyn Barker.

*graphicem*, is now available on the web. The collection features handwriting samples across the working life of the subject, including signatures, but also from herbarium labels and from letters. It might be wise to make use of the % for those name which include a diacritic or accent since I was unable to bring up Labillardière until I did this. There seem to be some surprising absences (or at least nil returns) from a search for Banks, Solander, Dryander,

Brown, Bentham and Bonpland, but Leschenault, Sieber, James Smith, Mueller, Lindley, Ventenat, Willdenow and Hooker searches were successful.

### References

Burdet, H. M. (1972-1979). Cartulae ad botanicorum graphicem. *Candollea* **27**: 307-340; **28**: 137-170, 407-440; **29**: 207-240; 489-522; **30**: 203-234, 379-410; **31**: 127-158, 319360; **32**: 165-206, -377-418; **33**: 139-180, 365-408, 409-456; **34**: 167-218.

Web ref. 1: [www.cjb.unige.ch/bd/auxilium/](http://www.cjb.unige.ch/bd/auxilium/)

## Rare books on the web

When last reported in *ASBS Newsletter* issue 121 the number of rare books digitised on the Missouri Botanic Garden library site (Web ref. 1) was 77. It has now reached 112. Also of great interest on this site are the relatively long biographies of many of the authors of these works. The prioritised list of works for digitisation in the future includes *Linnaea* (number 3), Brown's *Prodromus* (number 73), Bentham's *Flora australiensis* (number 97) and Mueller's *Fragmenta* series (number 101).

Web ref. 1: [www.illustratedgarden.org/mobot/rarebooks/](http://www.illustratedgarden.org/mobot/rarebooks/)<sup>15</sup>

## Malesian Cyclopaedia of Collectors on the web

Anyone who has worked on Malesian plants is aware of the *Cyclopaedia of Collectors* of Mrs. van Steenis-Kruseman, published in the *Flora Malesiana* series 1, parts 1, 5 and 8. For each collector there is date and place of birth and death, an outline of their career and collection trips, information on where the collections are now housed, literature references and a bibliography. A portrait gallery together with handwriting and signature are also being added to the site but this is still sparsely populated – see under Balgooy for an example. It would be good if extant botanists were able to update their information since this seems to finish about the 1970's.

Web ref. 1: [www.nationaalherbarium.nl/fmcollectors](http://www.nationaalherbarium.nl/fmcollectors).

## PapuaWeb

Although its been on the web since 2002 I've only just stumbled across *PapuaWeb*; it's a great resource for information on Papua, the former Irian Jaya and has been put together by the University of Papua in Manokwari, Cenderawasih University in Jayapura and the

<sup>15</sup> By coincidence Kevin Thiele's TDWG report indicates another way of accessing this site through the Botanicus project site (see p. 23).

Australian National University in Canberra. Reproduced on the site are a number of items not always easy to access along with old maps, photographs a chronological history and links to theses as well as a number of books which have been made available in toto. Amongst these are d'Albertis's 1880 *New Guinea: what I did and what I saw*, an index to contributions *Nova Guinea*, an English translation of Kolff's 1838 account of a Dutch voyage in the Moluccan Archipelago during 1825-6, and in the more modern era, van Baal's 1984 *West Irian: A Bibliography*, Bruce French's *Food Plants of Papua New Guinea: a compendium*, the 3 published volumes of the *Handbooks to the Flora of Papua New Guinea*, Pajiman's 1976 *New Guinea Vegetation*, and access to *Beccariana* "the official publication of the Manokwari Herbarium of the Biodiversity Research Centre of the University of Papua". A search engine would probably be useful since it is not always easy to find a specific item.

Web ref. 1: [www.papuaweb.org](http://www.papuaweb.org)

## Hawksworth's draft glossary of terms used in biological codes

Karen Wilson has drawn attention to the fact that David Hawksworth's (1994) book on the terms used in biological Codes of Nomenclature can now be accessed on the web (Web reference 1). The book has long been out of print. The web pages are not easily navigable as one can only bring up a page at a time so be prepared to spend time looking for a particular term.

