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Loose-leaf inclusions with this issue

- Nominations for ASBS Council 2004
- CSIRO Publishing publications pamphlet
- Sales flyer for Kutsche & Lay, *Plants of Outback South Australia*

Publication dates of previous issue

***Austral.Syst.Bot.Soc.Nsltr* 117 (December 2003 issue)**

Hardcopy: 30th January 2004; ASBS Web site: 3rd February 2004

ASBS Inc. business

2004 Annual General Meeting

The Australian Systematic Botany Society will hold its Annual General Meeting for 2004 on Monday 26th July, at 5:30 pm at the Australian National Herbarium, Centre for Plant Biodiversity Research, Canberra.

The AGM is timed to coincide with a one day workshop aimed at producing a handbook to the families of Australian vascular plants, to be held on the 27th July (see below).

Workshop on Handbook on Families of Australian Vascular Plants

The proposal for a workshop on producing a Handbook on Families of Australian Vascular Plants developed out of Council's discussions in Adelaide and Melbourne on new products for members. A significant opportunity exists to work towards an updated version of *Flowering Plants of Australia* (Morley & Toelken), which I still find a very useful reference. However, major advances in understanding of Australian plant families have occurred over the past two decades, particularly in light of molecular phylogenetic studies.

As discussed in Melbourne last year, the broad concept for the above conference and book is for the 2005 ASBS Conference to be in Perth in Spring and for the theme to be new perspectives on families of Australian vascular plants. An additional outcome would be a book which essentially updates Morley & Toelken. It is proposed that an editorial committee steer this process, with members of ASBS Council forming the nucleus of such a committee. Russell Barrett and myself are willing to take a lead editorial role if this is appropriate, but we are not seeking an exclusive position here. Other models are possible¹ and could be raised at the workshop. The forthcoming workshop on July 27 aims to explore these ideas and chart a way forward to deliver agreed outcomes.

In my view, as many people as are interested to participate would be welcome to the workshop, as long as we have at least a core of willing participants on Council to drive the process. Ideally, around 20-30 people work well in such a workshop, but we could achieve outcomes with fewer. I would envisage a half-day to full-day workshop with the following agenda:

Call for nominations for ASBS Council

Nominations for Council are called. They need to be submitted on the nomination form included with this issue of the Newsletter. Completed nomination forms must be in the hands of the Secretary (Brendan Lepschi) by no later than Tuesday, 25th May 2004.

Brendan Lepschi
Secretary ASBS

Workshop title: Families of Australian Vascular Plants - Conference and Book

Date: 27 July 2004

City: Canberra

Time, Venue, Costs for participants: To be announced.

Workshop aim: To explore and develop the concept and plans for a conference and book on new perspectives on families of Australian vascular plants.

Facilitators: Steve Hopper and Brendan Lepschi (local logistics)

Agenda

1. Welcome
2. Apologies
3. Agreement on agenda
4. Discussion and agreement on concept (book &/or electronic, compilation)
5. Logistics:
 - Conference Committee
 - Editorial Committee
 - Subject matter
 - Invitees / contributors
 - Potential publishers
 - Finance
 - Risk management
6. Next steps

Preliminary consideration by participants prior to the workshop of agenda items, especially families and potential authors / speakers, and good models for treatments, is all that is needed.

Steve Hopper
President ASBS

¹ See *Point of View*, p. 6, for some possibilities.

Eichler Award Recipients for 2003

\$2,000 was distributed. The successful recipients were:

- Adele Gibbs (University of Melbourne)
Phylogeny and biogeography of the eudesmid eucalypts - DNA sequencing of the ITS region for 10 species.
- Nicholas Yee (Royal Botanic Gardens, Sydney)
Phylogenetic status of four undescribed taxa of the marine algal order Sporochneales (Phaeophyceae) from the southern Great Barrier Reef, Australia - Field work component.

Articles

Notes on *Leucas* R.Br. (Lamiaceae) in Australia

A.R. Bean

Queensland Herbarium

Leucas is a genus of 80-90 species, found in southern and tropical east Africa, southern Asia (Arabia to China, especially India), and one species extends to Australia and the Pacific islands. One further species (*L. martinicensis*) is possibly indigenous to the West Indies and adjacent South America. Five species (4 naturalised, 1 indigenous) are currently known from Australia, and all are confined to Queensland.

There are several very useful flora treatments that are relevant to the Australian species e.g. Codd (1985), Xiwan & Hedge (1994), Smith (1991), Keng (1978) and Cramer (1981), but there has been no summary of the genus in Australia.

Notes are given here on distribution and nomenclature for all the Australian species. Types are listed where they are known or have been previously cited. A key to the species is presented.

Leucas decemdentata (Willd.) Sm. in Rees, *Cycl.* 20 (1812);

Phlomis decemdentata Willd., *Sp. Pl.* ed. 4, 3(1): 124 (1800).

Type: from Society Islands [Tahiti].

Leucas flaccida R.Br., *Prodr.* 505 (1810);

Isodeca flaccida (R.Br.) Raf., *Fl. Tellur.* 3: 88 (1836).

Type: [Queensland], Endeavour River, May-June 1770, J. Banks & D. Solander (holo: BM), n.v.

Found on several islands in the Pacific Ocean, including Tahiti (where the type was collected) and Fiji. It also grows in Queensland and New Guinea, and according to Keng (1978), it is widespread in the rest of Malesia and extends to mainland Asia. In Queensland, it is relatively common in coastal areas from Torres Strait south

to about Mackay, and there is an old F.M. Bailey record from "Rockhampton".

There is a potential type specimen of *L. decemdentata* in the Willdenow Herbarium (number 10949) housed at P. This specimen is from Society Island, but no collector is given. Fosberg & Sachet (1981) cited Banks & Solander specimens at P and US, also from Society Islands.

In the protologue of *Leucas flaccida*, Brown includes the notation "(T.) B. v.s.". This means that it was collected in the tropical parts of Australia, by Banks and Solander, and that Brown saw only dried material.

****Leucas cephalotes*** (Roth) Spreng., *Syst. Veg.* 2: 743 (1825);

Phlomis cephalotes Roth, *Nov. Pl. Sp.* 262 (1821).

Type: India, B. Heyne (syn: B), *fide* Smith (1991).

According to Smith (1991), *L. cephalotes* is indigenous from Afghanistan to eastern India and Bangladesh. However it is also listed for China (Xiwan & Hedge 1994). It is apparently sparingly naturalised in Queensland, based on the two collections at BRI, made in 1968 and 1991, both from near Bowen.

****Leucas martinicensis*** (Jacq.) R.Br. in W.T. Aiton, *Hortus Kew.* ed. 2, 3: 409 (1811);

Clinopodium martinicense Jacq., *Enum. Syst. Pl.* 25 (1760);

Phlomis martinicensis (Jacq.) Sw., *Prodr.* 88 (1788).

Type: from West Indies.

This species probably originated in tropical east Africa, as its closest relatives occur there (Ryding 1998), but it is now known from numerous tropical and sub-tropical parts of the world, including India, China, Africa, South America, the West Indies and Australia. While there is no

general agreement as to the native range of the species, the Australian occurrences are undoubtedly naturalisations. It was first collected in Australia in 1947, and is currently limited to an area west of Bundaberg in Queensland.

**Leucas zeylanica* (L.) R.Br. in W.T.Aiton, *Hortus Kew.* ed. 2, 3: 409 (1811);
Phlomis zeylanica L., *Sp. Pl.* 586 (1753).
Type: Herb. Hermann I: 1, no. 227 (lecto: BM), *fide* Hedge, in Jarvis *et al.* (2001).
Phlomis indica L., *Sp. Pl.* 586 (1753);
Leucas indica (L.) R.Br. in W.T.Aiton, *Hortus Kew.* ed. 2, 3: 409 (1811).
Type: India. Nilgiri Hills, Pykura, 1878, *G. King s.n.* (neo: K), *fide* Paton, in Jarvis *et al.* (2001).

Native to south-east Asia, including India, Sri Lanka, Malaya, Burma and China. It was first collected in Australia in 1913, at Cairns. It is now naturalised around Cairns and nearby areas, but it has not spread far, and there are few recent collections.

Leucas zeylanica and *L. aspera* (Willd.) Link seem very similar, and Bentham (1848) was inclined to think that *L. aspera* should be demoted to a variety of *L. zeylanica*. I have been unable to satisfactorily distinguish these species based on the various flora accounts, because of conflicting or overlapping key characters. Consequently, I have adopted a conservative approach by applying the name *L. zeylanica* to Australian material.

**Leucas lavandulifolia* Sm. in Rees, *Cycl.* 20 (1812);
Leonurus indicus L., *Syst. Nat.* ed. 10, 1101 (1759),
Sp. Pl.: 817 (1763);
Leucas indica (L.) Vatke, *Oesterr. Bot. Z.* 25: 95 (1875), *nom. illeg., non* (L.) R.Br. (1811).
Type: [India, Burman?] (lecto: Herb. Linn. No. 739.8 (LINN)), *fide* Sebal, *Stuttgarter Beitr. Naturk.*, Ser. A341: 188 (1980).

Phlomis linifolia Roth, *Nov. Pl. Sp.* 260 (1821);
Leucas linifolia (Roth) Spreng., *Syst. Veg.* 2: 743 (1825).
Type: India, *B. Heyne* (holo: B), *fide* Smith (1991).

Native to continental Asia, from India to China, but widespread elsewhere as a weed, e.g. South Africa, Philippines, Fiji. It was first collected in Australia in 1912. It is now commonly naturalised in coastal areas of Queensland from Cairns to Gin Gin, and with two old records from Palmwoods.

The accepted name for this species has unfortunately flipped backwards and forwards between *linifolia* and *lavandulifolia*. The correct epithet is undoubtedly *lavandulifolia*, and the

reasons for this were clearly explained by Smith (1991). One detail that Smith overlooked was that the combination *Leucas indica* (L.) R.Br. was formally made in 1811, by Brown in Aiton's *Hortus Kewensis*.

Key to *Leucas* in Australia

1. Inflorescences 2-11 flowered, not forming a globose head; bracteoles rudimentary, c. 1.5 mm long
***L. decemdentata**
- 1x. Inflorescences 20-40 flowered, forming a ± globose head; bracteoles 4.5-13 mm long
 2. Bracteoles broadly lanceolate, 2-3 times longer than wide
***L. cephalotes**
 - 2x. Bracteoles linear, 9-20 times longer than wide
 3. Inflorescences axillary, borne on upper 3-8 nodes; leaves ovate, 1.7-3.5 times longer than wide; calyx green to purplish; longest calyx tooth 3-4 mm long
***L. martinicensis**
 - 3x. Inflorescences ± terminal, borne on upper 1-2 nodes; leaves linear-lanceolate to narrowly elliptical, 4-8 times longer than wide; calyx creamy-white; no calyx teeth exceeding 2 mm in length
 4. Bracteoles with transparent spreading hairs 1-1.5 mm long along margins; proximal half of calyx tube glabrous; all calyx teeth about same length
***L. zeylanica**
 - 4x. Bracteoles with white antrorse hairs 0.2-0.3(-0.6) mm long along margins and elsewhere; proximal half of calyx tube hairy; posterior calyx tooth longer than the rest
***L. lavandulifolia**

Acknowledgement

Mark Spencer, of the Natural History Museum, London, provided information on the typification of *Leonurus indicus* L.

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French gardens rediscovered in Tasmania?

Robyn Barker

State Herbarium of South Australia

Last year in Tasmania there was some controversy about the apparent finding of the garden laid out by Felix de la Haye, gardener of the d'Entrecasteaux expedition that visited Australian waters in 1792-93. The story was covered by ABC television on *Catalyst* (Web Ref. 1) and covered extensively in the Tasmanian press. It was yet another matter which raised tension between the Forestry industry and those interested in the saving of historical sites.

The identified site is in the northern part of Recherche Bay (named after d'Entrecasteaux's ship) on privately owned land. The site is surrounded by the Southport Lagoon Wildlife Sanctuary, and is earmarked for logging by the owners. The area has been previously logged and a whaling station reputedly occupied part of the property for some time and some reports also mention ship-building in the area (McConnell 2003).

Archaeologist Anne Bickford, who inspected the site in February 2003 described the site of the garden as being "most visible. It is clearly outlined with stone boulders forming a rectangular shape, with two square plinths in the centre." (Web Ref. 2).

A present-day map of the site with the location of the French garden is shown in some detail at the State Library of Tasmania heritage website (Web Ref. 3). The sites of the French observatory and the meeting place with native Tasmanians are also shown, although they are wrongly attributed to 1791. An aerial view of the location can also be found at this site. The locality is of course of interest to systematists because it is where Labillardiere made many of his Tasmanian collections.

Background

Consultation of the relatively recently published journal of d'Entrecasteaux (Duyker & Duyker 2001) and of Duyker's account of the life of Labillardiere, botanist to the expedition (Duyker 2003) confirms the establishment of a garden near the locality concerned.

Briefly, in 1792, having been battered by rough seas and in need of fresh water, d'Entrecasteaux delayed his plans to reconnoitre the south-west coast of Australia and instead headed to Van Diemen's Land and the site of Cook's earlier landing place at Adventure Bay. However the confusing coastline led him to what is now known as Recherche Bay, where the party was based from 21st April – 28th May 1792, in a bay they called Port du Nord. It is now apparently known as Pigsties Bay, and is in the vicinity of the now-abandoned town of Leprena and the holiday village of Moss Glen. While based there, astronomical observations were made and, according to d'Entrecasteaux, the gardener Felix de La Haye, planted seeds for the future:

There are few plants in the area surrounding this harbour that can be used as food; there is very little cress and chervil, but pumice stone in great abundance. Various seeds sown by M. La Haye, gardener-botanist, might in future furnish supplies to navigators who will shelter in this haven, if however their produce escapes the destructive zeal of the natives who might mistake the new plants, the properties of which they are ignorant of, for all the other herbs which they seem to allow to perish with their fires.

Port du Nord, 21st April – 28th May 1792
Duyker & Duyker (2001, p. 38)

On the return of d'Entrecasteaux's party to Recherche Bay the following year, they made camp further south in the bay but d'Entrecasteaux records that:

While repairs to the two frigates were taking place, and the restocking of water and wood was being completed, I organised a visit to Port du Nord, where we had called in 1792. The watering place in which we had taken our supply of water was completely dry. The garden had not been a success; nothing, or nearly nothing, had grown. Was it because the season was not favourable or because the seeds that had been sown had deteriorated? I instructed M. La Haye, gardener-botanist, to proceed to the spot and try to discover the cause. M. La Billardiere took advantage of the occasion to complete the collection that he had started in 1792, obtaining the same plants in different seasons.

...Before going back to the boat, we took them [the local aboriginal people] to the garden we had created the

previous year at Port du Nord. M. La Haye inspected it with more care than on the first occasion; he found that a few chicory plants, cabbages, sorrel, radishes, cress and a few potatoes had grown, but had only produced the first two seminal leaves. ...M.La Haye ascribed, with good reason, the lack of success of his vegetable garden to the seeds having been sown in too advanced a season.

D'Entrecasteaux's second visit to van Diemen's Land,
21st January – 27th February, 1793
(Duyker & Duyker 2001, p. 140)

From the maps produced by Beautemps-Beaupré, surveyor of the expedition, Duyker placed the garden 1.3 km north-east of Bennett's Point (see p. 102, Duyker). Bennetts Point is where the French observatory was located. However, in an interview in May 2003 after the publication of his book, Duyker cast some doubt on whether the discovery represented the true site, saying that he would have expected the garden to be found further inland. He further stated, however, that one of the other officers of the expedition, Lamotte du Portais, mentioned the existence of two gardens (Web Ref. 4).

Whether the discovered site truly represents the French garden is unknown and awaits further archaeological and historical investigation. Ronald Gunn and Lady Franklin, who spent two weeks to a month in Recherche Bay in 1838, apparently found no sign of the garden even though they searched for it (Burns & Skemp 1961, Buchanan 1990). A report in Hobart's daily newspaper, *The Mercury* (11th January 2003), also quoted an elderly resident of the area who recalled her grandfather finding the garden (at a different site) after a bushfire in the 1920s. The owners of the property, David and Robert Vernon, also refer in an article in the *Canberra Times* on 22 December 2003 to "a local, Herbert Smith, [who] rediscovered the garden only in 1922 after major bushfires had swept through the area".

The site has been provisionally listed on the Tasmanian Heritage Register and is considered

adequately protected for the moment. It is also a case study of a joint standing committee of the Tasmanian government enquiring into conservation on private land. The draft report of this committee provides some further background to the argument (Web Ref. 5).

Such gardens are known to have been planted by both the British and the French at this time in other areas of Australia (e.g. Kangaroo Island, Albany), but this is the first time, to my knowledge, that any extant evidence of their presence is suggested.

Acknowledgment

Dr Gintaras Kantvilas is thanked for checking an earlier draft of this article.

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- Web Ref. 5. The draft report of this committee can be found at www.parliament.tas.gov.au/ctee/REPORTS/DraftReportConservation.pdf

Io, and other assorted names

Philip Short

Northern Territory Herbarium

For some years now I've been recording scientific names I find interesting, particularly those with a good story behind them, such as *Solanum anthropophogorum*. Of the various short names encountered I particularly like one recently erected by Professor Bertil Nordenstam in the latest issue of the *Compositae Newsletter* (2003, vol. 40, pp. 47–50). As non-daisy enthusiasts are unlikely to read it I think it worth repeating here.

In 1963 a shrubby species of daisy only known from the Ambondrombe mountains in Madagascar was described as being a new species of *Senecio*, *S. ambondrombeensis* H.Humb. With well in excess of 1,000 species attributed to it, this genus has long been considered one of not just unwieldy size, but one from which many genera should be segregated. Bertil, responsible

for the recognition of many such genera, concluded that *S. ambondromnbeensis* should also be placed in its own genus. He has named the genus *Io*. In giving reasons for choosing the name Bertil noted that he partly chose a short name to compensate for the long specific epithet, thus we now have *Io ambondromnbeensis* (H.Humb.) B.Nord. He further noted that *Io* in Latin means joy, that in mythology *Io* was a maiden loved by Zeus (or Jupiter), that *Io* is a small part of the name *Senecio*, and that *Io* is a moon of Jupiter. As he concluded, this latter point is apt as Jupiter is surrounded by a number of moons, in the same way that *Senecio* is surrounded by a number of satellite genera.

Thus, in the plant world *Io* joins *Aa* (an orchid) on the list of smallest generic names. Incidentally, zoologists have seemingly coined more two-letter names than botanists and have the following: *Aa* (mollusc), *Ba* (snail), *Ia* (bat, its full name is *Ia io*), *La* (pyralid moth) and *Lo* (rabbit fish).

I would like to state that I've come across the aforementioned animal names independently, but that would not be completely true. Indeed, I consulted a wonderful web site compiled by Mark Isaac and entitled "Curiosities of Biological Nomenclature". It can be found at <http://home.earthlink.net/~misaak/taxonomy/taxE tyn.html>.

The site provides a selection of names that are often unusual and commonly have some entertainment value, reflecting the idiosyncrasies of the taxonomists rather than the attributes of the organisms to which they have been applied. It

includes, for example, several hundred names commemorating people, be they real, mythological or characters from modern literature and film. As a fan of Arthur Conan Doyle's "The Lost World" I was delighted to see that a couple of paleontologists have named a Brazilian pterosaur *Arthur dactylus conandoylensis*, and I was intrigued by the name *Tianchiasaurus nedegoapeferkima* applied to a dinosaur named after "Jurassic Park" film-stars "Sam Neill, Laura Dern, Jeff Goldblum, Sir Richard Attenborough, Bob Peck, Martin Ferrero, Wayne Knight, Ariana Richards, & Joseph Mazzello ... [and] proposed by Steven Spielberg, who donated money for Chinese dinosaur research." I also liked the image, conjured up by the name *Masiakasaurus knopfleri*, of dinosaur-hunters digging to the music of Dire Straits. For those who don't know, this band was headed by Mark Knopfler, and whenever their music was played the excavators stumbled on more bones of this species. Not surprisingly this combination of dinosaur and pop-star resulted in wide coverage in the popular press.

There are also lists of names which are misnomers (e.g. *Paradisaea apoda* – greater bird-of-paradise), puns (e.g. *Ytu brutus* – a water beetle), rude-sounding (*Enema pan* – a rhinoceros beetle), *Piston eu* – a sphecid), funny-sounding, short, long, anagrams, palindromes (e.g. *Aka, Aha ha*), oymorons (e.g. *Mammuthus exilis, Unifolium bifolium*), etc. On a more sobering note, under the heading "Interesting stories", there is mention of *Neduba extincta*, a katydid collected in the 1930s and not recognised as a distinct species until it was extinct. It is an epithet which will become all too common.

Point of view

A book on Australian flowering plant families?

A book? To replace a book? Another stagnant snapshot of our flora? You have to be kidding!²

If ASBS really wants to provide a service to contemporary Australian botany, it should be looking at building or supporting an on-line database of Australian plant family information that can be updated and maintained in perpetuity.

² This is an unsolicited response to an internal early draft on the proposed ASBS workshop to plan an updated edition of a book on the plant families of Australia. It raises a number of issues that need to be considered. Their early airing will hopefully promote debate. Eds.

A book is fine, but like all other books it will be out of date the day it is printed.

If the Australian botanical community were to get its collective act together and build a single authoritative collaborative database of plant families, and manage future contributions, we would never have to waste our dwindling resources through having to do such a thing again – once the database is populated, if we really feel the urge we can demand publish a book any time the lust for paper becomes overwhelming - we could formally publish periodic editions if we wanted to. I am not really fussed if a book drives a databases or a database drives a book, as long as at the end of the exercise we end up with a

community resource that can be maintained and reused by the botanical community.

As far as a synthetic look at families from a modern perspective, the *Angiosperm Phylogeny Group* (APG) is already doing it, and providing the results on-line (Web Ref. 1). The ASBS contribution could be to see if this works in an Australian context, and to stratify information relevant to Australia so that various levels of detail (from the concise to the expansive) could be provided according to need and context.

Another issue that should be looked at concerns mandate and the potential for duplicated effort. Does ASBS have an exclusive mandate to produce such a definitive work? The Australian Biological Resources Study (ABRS: Web Ref. 2), and the various State and Territory agencies, are involved in documenting the Australian flora, including at the family level; they will need to be involved or we are just perpetuating the proliferation of competitive and often conflicting alternative treatments that continues to plague users of botanical taxonomy.