### Reference

Hawksworth, D.L. (1994). *A Draft Glossary of Terms Used in Bionomenclature*. International Union of Biological Sciences

Web ref. 1: <http://194.203.77.76/LibriFungorum/SearchResult.asp?ItemID=9>

## Smithsonian Catalogue of botanical art

The Department of Botany of the Smithsonian Institution's National Museum of Natural History has created a database of the more than 3000 botanical illustrations it possesses. Some 500 of these, covering the families Bromeliaceae, Cactaceae and Melastomataceae, have been made available on the web – the very extensive Cactaceae illustrations may well be of interest to those presently chasing and trying to work out their names in Australia.

Web ref. 1: <http://ravenel.si.edu/botany/botart/>

## Flora of Zimbabwe

A growing source of information about the flora of Zimbabwe can be found here (Web ref. 1). The site is run by Mark Hyde, an actuarial bellringer, and Bart Wursten, owner of a lodge in the Eastern Highlands of Zimbabwe. Still relatively sparsely populated with images, but fairly well populated with descriptions, the site includes a national checklist of vascular plants identifying those species which are endemic and those which are endangered.

Note also that the completed volumes of the *Flora Zambesiaca*, a project begun in 1960 and involving the taxonomic study of native and naturalised plants of the Zambezi River basin (covering the territories of Botswana, Malawi, Mozambique, Zambia, Zimbabwe and the Caprivi Strip), are available on the web through the Kew site (Web ref. 2).

Web ref. 1: [www.zimbabweflora.co.zw/index.php](http://www.zimbabweflora.co.zw/index.php)

Web ref. 2: [www.kew.org/floras/jz/intro.html](http://www.kew.org/floras/jz/intro.html)

## Catalogue of New World Grasses

The Catalogue of New World Grasses web site (Web ref. 1) has added a new utility. Now you can retrieve lists of all accepted taxa of grasses from New World countries. However Australian

systematists are more likely to be interested in the information on original publications, basionyms or types, synonyms, secondary literature citations of the name, country distribution, specimen lists and maps, images, links to other resources, etc. for those species which have been introduced here.

Old World grass names data are also searchable via the site, but it is suggested that more data for these will be found via the W3Tropicos link (Web ref. 2). This site is always worth a visit for any species for which information on world distribution, references and place of publication is sought. They have just begun adding IUCN and CITES conservation status information to species as well. The information is not yet universal and so look at *Aphelandra sulphurea* if you want to see an example.

[Adapted from Taxacom Archives]

Web ref. 1: <http://mobot.mobot.org/W3T/Search/mwgc.html>

Web ref. 2: <http://mobot.mobot.org/W3T/Search/vast.html>

## Spiders – particularly of Australia and USA

And for a bit of fun – this site, put together by an Australian teacher with her year 5 class, has an amazing amount of information on spiders.

Web ref. 1: [www.spiderzrule.com/index.html](http://www.spiderzrule.com/index.html)

# Federation of Associations of Scientific and Technological Societies

## \$100M for Environmental Research

Senator Ian Cambell (Minister for Environment) and Brendan Nelson have just issued a joint media release on the \$100m funding for environmental research announced during the last election.

Key points of the release are:

- Funding of \$40 million will support a Marine and Tropical Sciences Research Facility, located at James Cook University. (Although this is essentially the political fix to compensate for the 2 CRCs that lost out in the first round last year - reef and rainforest).
- A further \$60 million will be allocated across Australia to support public-good environmental research through a series of competitive grant processes. The funding will support the establishment of national research hubs to build critical mass in areas of Australia's research strengths, with some

support also considered for significant separate projects and fellowships.

The \$60 million will be allocated to research in four priority areas needed to protect and manage Australia's environment into the future. They are:

- *The condition of our environmental assets* - Using tools such as remote sensing, rapid assessment and data collection to better classify the condition of Australia's environment assets, including our freshwater and marine areas, our threatened species populations and our land resources.
- *The threats and risks to our environment* - Assessing and managing risks to the environment posed by water availability and quality, changing land use patterns, fire regimes and climate change.
- *The pressures on our coastal environment* - Research focusing on urban and land-use



*Australian Systematic Botany Society*

**2006 Conference**

**Plant Diversity in the Tropics  
How Much Do We Know?**

At the Australian Tropical Forest Institute Complex  
Cairns, North Queensland

13<sup>th</sup> – 15<sup>th</sup> November 2006

For registration and other details, see the next Newsletter issue.

pressures in our coastal environments, including estuaries, wetlands and coastal waters as a result of the rapid expansion in urban development.