Similarly the Council of Heads of Australian Herbaria (CHAH) (Web Ref. 3) (and its technical subcommittee, HISCOM: Web Ref. 4) see summary taxon information (including that at the family level) as a vital future contribution to and through the the Australia's Virtual Herbarium project (AVH: Web Ref. 5). Their desire for a 'Consensus Census' of Australian plants would be

well served by a unified treatment of Australian plant families.

Another issue I would like the workshop to cover is that of intellectual property, copyright, charging frameworks and access to the data that ends up being compiled. Herbaria are unlikely to get too enthused about committing staff time to compiling, editing and managing data that is not freely available in the public domain and that we can not have access to and use for other purposes and I would imagine many other institutions would feel the same. With databases this issue is generally not a problem, with books it generally is ...

And another issue... Ah, it'll keep ...

Anyway, a workshop with a wide range of stakeholders and clients is definitely a good idea before embarking on the project if we want to grasp the opportunities offered by today's knowledge and technology, and avoid yet another one-off dead-end effort.

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- Web Ref. 1. www.mobot.org/MOBOT/research/APweb
Web Ref. 2. www.deh.gov.au/biodiversity/abrs/
Web Ref. 3. www.chah.gov.au/
Web Ref. 4. <http://plantnet.rbgsyd.nsw.gov.au/HISCOM/default.htm>
Web Ref. 5. www.chah.gov.au/avh/

Jim Croft
Australian National Herbarium

Eichler Research Fund reports

Preliminary phylogeny of *Phebalium* (Rutaceae: Boronieae) and its allies based on the nrDNA regions ITS 1+2

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³The *Phebalium* group *sensu* Wilson (1998) (Rutaceae: Boronieae) comprises 9 genera and c. 97 species of woody shrubs, which, with the exception of *Leionema nudum* (Hook) Paul G. Wilson from the North Island of New Zealand, are confined to temperate south-western and eastern Australia. Australian taxa occur in a range of plant communities, including forests, alpine and coastal heathlands and shrublands, semi-arid heathlands and mallee communities.

Wilson (1970) revised *Phebalium* and recognised four sections: *Phebalium*, *Eriostemoides*,

Goniocladus Paul G. Wilson and *Leionema*. He commented on the relationships of these sections with other genera (see Wilson 1970, 1971) in the *Phebalium* group and considered that some of the sections of *Phebalium* had greater affinity with these other genera than with other sections within the genus. Recognising *Phebalium* as polyphyletic, Wilson (1998) transferred section *Goniocladus* to *Rhadinothamnus*, section *Eriostemoides* to *Nematolepis*, raised section *Leionema* to genus level, and suggested a close relationship between section *Phebalium* and *Microcybe* Turcz. However, the relationships of these taxa to one another and to *Asterolasia*, *Diplolaena* R.Br., *Muiriantha* C.A. Gardner and

³ This report is based on a paper currently under review for publication

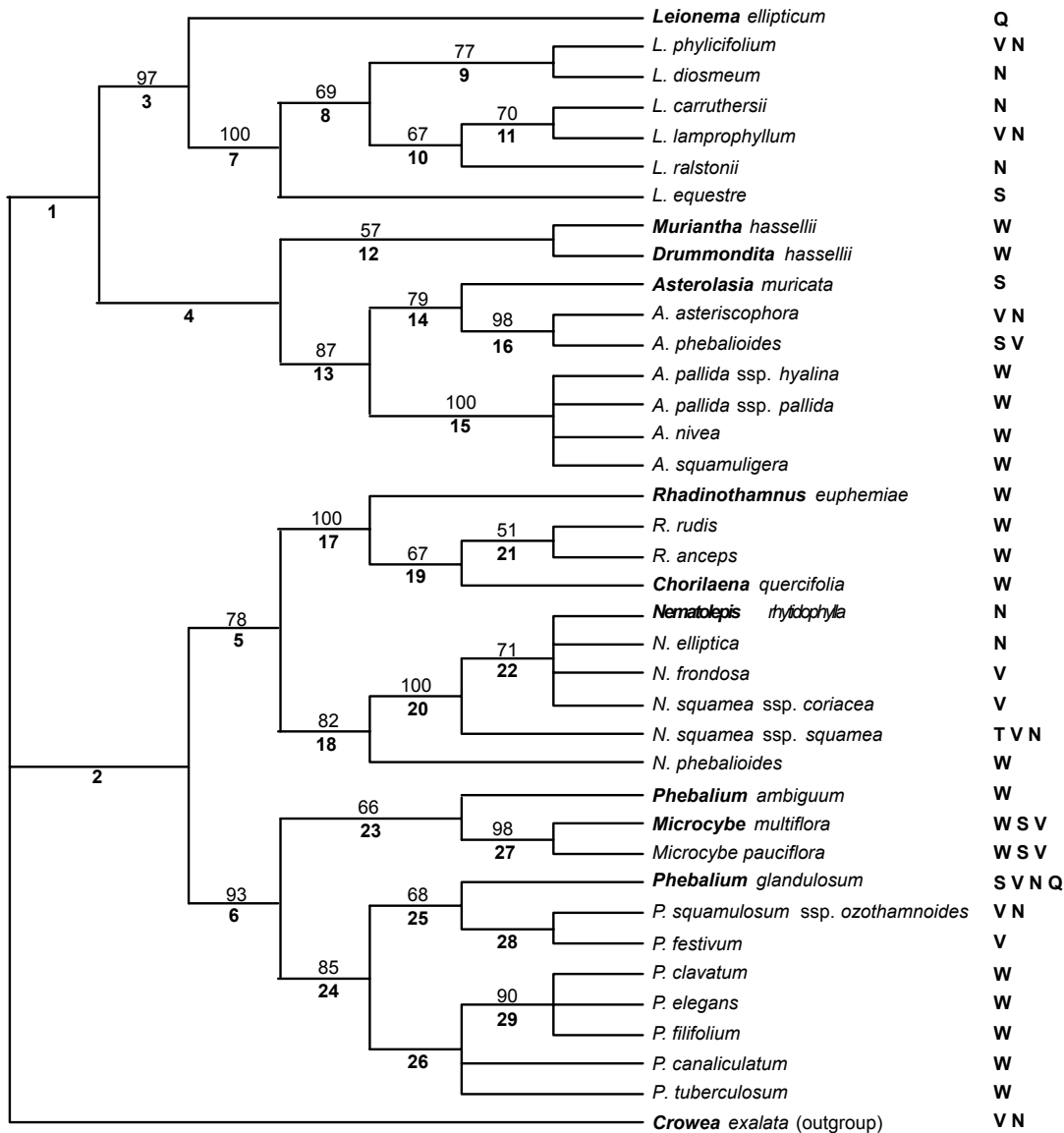


Fig. 1. Strict consensus tree of 90 equally parsimonious trees for the ITS data set. Bootstrap values >50 % are indicated above the branches. Nodes are numbered 1-29 below the branches. Geographic areas of taxa are: W Western Australia, S South Australia (Kangaroo Island), V Victoria, N New South Wales, and Q Queensland.

Chorilaena Endl. are unclear. Wilson (1998) also discussed the relationships of the north Queensland *Leonema ellipticum*, considering it to be unusual within *Leonema* in having bluntly mucronulate anthers and a deeply grooved gynophore, and suggesting that it may warrant generic status.

Currently there is no published phylogenetic analysis to test the monophyly and relationships

of taxa within the *Phebalium* group. The aim of this research was to use sequence data from the internal transcribed spacer regions of nuclear ribosomal DNA (ITS 1 & ITS 2) for a phylogenetic analysis of exemplar species from the genera of the *Phebalium* group. Thirty-six taxa were sampled: nine species of *Phebalium* (32% of species), two species of *Microcybe* (66%), seven species of *Leonema* (30%), six species and two subspecies of *Asterolasia* (38%), three

species of *Rhadinothamnus* (100%), five species and two subspecies of *Nematolepis* (71%), and the monotypic genera *Muiriantha* and *Chorilaena*. *Crowea* and *Drummondita*, tribe Boronieae, were included as two outgroup taxa.⁴

Parsimony analysis of the ITS data matrix for 38 taxa resulted in 90 equally parsimonious trees (tree length = 915; CI = 0.5475; RI = 0.7534). The strict consensus tree (Fig. 1) is well resolved, with 29 nodes identified in all most-parsimonious trees, 24 nodes of which had bootstrap support greater than 50%. The strict consensus tree indicates that six of the currently recognised genera in the *Phebalium* group are monophyletic (*Leionema*, *Muiriantha*, *Drummondita*, *Asterolasia*, *Nematolepis* and *Microcybe*). Exceptions are *Rhadinothamnus*, which is paraphyletic with respect to *Chorilaena*, and *Phebalium*, which is paraphyletic with respect to *Microcybe*. The strict consensus tree also shows one of the outgroup taxa, *Drummondita*, placed within the ingroup. *Diplolaena* was not represented in the analysis, although DNA for two species (*D. angustifolia* Hook. and *D. graniticola* Paul G. Wilson) was successfully amplified, the sequences were extremely unclear despite a number of trials. However, *Diplolaena* is morphologically a well-defined genus whose monophyly is not seriously questioned, although its relationship to other genera in the *Phebalium* group is unknown.

The results indicate the need for some taxonomic revision. *Leionema ellipticum* may warrant recognition as either a monotypic genus or a separate section within *Leionema*. *Leionema* is monophyletic but with *L. ellipticum* from

⁴ The money I received from the Hansjörg Eichler Scientific Research Fund award was used to purchase chemicals and other equipment required to facilitate the extraction, purification, amplification and sequencing of DNA. Amplification and subsequent sequencing of the ITS regions 1 & 2 proved to be problematic for Rutaceae and required trialing a number of different PCR conditions before satisfactory amplifications were obtained. The assistance of the Eichler award allowed me to obtain sequences from additional taxa that would have otherwise been left out of the analysis. Even so, as a result of the problems associated with DNA amplification and sequencing, there are no representatives for *Diplolaena*, Tasmanian *Leionema* species, Tasmanian *Phebalium* species, or *Leionema nudum*, the sole New Zealand taxon, included in the ITS data set. These taxa are to be the subject of future work. The methodology was an evolutionary process, but three main amplification techniques were eventually found to work with varying degrees of success, the most successful of these being a nested PCR strategy (Udovicic & Murphy 2002). Further methods will be addressed in a forthcoming paper or are available directly from myself on request.

Northern Queensland sister to all other taxa sampled (eastern states of Australia and South Australia). It is unique within the genus in possessing a grooved gynophore and bluntly mucronulate anthers (see Wilson 1998).

Rhadinothamnus is paraphyletic with respect to *Chorilaena*. *Rhadinothamnus anceps* and *R. rudis* are sister taxa and were formerly recognised as the taxon *Phebalium* section *Goniocladus* (Wilson 1970). Together, they form a monophyletic group with *Chorilaena* that is sister to *R. euphemiae*, the type for *Rhadinothamnus*. Recognition of the former members of *Phebalium* section *Goniocladus* at generic level would bring the taxonomy in line with the natural relationships indicated by these results.

Nematolepis is indicated as a monophyletic group. However one taxon, *N. squamea* as currently circumscribed is not monophyletic (node 22), indicating that *N. squamea* subsp. *coriacea* should be recognised at specific rank.

Phebalium s.s. and *Microcybe* form a monophyletic group (node 6, bootstrap support 93%) supporting Wilson's (1970, 1998) hypothesis of the close relationship of these taxa. The tree topology indicates that *Phebalium* is paraphyletic. *Microcybe* is clearly a monophyletic group at node 27 with a strong bootstrap support of 98%. *Microcybe* and *Phebalium ambiguum* are sister taxa (node 23, bootstrap support 66%) and together are the sister group to a clade (node 24, bootstrap support 85%) comprised of all remaining *Phebalium* exemplars. *Phebalium ambiguum*, which is endemic to the Western Australian wheat-belt region, was originally described as a species of *Microcybe* by Herbert (1922), presumably on the basis of its habit and sessile flowers, but was later transferred to *Phebalium* by Gardner (1942). *Phebalium ambiguum* is morphologically distinct from all other species of *Phebalium* in possessing a reduced carpel number (three, rarely four and then the fourth much reduced in size), imbricate petals, which are almost valvate, and solitary sessile flowers. It can be distinguished from *Microcybe* by the carpel number (two in *Microcybe*), lepidote petals, and the solitary flowers. Based on morphological differences and the relationships inferred from the molecular data, *Phebalium ambiguum* also warrants recognition at generic level. One alternative would be to accept a broader concept of *Phebalium* by transferring *Microcybe* to *Phebalium*, a course of action that has previously been considered and rejected on morphological grounds by Wilson (1998). Another alternative would be to accept a broader concept of

Microcybe by transferring *Phebalium ambiguum* to *Microcybe*.

Muiriantha and one of the original outgroups, *Drummondita*, are identified as sister taxa, however, the inclusion of additional species of *Drummondita* is required before any further discussion of this relationship can be made. All other genera included in the analysis (*Nematolepis*, *Leionema*, *Asterolasia* and *Microcybe*) are monophyletic and should be retained. Formal taxonomic changes will be dealt with after detailed analysis of morphological characters in combination with the molecular results of this study and inclusion of exemplar taxa that were unable to be sequenced.

The *Phebalium* group, with its endemic taxa, is suitable for biogeographic analysis, and should contribute to a greater understanding of historical area relationships in Australia and between Australia and New Zealand. Three of the genera in the *Phebalium* group have sister clades in eastern and south-western Australia (*Phebalium*, *Nematolepis* and *Asterolasia*). This repeated east-west pattern (geographic paralogy) is suggestive of lineages that existed prior to vicariance events that led to the isolation and differentiation of these major regions.

I would like to express my sincere thanks to the Australian Systematic Botany Society for the financial assistance provided by the Hansjörg Eichler Scientific Research Fund award. The funds enabled the inclusion of important taxa which would otherwise have been left out of the analysis. I would also like to thank my project supervisors Pauline Ladiges, Marco Duretto and Frank Udovicic for their support and encouragement throughout this project.

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Microcharacters in *Hemigenia* R.Br. and *Microcorys* R.Br.

Greg Guerin

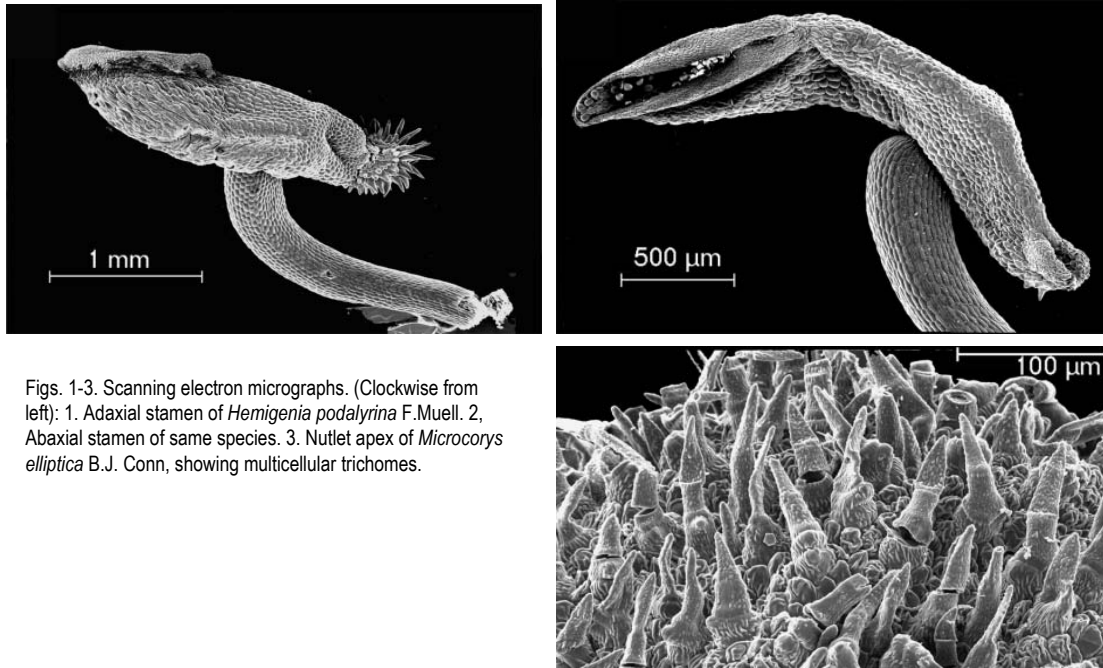
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The overall project is a re-classification of *Hemigenia* R.Br. and *Microcorys* R.Br., and a revision of a clade of c. 25 species. Current taxonomy is poor. Microcharacters were sought to add to cladistic data and to re-evaluate characters used in the current classification. Scanning electron microscopy (SEM) was used to examine nutlet and leaf surfaces and stamen morphology. A \$1000 Eichler grant covered the cost of specimen preparation, materials and microscope time at *Adelaide Microscopy*.

The fertile stamens typically have an elongated appendage formed from anther connective tissue, which is mobile on the filament, bearing one or two fertile cells (Figs 1, 2). The adaxial stamens are typically bearded at the sterile end. The abaxial stamens may be staminodal, with sterile lobes at the distal end. Examination of stamens (fixed using the final stages of the critical-point-drying technique) revealed that the distinction between stamens with one or two fertile anther cells, used in the current classification, is false. The second cell is often reduced or aborted, but

some vestigial remnant always remains – the character is continuous. SEM revealed not all staminodes are homologous. In one species they are reduced, sterile versions of normal stamens, the connective appendages mobile, with vestigial bearding. The data are presented in a draft paper on floral biology to be submitted to *Australian Journal of Botany*.

Nutlets of over sixty species were examined with SEM. The nutlets have a range of phylogenetically informative characters such as shape (typically ovoid or elongate), surface sculpturing (e.g. rugose, reticulate, longitudinally ridged, pitted), exocarp cell shape and sculpturing (isodiametric or elongate, concave to convex or papillate), nature of the attachment scar and indumentum (Fig. 3). Several species have distinctive autapomorphies but many show close relationships to other species, and clear homologies. The data support and add to a building hypothesis on the correct classification based on other morphological characters, such as corolla morphology. The data are presented in a



Figs. 1-3. Scanning electron micrographs. (Clockwise from left): 1. Adaxial stamen of *Hemigenia podalyrina* F. Muell. 2. Abaxial stamen of same species. 3. Nutlet apex of *Microcorys elliptica* B.J. Conn, showing multicellular trichomes.

draft paper to be submitted to *Plant Systematics & Evolution*, and will be included in a cladistic analysis.

Leaf surfaces were sampled in a preliminary study and showed significant variation in trichome type. An exhaustive survey is required

to determine the phylogenetic utility, but the characters may be too variable. Some characters appear invariable and may be of use at higher levels (e.g. stomatal arrangement).

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Sympodial structure of spikelets in the Tribe Schoeneae (Cyperaceae)

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The Hansjörg Eichler Scientific Research Fund (2001) along with several other grants supported my research work on spikelet morphology of Schoeneae (Cyperaceae), which formed one chapter in my PhD thesis. The fund partially covered the cost of Scanning Electron Microscopy studies which were essential for this study. On the basis of this chapter, one paper was formed and published in *American Journal of Botany* (91: 24-36, 2004) with Karen L. Wilson and Jeremy J. Bruhl as co-authors. This report is a slightly expanded version of the abstract of that paper.

Spikelet morphology of 250 specimens of 47 species of Schoeneae was examined using light microscopy and scanning electron microscopy. We confirmed that spikelet structure in

Schoeneae is cymose with a sympodial "rachilla". Monopodial spikelets, as described by most current literature, were not found in Schoeneae. The definitions of spikelet and rachilla are revised. Problems of previous interpretations of spikelet structure in Schoeneae are discussed and the following conclusions are made or confirmed: (1) Prophylls are not always present in sympodial spikelets and cannot be used to distinguish whether a spikelet is sympodial or monopodial. (2) Spikelets of Schoeneae develop acropetally, and the uppermost glume may or may not produce a flower. The last feature may be variable within species and within individual plants, so presence or absence of this flower is not an indication of sympodial or monopodial spikelet structure in Schoeneae. (3) A branch must be constructed in a sympodial or

monopodial manner. If flowers are not axillary to the glumes in a spikelet, they must be terminal to the 'rachilla' internode, i.e. the spikelet is sympodial. (4) Relative position of flower, glume, and axis is a reliable criterion to judge whether spikelets are sympodial or monopodial. When a fertile glume subtends an axis rather than a flower, the spikelet is sympodial. Conversely, when a fertile glume subtends a flower rather than an axis, the spikelet is monopodial. (5) In some species of *Schoenus* and in *Ptilothrix*,

formation of the arch-shaped base of the fertile glume relates to the shape of the inclined nodes on which the glume grows.

This study improves the understanding of spikelet structure, resolves the primary homology of spikelet characters in Schoeneae, and highlights the need to reinvestigate the other tribes of Cyperaceae, where there are also differing interpretations of spikelet structure.

Obituaries

Don Foreman

Many will have been saddened by the news of the premature death of Don Foreman in Geelong, Victoria, after a short illness.

Our sympathy goes out to Joy and her family.

We hope to expand on Don's contribution to Australian and New Guinea plant systematics in the next issue of the Newsletter.

Cliff Boomsma, South Australian forester and eucalyptologist

David Boomsma

seedEnergy Pty Ltd, P.O. Box 3321, Mount Gambier SA, 5290

Clifford David Boomsma was born in Gawler, South Australia on 20th October 1915⁵. That's all we knew.

Dad never saw his father at all and his mother only a few times in his early years. By the time he was 3 he was made a ward of the state and suffered at the hands of the social welfare system of the day. His primary schooling was at Mylor in the Adelaide hills.

However, in Year 7 things turned around for him and he was sponsored for the remainder of his schooling as a boarder at Scotch College. Several Scotch College families took him under their wing and during the long summer vacations he revelled in beach holidays at Encounter Bay.

Dad talked about his introduction to the geology, ecology and biology of that coastal region courtesy of long walks from Victor Harbor to Waitpinga beach alongside Professor Cleland from Adelaide University. That was the beginning of his enduring passion for the Fleurieu Peninsula.