- *Social and economic aspects of our environment* - Determining and understanding the social and economic dimensions to environmental management, for example natural asset valuation, economic incentives and pricing for sustainability and predicting usage patterns.

The CERF programme will support research that delivers public benefits in relation to our environment assets. A Reference Group with scientific expertise will be established shortly to assess bids and make recommendations to the Government for funding.

Information seminars will be held in all capital cities for potential research funding applicants, universities, industry and interested members of the community. Further information about CERF is available online at [www.deh.gov.au/programs/cerf/](http://www.deh.gov.au/programs/cerf/)

**The 2005/06 professional scientist remuneration survey**

The Association of Professional Engineers, Scientists and Managers, Australia (APESMA),

in conjunction with FASTS, is conducting a study of the remuneration of scientists across industry, universities and public sector agencies.

The purpose of the survey is to establish a benchmark for scientific salaries paid in Australia. At a time of significant change in the laws governing the setting of salaries and conditions, as well as much discussion about shortages of skilled professionals, it is important that a reliable snapshot of existing arrangements is available to members of the Australian scientific community.

No identification is required to complete the survey; a summary of survey results will be made available later in 2005.

The validity of survey results depends in large part on the level of participation of professional scientists. It would be of great assistance to the profession if you could ask all your members to participate in the survey by taking the 10-15 minutes to complete the online questionnaire which can be found at: [www.apesma.asn.au/vsurveys/sci](http://www.apesma.asn.au/vsurveys/sci)

The closing date for survey participation is Friday October 28, 2005.

## ASBS Publications

### History of Systematic Botany in Australia

Edited by P.S. Short. A4, case bound, 326pp. ASBS, 1990. \$10; plus \$10 p. & p.

For all those people interested in the 1988 ASBS symposium in Melbourne, here are the proceedings. It is a very nicely presented volume, containing 36 papers on: the botanical exploration of our region; the role of horticulturists, collectors and artists in the early documentation of the flora; the renowned (Mueller, Cunningham), and those whose contribution is sometimes overlooked (Buchanan, Wilhelmi).

### Systematic Status of Large Flowering Plant Genera

*Austral.Syst.Bot.Soc.Nsltr* 53, edited by Helen Hewson. 1987. \$5 + \$1.10 postage.

This Newsletter issue includes the reports from the February 1986 Boden Conference on the "Systematic Status of Large Flowering Plant Genera". The reports cover: the genus concept; the role of cladistics in generic delimitation; geographic range and the genus concepts; the value of chemical characters, pollination syndromes, and breeding systems as generic determinants; and generic concepts in the Asteraceae, Chenopodiaceae, Epacridaceae, *Cassia*, *Acacia*, and *Eucalyptus*.

### Australian Systematic Botany Society Newsletter

**Back issues** of the Newsletter are available from from *Number 27* (May 1981) onwards, excluding *Numbers 29, 31, 60-62, 66, 84, 89, 90, 99, 100* and *103*. Here is the chance to complete your set. **Cover prices** are \$3.50 (*Numbers 27-59*, excluding *Number 53*) and \$5.00 (*Number 53*, and *60* onwards). **Postage** \$1.10 per issue, apart from \$1.75 for the *Large Genera* issue (*Number 53*).

### Evolution of the Flora and Fauna of Arid Australia

Edited by W.R. Barker & P.J.M. Greenslade. Peacock Publications, ASBS & ANZAAS, 1982.  
\$20 + \$8.50 postage.

This collection of more than 40 papers will interest all people concerned with Australia's dry inland, or the evolutionary history of its flora and fauna. It is of value to those studying both arid lands and evolution in general. Six sections cover: ecological and historical background; ecological and reproductive adaptations in plants; vertebrate animals; invertebrate animals; individual plant groups; and concluding remarks.

*Also available from.* Peacock Publications, 38 Sydenham Road, Norwood, SA 5069, Australia.  
(To obtain this discounted price, post a photocopy of this page with remittance).

### Ecology of the Southern Conifers (NOW OUT OF PRINT)

Edited by Neal Enright and Robert Hill.  
ASBS members: \$60 plus \$12 p&p non-members \$79.95.

Proceedings of a symposium at the ASBS conference in Hobart in 1993. Twenty-eight scholars from across the hemisphere examine the history and ecology of the southern conifers, and emphasise their importance in understanding the evolution and ecological dynamics of southern vegetation.