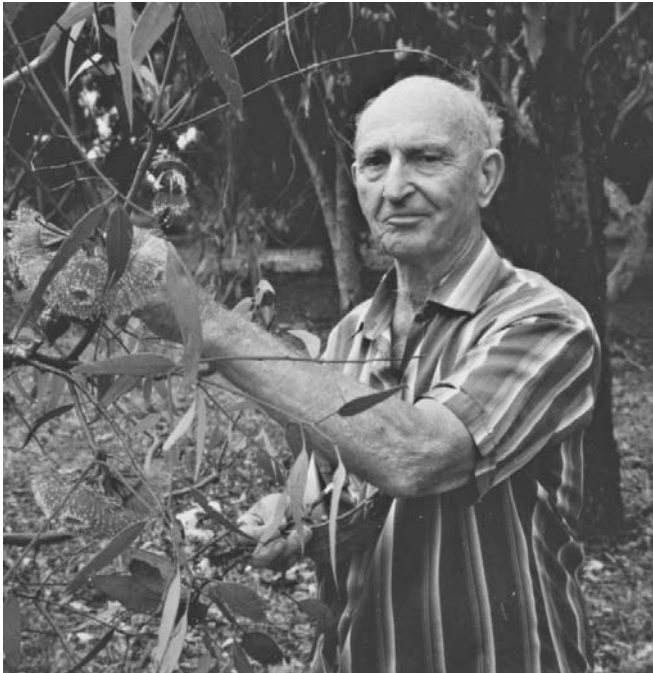
He travelled between Adelaide and Victor Harbor by train and at the ripe old age of 14 met Betty Snow who regularly went to Port Elliot for holidays.

His high school career consisted of football, until his knees packed it in, and boy scouts. Dad rose to be the troop leader at his school.

He related to us how hopeless some of his teachers were and how he opted to undertake two Matriculation subjects (geology and geography) by private tuition. In his case, private tuition really meant self-tuition. He couldn't afford otherwise. He topped the state in both subjects in the public exams.

He went on to study science at Adelaide University and Forestry at the Australian Forestry School, Canberra. In Canberra he played in the inaugural Australian National University hockey team. In 1988, for the golden jubilee celebrations of his hockey club, articles in the *Canberra Times* featured the exploits of the 1938 team both on and off the field. One such story describes dad's open tourer car carrying all 11 of the team ending up in a creek. This unplanned event was blamed

⁵ He died on 13th January 2004.



Cliff Boomsma in 1995, at Monarto near Murray Bridge where he established an arboretum
Ph. David Boomsma

I remember his camping pack of a lump of corned beef, a jar of marmalade, one of sugar, one of salt and a kerosene lantern

Over the next 35 years as a forester with the Woods and Forests Department. He had a great many professional duties. At one stage he was responsible for the oversight of Second Valley forest which is within the Fleurieu Peninsula and as early as 1949 described the benefits of superphosphate to the pine plantations of that region.

He continued to study and write about native tree species and ecology of South Australian woodlands describing many Eucalypt species endemic to the drier regions of our state. He wrote and co-authored several books on tree planting and the forest vegetation in South Australia. Sadly, *Tree Planting Guide for South Australia* is out of print now – but it is still a great book on the subject.

During the 1980s he established an arboretum at Monarto in the Adelaide hills consisting principally of the endemic South Australian eucalypts.

This is a fitting memorial to his association with the State's gum trees.

on a large number of beer bottles that had somehow destabilized the car.

Cars and Dad had a strange relationship – he was rather like Toad of Toad Hall in the way he tore around the countryside and ran into the ditch.

In 1939 following graduation dad was posted to Penola Forest for a brief period before moving to Mt Burr Forest working for the Woods and Forests Department.

He married Betty Snow that same year and they're still remembered fondly in Millicent for their magnificent parties.

Jacqueline, Deidre and I were born from 1942-1944 and in 1945 the family moved to Adelaide with dad based at Woods and Forests head office. In 1947-49 Antonie and Richard were born.

Dad's passion for plant ecology continued with a master's degree focused on the ecology of Fleurieu Peninsula amongst some other regions in South Australia. Other survey work followed and formed the basis of his knowledge about species distribution and plant taxonomy. Professionally he liked geology and soil science and his early years got to do many soil surveys for the Department. He tramped every inch of the Fleurieu Peninsula, often camping overnight, and

My father's passion for trees rubbed off onto me and I too became a forester, Helen and I even lived in the same house on Penola Forest, 30 years later. The name Boomsma loosely translates from the Dutch as "son of a tree" – so we were fated to be foresters.

We all have wonderful memories of family holidays at Port Elliot (a heritage from mum) where dad would sleep in, we would all go cockling at Goolwa, go rabbiting in the Port Elliott hills, go fishing, go to the pictures, and eat crumpets soaked with butter. We looked forward to the May holidays all year!

For the rest of the year at home dad insisted all 5 children did some gardening every week, in fact each child had a designated plot to manage and pocket money was withheld if insufficient work had been done. We had three large suburban blocks requiring slave labour to keep them going. In addition, extra money, 6d per bucket, could be earned by digging up portulaca, a particularly noxious weed. Also in the garden we had a row of almond trees and every year came the job of harvesting and shucking the huge mounds of almonds.

We all remember that for a time in our lives we traded in Christmas trees: growing, harvesting and selling them kept us all busy especially in school holidays before Christmas.

At least once a year mum and dad would throw a large party in our back yard with the shed floor waxed for dancing and coloured lights to brighten the scene. Loud music, dancing, food, drink and a chocolate wheel were the vital ingredients. But there was a motive for the fun, money was raised and donated to the Adelaide Children's Hospital.

Later on our parents' charitable energies were directed to Westminster School and Dad raised a small forest of potted plants for the annual fete's plant stall.

The other things that dad loved besides forestry and gardening were fishing, reading and bridge. He taught Richard and me the fundamentals of fishing and we are hooked for life. He played bridge regularly till the latter years and read till his last days.

In my early memories dad loved a glass of beer or on other occasions a whiskey and it is not surprising that he became a connoisseur of white and red wine. He really enjoyed to the full his Beefsteak and Burgundy Club.

After Mum died, he married Maisie, a dear lady whom we were happy to welcome into the family.

His first stroke was 3 years ago and the time since must have been very tedious for him – but he was still as sharp as ever when it came to forestry matters. I walked into his room one day with a branch of *Eucalyptus* leaves and fruits for him to identify and quick as a flash he said: "You've been to Wirrabara." And he was spot on! It was a form of *E. leucoxylon* ssp *leucoxylon* that was characteristic of the southern Flinders ranges.

I had a professor in Florida who used to say to his graduate students:

What must a man strive to achieve in this life?

- To plant a tree
- To sire a son and
- To write a book

Clifford Boomsma was fortunate to achieve all three goals.

Postscript

Two extracts of verse were read by the celebrant at the funeral parlour and at the graveside:

It's the gum-trees' country. They had it before we came,
They'll have it again when we're gone. Ages they've had it,
Sinking their roots in the rock, covering the ridges,
Weathering the droughts, crooking their green fingers
At life again when the fires have burned them black,
Growing – they're all alive. They're growing now
While you and I shout in their shadow.

From Douglas Stewart's play *Ned Kelly* (1943).

Whoso walketh in solitude,
And inhabiteth the wood,
Choosing light, wave, rock and bird,
Before the money-loving herd,
Unto that forester shall pass
From these companions, power and grace.

From Ralph Waldo Emerson (1803-1882), *Wood Notes II*.

Acknowledgement

Dad never talked about his origins. I acknowledge Jacqui and Richard's diligent research in seeking out his life story.

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of the state, he was most noted for his intimate field knowledge of *Eucalyptus* of South Australia. He published 12 species and subspecies and made two new combinations.

Table. *Eucalyptus* species named and combinations or new ranks designated by Cliff Boomsma, with date of publication

<i>E. mannensis</i> (1964)	<i>E. sparsa</i> (1979)
<i>E. pyriformis</i> ssp. <i>youngiana</i> (F.Muell.) Boomsma (1969)	<i>E. peeneri</i> (Blakely) Pryor & Johnson ex Boomsma (1979)
<i>E. lansdowneana</i> ssp. <i>albopurpurea</i> (1974)	<i>E. yumbarrana</i> (1979)
<i>E. incurva</i> (1975) = <i>E. gillenii</i>	<i>E. yumbarrana</i> ssp. <i>striata</i> (1980) (now not recognized)
<i>E. eremicola</i> (1975)	<i>E. viminalis</i> ssp. <i>cygnetensis</i> (1980)
<i>E. yalatenis</i> (1975)	<i>E. flindersii</i> (1980)
<i>E. calcareana</i> (1979)	<i>E. wyolensis</i> (1988)

Cliff Boomsma was a regular visitor to the State Herbarium of South Australia and attended some of the early meetings of the South Australian Chapter of ASBS. As attested above by David, Cliff obviously delighted in a drop of good red. At one Christmas get-together of the Chapter he sidled up with a special bottle of red tucked under his arm. The twinkle in his eyes remains my lasting recollection of him.

As well as his handbooks to the trees and shrubs of South Australia and his publication on the vegetation

His collections, initially housed in the South Australian Woods and Forests Department Herbarium, were donated to the State Herbarium near his retirement in 1980. The State Herbarium of South Australia contains 2200 of his collections. Of these 1640 were *Eucalyptus*, 1660 came from South Australia, 138 from Victoria, 262 from Western Australia, 84 from New South Wales and Australian Capital Territory and 30 from Northern Territory, with principal activity in 1993-37 and 1947-90, particularly 1962-87. Collection books for specimens numbered 1-900 are located at the State Herbarium.

Bill Barker

Response

Response to Walker and Simpson's views on the ICBN Proposal 1584 by Orchard and Maslin to conserve the name *Acacia* with a conserved type: *ASBS Newsletter* 117: 17-21 (2004)

Bruce R. Maslin

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I do not intend to present a comprehensive discussion of details and justification relating to the Orchard & Maslin (2003) proposal to conserve *Acacia* with a conserved type. This is discussed at length, for example, at the World Wide Wattle website (Web Ref. 1), in an article by Maslin, Orchard and West titled 'Nomenclatural history and classification history of *Acacia*'. It supplements the rather terse presentation of the Orchard & Maslin (2003) paper.

The Orchard & Maslin proposal which triggered the Walker & Simpson response was made in accordance with Articles accepted at the International Botanical Congress of 1993 in

Tokyo and published in the International Code of Botanical Nomenclature (Tokyo Code), 1994. Numerous other proposals have utilised these provisions in the last decade. Our proposal, which is currently before the Committee for Spermatophyta for consideration, is an attempt to minimize the deleterious nomenclatural impacts worldwide when the genus *Acacia* is split. I am fully aware that the Committee has a difficult decision to make because whatever they decide there will be people who will not be particularly pleased with the outcome. A summary of the main issues involved in the Orchard & Maslin proposal is provided in the Appendix. It is relevant here to note that despite Pedley's (2003) pre-emption of the Committee's deliberations it is

inappropriate at present to use the name *Racosperma* (Maslin 2004).

The following is my brief reply to the numbered points raised by Walker & Simpson. This is based on a response prepared by Tony Orchard and myself to an earlier draft of the Walker and Simpson paper that was submitted to *Taxon*, via John McNeill. I emphasize, however, that the remarks presented here are mine and I take sole responsibility for them.

1. Numbers of name changes

Accommodating name changes is certainly central to this whole issue: around 200 if the Orchard & Maslin proposal succeeds, around 1150 if it is lost (these numbers do not include the 231 species in subgenus *Aculeiferum sens. lat.*, *Senegalia*, whose names will change irrespective of whether or not our proposal is successful). Indeed, conservation provisions of the Code which the Orchard & Maslin proposal invoke aim to minimise unnecessary changes. It is certainly possible to produce lists that show equivalent old and new names, and Walker & Simpson appear to place considerable faith in such lists. Lists, however, are not the main issue here. What is really relevant are the numbers of name changes, and the associated monetary and inconvenience costs associated with making them. These changes affect database systems, herbarium collections, botanic gardens, plant nurseries, guidebooks, Floras, horticultural manuals, popular and scientific websites, and technical literature on the (predominantly phyllodinous) species involved in the global industries using *Acacia* for a variety of purposes (see no. 3 below), etc. Changing information in computer databases is comparatively easy, but changing from *Acacia* to '*Racosperma*' will not involve a simple "search and replace" of one genus name for the other because of the gender issue which is discussed under no. 2 below. This fact will add considerably to the cost of updating computer database systems.

The criticism of the *Flora of Australia* (Orchard & Wilson 2001) for not having adopted Pedley's 1986 classification (thus resolving this whole issue) is misguided because it ignores the fact that at the time of producing the Flora treatment of *Acacia* there simply was insufficient evidence to accept Pedley's scheme. These matters are discussed in Maslin (1989). Despite Pedley (2004) having pejoratively labelled many of these counter arguments to his proposal as 'dodgy', the fact remains that until the work of Chappill & Maslin (1995) and the molecular studies of Miller and his associates (e.g. Miller & Bayer 2000, 2001 & 2003; Luckow et al. 2003) there simply had not been sufficient broad-base comparative

data available to assess the generic status of *Acacia* and to make informed, responsible decisions. It is my intention to address this and the other, often emotive, arguments advanced by Pedley (2004) in the next issue of the *Acacia Study Group Newsletter*.

2. Changes of gender endings of specific epithets

Again, the faith in computer-generated lists is touching but misplaced. Because of the gender issue associated with the name *Racosperma*, computer-based systems will not be able to be globally changed from *Acacia* to *Racosperma*. Instead, in most cases each taxon will need to be changed individually.

3. Large number of economically important species names affected

The whole point of the present proposal is to prevent industry from having to make changes and updating of all sorts, including methods, legislation, labelling, policy and so on. *Acacia* subg. *Phyllodineae* ('*Racosperma*') has overwhelmingly the largest numbers of species that are important economically, socially and environmentally throughout the world. As discussed in the Maslin, Orchard & West paper referred to above these species occur in extensive commercial plantations for timber, pulp and tannin, are used as a source of fuel, food and fodder, occur as significant weeds or are in trials for environmental and a range of other purposes. Over the past 10 years seed from 157 different taxa of *Phyllodineae* have been distributed from Australia to 71 countries around the world for these purposes.

4. Confusion in Africa between *Acacia* and *Senegalia*

Our point is that major disruption in Africa, South America and Asia is inevitable when the various segregates are formally recognised. Change of the few remaining *Acacia* species to *Vachellia et al.* will not significantly add to this confusion. It is a matter of opinion as to whether Africans, for example, will find *Senegalia* – *Vachellia* vs *Senegalia* – *Acacia* a more or a less confusing scenario for their native *Acacias*. It must be remembered, however, that in Africa the Australian species of subg. *Phyllodineae* ('*Racosperma*') are very common in many areas of the continent where they occur as significant environmental weeds and in plantations (South Africa) or are extensively utilised for food, fodder, environmental purposes, etc. (sub-Saharan regions and around the Mediterranean). Africa therefore will need to accommodate, one way or the other, three generic names where now they currently use just one.

5. Profound repercussions of name changes in the huge *Acacia* literature

There will be profound repercussions whichever way the Committee's decision goes. However, the whole point of the Orchard & Maslin proposal is an attempt to minimize this impact at a global level. All of Walker & Simpson's arguments presented here apply equally to Orchard & Maslin's suggested solution. Yes, *Acacia* in Africa and the Middle East has a large literature. However, the name *Acacia* in Australia also has a huge literature, as it is the largest single genus in that continent, and is a major or dominant component of most vegetation communities. As Australian phyllodinous species are being extensively used overseas for a range of purposes (see above) there is also a huge literature based on these taxa. A change to *Racosperma* will have major impacts far beyond Australia, and most of these impacts will affect workers of the non-taxonomic community who use plant names.

6. No adoption of available names in *Racosperma*

Walker & Simpson are confusing taxonomic and nomenclatural issues here. Certainly there is a requirement for scientific evidence to justify the split of *Acacia*, and this is what I have been advocating and trying to facilitate and/or produce since 1986. However, it is not at all inconsistent to attempt to minimize the nomenclatural impacts given that the scientific evidence now indicates that taxonomic change is needed. Frequently, one of the strongest arguments advanced for not accepting a proposal such as ours is that the name changes have already entered the literature in a significant way, and that a reversal would cause more disruption than a conservation/rejection action. In the case of *Racosperma* Orchard & Maslin argue that it is not too late to avoid the disruption that will be caused by adopting so many name changes.

I disagree with Walker & Simpson in saying that "*Racosperma* has been widely adopted overseas ...". Apart from the McKenzie publication that they cite the other papers they list are cited in Maslin, Orchard & West (referred to above) as indicative of a minimal adoption of the name *Racosperma*, by both the botanical and non-botanical communities.

Pedley deserves credit for his far-sighted suggestions of 1986 et seq.

We do not dispute that Pedley's papers were a contribution to knowledge in this generic complex, and no-one can take that away from him. His publications are a matter of record. The conceptual basis for Pedley's generic classification is based on the work of Vassal

(1972). However, we do not agree with the argument that Walker & Simpson seem to be putting, that Pedley should be rewarded for this effort by the 'honour' of making 1191 combinations which are going to cause major disruption to global taxonomy, when a simpler solution is available.

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- Web Ref. 1. www.worldwidewattle.com

Appendix: Summary of salient points relating to the Orchard & Maslin (2003) proposal to retypify *Acacia*

1. *Acacia* as currently defined comprises 1352 species worldwide (second largest genus in Leguminosae).
2. There is a growing consensus among specialists that the genus will soon be split (Maslin *et al.* 2003). Most recent evidence indicates that at least five (monophyletic) genera will be recognized: (Generic names used here, including the table below, are in accordance with currently designated types).
 - *Acacia* (*Acacia* subg. *Acacia*)
 - *Senegalia* (syn. *Acacia* subg. *Aculeiferum*)
 - *Acaciella* (syn. *Acacia* subg. *Aculeiferum* sect. *Filicinae*)
 - Genus 'x' ('*Acacia coulteri*' group)
 - *Racosperma* (syn. *Acacia* subg. *Phyllodineae*)
3. Size and distribution of the five genera may be summarized in the Table below.
4. A proposal was submitted by Orchard & Maslin (2003) to minimize deleterious nomenclatural repercussions following division of *Acacia* by replacing the existing type of *Acacia*, *A. scorpioides* (= *A. nilotica*), with a new type (*A. penninervis*) from *Acacia* subg. *Phyllodineae* (under ICBN Article 14).
5. This proposal is currently before the Committee for Spermatophyta for consideration.
6. This proposal affects only the first and last taxa listed in the above table, namely, '*Acacia*' and '*Racosperma*' and if successful these would become known as '*Vachellia*' and '*Acacia*' respectively. The two options for the future outlined in the proposal are given below.

7. **Option 1.** Apply names in accordance with their currently designated types (i.e. the Orchard & Maslin proposal is unsuccessful); the consequences of this action would be:
 - a) 960 species (comprising c. 1100 taxa) belonging to the largest group (subg. *Phyllodineae*) would have to be referred to *Racosperma*, a name that is currently not in use. Thus, about 99% of the Australian *Acacias* (the largest vascular plant genus in that country and its national floral emblem) would become *Racosperma*.
 - b) 161 species belonging to one of the smallest groups (subg. *Acacia*) would retain the name *Acacia*.
 - c) Most commercially important species occur in the subg. *Phyllodineae* (these species are grown in 70 countries where they occupy c. 2 million ha in plantations, *vide* Midgley & Turnbull 2003) and so the name change would affect trade and industries in a number of countries. Similarly, taxa in subg. *Phyllodineae* are important environmental weeds in many countries.
 - d) In Asia, Africa, the Americas and Australia the name of 203 species would have to be changed to *Senegalia*.
 - e) In Africa and Asia about half the species would remain *Acacia* and half would become *Senegalia*.
 - f) In the Americas about half the species would remain *Acacia* while the remainder would be accommodated in *Senegalia*, *Acaciella* and *Gen. nov.*
 - g) In places where species of *Acacia* and *Senegalia* co-occur (e.g. parts of Africa and the Americas) there would likely be some confusion as to which species have changed their name and which have not.

Table. Species numbers in segregates of *Acacia* sens.lat. in major regions of the World (a, see point 8 in Appendix, b, see point 9).

Infrageneric name	Generic name		Americas	Africa	Asia	Australia & Pacific	Total no. species
	Option 1 ^a	Option 2 ^b					
<i>Acacia</i> subg. <i>Acacia</i>	<i>Acacia</i>	<i>Vachellia</i>	c. 60	73	36	7	c. 161
<i>Acacia</i> subg. <i>Aculeiferum</i> (sens. str.)	<i>Senegalia</i>	<i>Senegalia</i>	97	69	43	2	203
<i>Acacia</i> subg. <i>Aculeiferum</i> sect. <i>Filicinae</i>	<i>Acaciella</i>	<i>Acaciella</i>	15	-	-	-	15
' <i>Acacia coulteri</i> ' group	Genus 'X'	Genus 'X'	13	-	-	-	13
<i>Acacia</i> subg. <i>Phyllodineae</i>	<i>Racosperma</i>	<i>Acacia</i>	-	2	10	955	960
Total no. species			c. 185	144	89	964	c. 1352

8. **Option 2.** Retypify *Acacia* with an Australian type from *Acacia* subg. *Phyllodineae* (i.e. the Orchard & Maslin proposal is successful); the consequences of this action would be:
- 960 species of subg. *Phyllodineae* would retain the name *Acacia* (thus avoiding over 1000 name changes, and avoiding gender problems associated with the adoption of the name *Racosperma*).
 - 161 species of subg. *Acacia* would have to be referred to the name *Vachellia*.
 - The majority of the Australian *Acacia* taxa would not require a name change (only c. 10 species would have to change, to *Vachellia* and *Senegalia*).
 - Species of the most extensively commercially utilized group commercially (subg. *Phyllodineae*) would not require a name change.
 - In Asia, Africa, the Americas and Australia the name of 203 species would be referred to *Senegalia* (same as in Option 1).
 - In Africa and Asia all *Acacias* would change their name, about half to *Vachellia* and half to *Senegalia*. This would probably be less confusing than having only half of them change as would happen under Option 1.
 - In the Americas all *Acacias* would change their name, to *Vachellia*, *Senegalia*, *Acaciella* and *Gen. nov.* This would be no more confusing than in Option 1.
 - In places where species of *Vachellia* and *Senegalia* are sympatric (e.g. parts of Africa and the Americas) the consequences would be no less disruptive than in Option 1 (and perhaps less so because the name *Acacia* would have been removed completely for the indigenous species of those regions).