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From outside Australia: add the country code 61 and omit the leading zero of the area code

<b>AD</b> tel: (08) 8222 9307 fax: (08) 8222 9353 www.flora.sa.gov.au	<b>HO</b> tel: (03) 6226 2635 fax: (03) 6226 7865 www.tmag.tas.gov.au/Herbarium/Herbarium2.htm	<b>MEL</b> tel: (03) 9252 2300 fax: (03) 9252 2350 www.rbg.vic.gov.au/biodiversity/	<b>NSW</b> tel: (02) 9231 8111 fax: (02) 9251 7231 www.rbg.vic.gov.au/conservation_research/herbarium_&_services
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<b>Council of Heads of Australasian Herbaria (CHAH)</b> Chair: Dr Greg Leach (DNA) www.chah.gov.au/	<b>ABRS</b> tel: (02) 6250 9554 fax: (02) 6250 9555 email: abrs@deh.gov.au www.deh.gov.au/biodiversity/abrs	<b>Australian Botanical Liaison Officer (ABLO)</b> Juliet Wege Herbarium Royal Botanic Gardens, Kew Richmond, Surrey TW9 3AB England tel: 44-20-8332 5270 fax: 44-20-8332 5278 email: ablo@rbgkew.org.uk	

These listings are published in each issue. Please inform the Editors of any change.

## AUSTRALIAN SYSTEMATIC BOTANY SOCIETY INCORPORATED

### The Society

The *Australian Systematic Botany Society* is an incorporated association of over 300 people with professional or amateur interest in botany. The aim of the Society is to promote the study of plant systematics.

### Membership

Membership is open to all those interested in plant systematics. Membership entitles the member to attend general meetings and chapter meetings, and to receive the Newsletter. Any person may apply for membership by filling in a "Membership Application" form and forwarding it, with the appropriate subscription, to the Treasurer. Subscriptions become due on January 1 each year.

The ASBS *annual membership subscription* is \$45(Aust.); full-time students \$25. Payment may be by credit card or by cheques made out to *Australian Systematic Botany Society Inc.*, and remitted to the Treasurer. All changes of address should be sent directly to the Treasurer as well.

### The Newsletter

The Newsletter is sent quarterly to members and appears simultaneously on the ASBS Web site. It keeps members informed of Society events and news, and provides a vehicle for debate and discussion. In addition, original articles, notes and letters (not exceeding ten published pages in length) will be considered.

*Citation:* abbreviate as *Austral. Syst. Bot. Soc. Nsltr*

### Contributions

Send to the Editors at the address given below. They *preferably* should be submitted as: (1) an MS-DOS file in the form of a text file (.txt extension), (2) an MS-Word.doc file, (3) a Rich-text-format or .rtf file in an email message or attachment or on an MS-DOS disk or CD-ROM. *Non-preferred* media such as handwritten or typescripts by letter or fax are acceptable, but may cause delay in publication in view of the extra workload involved.

*Formatting of submitted copy.* Please use Word in formatting indents, bullets, etc. in paragraphs and for tables. Do not format primitively with tabs, which change with the Normal style sheet. If embedding tables or references or other Objects from other software (Excel, bibliographic software, etc.) ensure that these are converted to Word tables or paragraphs. Letters in abbreviations of Australian States (SA, WA etc., but Vic.) and organisations (e.g. ASBS, ABRS) should not be separated by full-stops, but initials should be (e.g. W.R. Smith, not WR Smith).

*Images:* their inclusion may depend on space being available. Improve scanned resolution if printing your image is pixellated at a width of at least 7 cm (up to a 15 cm full page). Contact the Editors for further clarification.

The *deadline* for contributions is the last day of February, May, August and November. All items incorporated in the Newsletter will be duly acknowledged. Any unsigned articles are attributable to the Editors.

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### Advertising

*Advertising space* is available for products or services of interest to ASBS members. The current fee is \$100 per full page, \$50 per half-page or less.

*Flyers* may be approved for inclusion in the envelope for products or services of interest to ASBS members. The current fee is \$100 per flyer, plus the cost of inserting them (usually roughly \$25-30). Flyers are not part of the Newsletter and do not appear with the Newsletter on the ASBS Web site.

A 20% discount applies for second and subsequent entries of the same advertisement. Advertisements from ASBS members are usually exempt from fees but not the insertion costs in the case of a flier. Contact the Newsletter Editors for further information.

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