ABRS report

ABRS Advisory Committee

The ABRS Advisory Committee met in Canberra from 23-25 March this year to consider Participatory Program Grant applications for the 2004/05 financial year. Recommendations on priorities for funding were prepared for the Minister. Once again, the Advisory Committee was very impressed by the high standard of applications, which included for the first time, proposals for the development of biodiversity information products. They were also pleased to note that all research grant funds for the current financial year have been distributed.

Scholarships and Bursaries

The 2004 ABRS PhD Scholarship, with a total value of \$79,000, has been awarded to a University of Tasmania student. Jimmy Twin was awarded the scholarship to study 'Antarctic Actinobacteria' over three years. The ABRS PhD Scholarship is part of the ABRS Grants Program, administered by ABRS.

A total of 7 travel bursaries for students of taxonomy have been approved so far this year. Applications for bursaries close on 31 March 2004.

ABRS web site

ABRS has employed a dedicated staff member (1-2 days per week) to manage ABRS web site development and design in collaboration with DEH web managers. ABRS also employs a database manager having responsibilities for the

online component of the website. This year we have completed a major restructure and revamp of ABRS website, with navigation and layout completed. Recent initiatives include the following.

*Flora of Australia online*⁶

This is the world's first national online interactive taxonomic data resource for flora allowing flexible, user-defined searching. The *Flora of Australia online* project reached fruition in January 2004 with data for just over 50 families of plants going live at www.deh.gov.au/biodiversity/abrs/online-resources/abif/flora/main/. This data is derived from 11 volumes of the *Flora of Australia* publication series. In addition two separate web sites were developed for the Oceanic Islands floras: one for Lord Howe and Norfolk Island, and the other for the remaining islands. The website allows for flexible, user-defined searching. The online delivery includes the identification keys and much of the line art from the books.

Australian Faunal Directory (AFD)

This database continues to be populated with data from contributors to ABRS. This financial year we have added a further 12,500 species to the database. A number of enhancements have also been made to the functionality of the database and we have produced checklists for each group to enable Web Search engines to find taxon names in the database.

⁶ See News, p. 22

Global Biodiversity Information Facility (GBIF)

The facility now exists for Australian institutions to become data providers to GBIF (using the DiGIR software). Access to ABRs data in the Australian GBIF node is now functional. At present the data providers are: ABRs (Australian Faunal Directory), the Australian Antarctic Division (Seabirds, Elephant Seals, Weddell Seals) and CSIRO Entomology (Australian National Insect Collection). Australia was the first node in the Southern Hemisphere to deliver data using the DiGIR protocol to GBIF, recently New Zealand has also come online. Other Australian data providers are encouraged to become GBIF data providers and ABRs can provide assistance and play a co-ordinating role in integrating new providers.

Staffing news

Ms Virginnia du Toit, ABRs' Graphic Designer has left to resume full-time studies. Ms Brigitte Kuchlmayr is acting in the vacant position.

Dr Muhammad Iqbal has been promoted to a higher-level position in the Department's Land and Wildlife Division. A new job description has been prepared for the Administrative Assistant position and Ms Cathy Crozier has been appointed on a non-ongoing basis.

Mary Colreavy
Director, ABRs

Miscellanea

A journal for tropical Australian botany

Looking for an outlet for that description of a new species or revision of a tropical genus? If so, then the journal *The Beagle* – its full title is *The Beagle, Records of the Museums and Art Galleries of the Northern Territory* – may be just what you are after.

Published once or twice a year, depending on the material available and budgetary constraints, *The Beagle* is a refereed journal with an A4 format. It is a vehicle for papers covering systematics and other studies of the flora and fauna of not just the Northern Territory, but tropical Australia, southeast Asia and Oceania. In addition to this it disseminates information on the art, culture and archaeology of the people of these areas. All in all it presents a fascinating mix of papers.

The most recent publication, volume 19 (December 2003) contains seven zoological papers (mostly describing new taxa, including fossil frogs), one on the first recorded petroglyphs for the Darwin region, and three botanical papers:

Short, P., Dixon, D. & Osterkamp Madsen, M. – A review of the ferns and fern allies of the Northern Territory. pp. 7–80.

Dixon, D., Cowie, I. & Kerrigan, R. – *Ptychosperma macarthurii* or *P. bleeseri*? The taxonomic status of *P. bleeseri* reconsidered. pp. 81–86.

Craven, L. A. – A new species of *Syzygium* (Myrtaceae) from the Arnhem Land Plateau, Northern Territory, Australia. pp. 87–89.

Over the years few botanical papers have been published in the journal but its editor, Dr Chris

Glasby, will “welcome the submission of botanical papers dealing with flora of the Territory and our neighbouring region... we hope to see a more even balance between zoology, botany, archaeology and human culture papers in the future.”

Should you wish to enquire further then the details are:

The Editor, Academic Publications,
Museum & Art Gallery of the Northern Territory,
GPO Box 4646,
Darwin, N.T. 0801
e-mail: chris.glasby@nt.gov.au

Accessing more on the electronic publishing debate

Want to read more about the electronic publication debate with respect to journals? *Nature* is conducting a special web focus on this topic and the access is free.

The Internet is profoundly changing how scientists work and publish. New business models are being tested by publishers, including open access, in which the author pays and content is free to the user. This ongoing web focus will explore current trends and future possibilities. Each week, the website will publish specially commissioned insights and analysis from leading scientists, librarians, publishers and other stakeholders, as well as key links, and articles from our archive. All content is available free.

www.nature.com/nature/focus/accessdebate/
(address of debate website)

New product from Lucid

Lucid™ Phoenix is a new computer based dichotomous key Builder and Player produced by the Centre for Biological Information Technology that allows traditional paper based identification keys to be published on the Internet or on CD.

Lucid™ Phoenix identification keys can be directly embedded within web pages and can be operated on a variety of software platforms including Windows, Macintosh and UNIX.

For further information:

Email: enquiries@lucidcentral.org

Web: www.lucidcentral.org

ABLO report

It was an auspicious day to arrive in England - the day that Australia and England played the Rugby World Cup final, and Australia lost. Nobody was lost for a topic of conversation during my first few days at the herbarium. I had the luxury of a week long overlap and handover period with the 2002-03 ABLO, Roberta Cowan, but even without it, her comprehensive and thorough ABLO manual would have helped me to become familiar with Kew and the duties of the ABLO. Roberta, and Alex George, also introduced me to staff at the Natural History Museum and the Linnean Society. My thanks to them both for making the handover so smooth.

Due to me taking up my posting so late in the year, the prevailing holiday spirit meant that there were few requests to the ABLO for assistance before Christmas and into the New Year. The positive side to this was that I was able to make a good start on my own work. However, there is now a steady flow of requests for help, both from Australia and locally. Due to the low number of requests to begin with, I have not yet visited any herbaria outside London. I have also had no Australian visitors to Kew yet. Where are you all?

I did my patriotic duty as an Australian and distributed ANZAC biscuits on Australia Day to remind everybody of the big day.

Kew news

The gardens at Kew are beautiful whatever the season. I have enjoyed walking through them in frost and snow, and just now the daffodils, snowdrops and crocuses are making a wonderful display. The Orchid Festival, called Orchids Exposed, is in full swing with a very colourful display in the Princess of Wales Conservatory. A badger has taken up residence near the Duke's Garden - the extensive earthworks must be causing the gardeners much anxiety.

At the moment there is a debate whether to site mobile phone relays in the Campanile near the Victoria Gate - the staff and local residents have been surveyed, with a decision likely in a few weeks. It seems that most people want to be able to use a mobile phone, but do not want to have to look at the phone masts.

Kew has been awarded the European Garden Culture Prize 2004, in recognition of its contributions to science and plant conservation.

If you visit the Kew website you will notice that there is a new logo. You can also take a look at the Flora Zambesiaca online, at www.kew.org/efloras/.

News of people

Two Kew staff members have recently been honoured by the Linnean Society. John Dransfield has been awarded the Linnean Medal for Botany, in recognition of his exceptional contributions to palm biology and tropical botany as a whole and Lucy Smith has been awarded the Jill Smythies Award for Botanical Illustration in recognition of her outstanding achievement as a botanical artist.

At the Natural History Museum (BM) Prof. Richard Bateman has resigned as Keeper of Botany, although he intends to continue to work as a member of staff.

Weather

No ABLO report would be complete without a comment on the English weather, but I cannot find any reason for complaining, because the winter has been very mild, hardly colder than a Canberra winter. Apart from the occasional frost, it has snowed twice, at the beginning and end of February, with inevitable chaos on the railways and roads.

Annette Wilson

⁷ See News, p. 22

News

Australia Day Honours

Society Member Gwen Harden, formerly of the New South Wales National Herbarium, is congratulated on her award in the Australia Day Order of Australia Honours.

Recipients associated with botany and horticulture are listed below.

Medal (OAM) in the General Division

- Dr Edward Adrian DUYKER
Sylvania-Southgate NSW 2224
For service to the community through the preservation and documentation of Australian history, particularly that of the early European explorers and Mauritian immigrants.
- Mrs Kaylyn Mary GEEVES
Port Huon Tas 7116
For service to botany and conservation, particularly through the Australian Plant Society Tasmania.
- Mrs Gwenneth Jean HARDEN
Valla Beach NSW 2448
For service to botany as a researcher, publisher, conservationist and educator.
- Mrs Elizabeth Mary HIGGS
Kew Vic 3101
For service to the community, particularly through the Friends of the Royal Botanic Gardens Melbourne.
- Mr Ivan Grenfell HOLLIDAY
Tranmere SA 5073
For service to the environment, particularly as a researcher, educator and promoter of Australian flora.
- Mr John Grant SIMMONS
Legana Tas 7277
For service to botany, particularly through the identification, documentation and promotion of Australian acacias.
- Mrs Marion Helen SIMMONS
Legana Tas 7277
For service to botany, particularly through the identification, documentation and promotion of Australian acacias.

Floras on line

Flora of Australia on line⁸

The Australian Biological Resources Study is pleased to announce the Flora of Australia is now online. *Flora of Australia online* delivers the landmark publication series Flora of Australia to a potentially vast audience. This comprehensive, scientific resource demonstrates the Australian Government's commitment to ensuring Australia remains a world leader in taxonomy and managing, presenting and using biodiversity knowledge. This online resource is a result of collaboration between the Australian Biological Resources Study and national and international botanical communities and institutions.

This is a world first for delivery online of an interactive, flora resource at a national level with a flexible, user-defined search interface. Clients can customise data delivery to suit their own needs.

Information is available for a wide range of uses, such as school projects, habitat information for land managers, identification keys for naturalists, or species lists for environmental impact statements and land surveys. The information links to electronic distribution maps and much of the line art from the books. Around 8,500 taxa have been published so far in the Flora of Australia book series, and to date 4,500 of these are available in *Flora of Australia online*.

Nine volumes of the Flora of Australia book series: 3, 11A, 11B, 12, 16, 17A, 17B, 35 and 48 can be accessed on the website (Web Ref. 1). And there are further links on this page to the treatments of the offshore islands in volumes 49 and 50.

Web Ref. 1: www.deh.gov.au/biodiversity/abrs/online-resources/abif/flora/main

Flora of New South Wales

The New South Wales Flora is also currently on line in prototype form (Web Ref. 1) using the earlier printed Flora as a basis. As well as the traditional dichotomous keys they have a rather novel approach to interactive keys. Interactive keys to *Eucalyptus* and *Acacia* species are found separately under *Eucalink* and *Wattleweb*.

Also featured on their pages is *HerbLink*, a catalogue and image database to types held in the

⁸ Announcement on Taxacom list-server.

New South Wales Herbarium. Twelve hundred high-resolution images of *Eucalyptus* types are now available on the site. Unfortunately one can only query on a taxon at the moment, but queries on collectors will no doubt become available in the future.

Also hosted on the site, for the moment at least, is the *PNGPlants* searchable database of the Papua New Guinea National Herbarium in Lae (Web Ref. 2). The database is presently mostly populated with data dumps from specimens held in Australian herbaria (NSW, CANB, BRI and MEL).

Web Ref. 1. <http://plantnet.rbg Syd.nsw.gov.au/>

Web Ref. 2. http://plantnet.rbg Syd.nsw.gov.au/PNGplants/proj_details.html

Flora Zambesiaca⁹

A database containing all the published volumes of Flora Zambesiaca is now available on-line via the Royal Botanic Gardens Kew website (Web Ref. 1).

The Flora is currently 70% complete and the database contains around 10,000 accepted names. Fully indexed searches are possible on accepted scientific names and synonyms, plant habit, geographical location, altitudinal range and endemic status. The details displayed for each taxon include the full Flora account (ie. nomenclature, description, distribution, ecology etc.). This online version is intended to help searching for accepted names and synonyms across the 32 volumes of the Flora. Advanced searches can be used to generate checklists of species for any Flora Zambesiaca country or subdivision, or can be used to help identify species. The database was digitised from hard copy text and is a landmark in the provision of legacy taxonomic and floristic information in new digital formats. Feedback would be welcome by email to the eFloras team at fzweb@kew.org

Web Ref. 1. www.kew.org/efloras/

Flora of China

For a listing of those families already covered in the Flora of China (both published and in preparation) and available on the Web at a Harvard University Herbaria website (Web Ref. 1). Selected generic keys run on another interactive key programme called *ActKey*.

Web Ref. 1. <http://flora.huh.harvard.edu/china/mss/treatments.htm>

World Wide Wattle website launched

The World Wide Wattle website (www.worldwidewattle.com) was launched during an Environmental Expo in the Shire of Dalwallinu on March 25th.

The site is a collaborative project involving the Shire of Dalwallinu, the Western Australian Department of Conservation and Land Management and the Canberra-based Australian Tree Seed Centre (part of CSIRO Forestry and Forest Products).

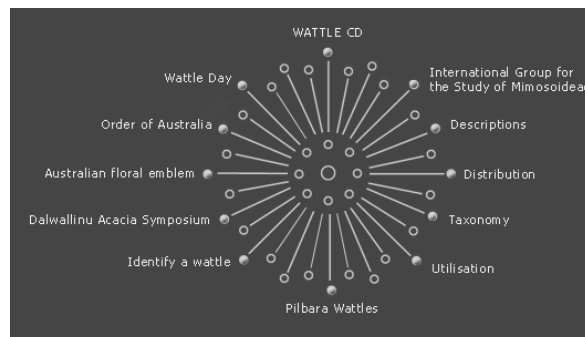
The aim of the website is to deliver authoritative information on Australian species of *Acacia* in order to inform, educate and promote the conservation, utilisation and enjoyment of this important group of plants.

Information focuses on the scientific, social and cultural importance of Wattles and is intended for use by a wide range of users, both professional and amateur, including taxonomists, ecologists, foresters, horticulturalists, naturalists, school children, and indeed, anyone who simply wants to learn more about this fascinating group of plants. The website gives access to descriptions and photographs of the species, information about where they grow and how many species occur in different parts of the world, as well as information on the cultivation, utilisation and taxonomy of the group.

The website is a culmination of work by a team headed by Mr Bruce Maslin from the West Australian Department of Conservation and Land Management. Mr Maslin has been studying wattles for more than 30 years.

AcaciaSearch book

The *AcaciaSearch* book is published by the Joint Venture Agroforestry Program (JVAP) and identifies, evaluates and provides detailed information for 35 species of *Acacia* that are



⁹ Announcement on Taxacom list-server

considered prospective as new woody crop plants in the agricultural region of southern Australia (within the 250–650 mm rainfall zone). The impetus for the study was the need to undertake large-scale commercial plantings with perennial plants as a treatment for salinity control in these regions.

Emphasis was given to fast growing species with potential for producing large amounts of wood biomass that may find uses as solid and reconstituted wood products and for bioenergy, and which may possess commercially attractive by-products such as extractives (especially tannin and gum) and fodder.

This publication is available from the Rural Industries Research and Development Corporation (RIRDC: phone 02 6272 4891 or see www.rirdc.gov.au).

The above is based on a media release by the Dallwallinu Shire on 10th March 2004.

International recognition for LANDSCOPE Expeditions

LANDSCOPE Expeditions' integrated approach to eco-tourism has been internationally recognised by an International Environmental Award from the Association of German Travel Agents and Tour Operators (DRV). The annual DRV International Environmental Awards recognise organisations that have achieved

notable success in protecting or improving the environment while also supporting tourism. It is the first time an award has gone to an Australian organization. Explore Nepal Ltd. from Kathmandu in Nepal, with the major award, and Chumbe Island Coral Park on Zanzibar in Tanzania were the other recipients.

The expeditions program is a joint initiative of the Department of Conservation and Land Management (CALM) and UWA Extension of The University of Western Australia.

Since 1992 more than 60 LANDSCOPE Expeditions research programs have been carried out in remote regions of WA, resulting in many important discoveries for science.

The expeditions are led by CALM scientists with help from related organisations, such as the Western Australian Museum, CSIRO and universities in Australia and overseas. Members of the public who take part in the expeditions help finance the research.

LANDSCOPE Expeditions works with scientists and the tourism industry to anticipate the effects of disturbances and offers solutions to manage them for a sustainable future.

The Beagle of Charles Darwin and Australian exploration found?

The mystery of what happened to the ship that ferried Charles Darwin around the world may have been solved.

A team led by Dr Robert Prescott of the University of St Andrews has located what they believe are the remains of *HMS Beagle* beneath an Essex marsh. The ship's remains are embedded in five metres of mud at a site near Potten Island.

Sophisticated radar technology was used to detect signs of wood and metal that may belong to the bottom of *HMS Beagle*.

To explore the marsh further, technology designed for the UK's recent ill-fated mission to Mars is being considered. Coincidentally the Mars Red-Planet craft was named *Beagle 2* after its 200-year-old predecessor.

*From BBC News On-Line, 27 Feb 2004
<http://news.bbc.co.uk/2/hi/science/nature/3490564.stm>*



Displaying the DRV award certificate are (from left) Landscope Expeditions' Kevin Kenneally and Jean Paton, with Kim Roberts, the Director of UWA Extension at The University of Western Australia. Ph. Rhianna Mooney

Taxonomy, vouchers and the AVH to underpin Blackberry science

A two-year NHT Weeds of National Significance project aimed at giving access to improved knowledge of the taxonomy of invasive Blackberry and its best-practice management is now well-advanced. Coordinated with the help of the government herbaria and agricultural authorities, six workshops aimed at training potential trainers in a Lucid tool for identifying naturalised and native *Rubus* were held in Albany, Canberra, Sydney, Adelaide, Melbourne and Hobart last summer.

The current taxonomic knowledge, developed since the foundation work of the Keith Turnbull Institute in Victoria, is based on work by David Symon (taxonomy, in collaboration with European specialists), Kathy Evans (DNA fingerprinting), Molly Whalen and Julie Oliver (statistical analysis), and John Hosking and others (field knowledge). Robyn Barker has developed the tool, while Bill Barker has been involved in project coordination (with Kathy Evans of the CRC for Australian Weed Management) and the workshops.

Identifications with the *Blackberry* tool proved achievable, but clearly needed confirmation via quality voucher collections. Australia's Virtual Herbarium, largely unknown to the weed fraternity, was enthusiastically received as an important future resource. Many participants took a tour of their local Herbarium, which they had not previously experienced.

A National Blackberry Summit on the next 10

years of scientific endeavour in Blackberry was held in March in Canberra. Involving National and State Blackberry Coordinators and key scientists, it gave high priority to knowing the species being dealt with. Acceptance of the need for quality well-annotated herbarium voucher specimens deposited in State herbaria with identification confirmed by specialists in Adelaide was a welcome decision and reflected the difficult biology and taxonomy of the genus, the paucity of control data tied to correct identification, and the success of the Train the Trainers workshops.

Release of eight rust strains in Western Australia and New South Wales is imminent. Monitoring is to be undertaken before wider release.

Bill Barker

Orchid enthusiasts prosecuted in New Zealand

Two Czech orchid enthusiasts, one an inspector in the Czech Government environmental protection agency, and the other a professor of cardiology from a Czech university, were both convicted and fined \$7,500 in the Manukau District Court in New Zealand for smuggling native orchids and taking plants from conservation areas. They were also ordered to pay \$1000 each toward prosecution costs, and a further amount toward court costs.

During the three weeks they were in New Zealand the men illegally collected about 350 specimens of native plants from national parks and other conservation areas. They were charged under the Trade in Endangered Species Act, which prohibits trade in all New Zealand native orchids and can carry penalties of up to a \$100,000 fine and five years imprisonment, and



The Blackberry workshop at the Melbourne Herbarium. (Left to right) Kate Blood and Franz Mahr (Department of Primary Industries), Peter Steller (LaTrobe Council); Glen Mawson (Parks Victoria) John Reid and Val Stasjik (National Herbarium of Victoria).
Ph. Bill Barker

the National Parks Act, under which offenders can be fined up to \$2500 and imprisoned for three months.

Had the Department of Conservation been able to prove the plants were destined for sale and commercial gain, the judge said that she would have had no hesitation in sending the men to jail.

Information has been taken from the New Zealand Department of Conservation media release at www.doc.govt.nz/index.html. Daily newspapers in New Zealand and Czechoslovakia gave the case considerable coverage.

Bumble bees: a cause for concern?

The following news item was prompted by the posting to the Society of Australian Systematic Biologists site of an appeal by Dr Anne Dollin of the Australian Native Bee Research Centre and a recent visit by the Editors to Tasmania.

Horticulturists have initiated an application to have the European bumblebee, *Bombus terrestris*, added to Australia's list of species suitable for live import (Web Ref. 1).

As part of the process the applicant has to write a report assessing the potential impact of importing live bumblebees for commercial purposes. The draft Terms of Reference for this report is currently posted on the Department of Environment and Heritage webpage. The public have been invited to email comments to the address: wsm@deh.gov.au (closing date for comments was Friday 23rd April).

The New South Wales Government already lists the introduction of this bumblebee as a Key

Threatening Process (Web Ref. 2) and Victoria has listed it as a Potentially Threatening Process. Previous applications to import the bee have been made and rejected, but the bee was introduced illegally into Tasmania in 1992.

The Australian Native Bee Research Centre (a privately funded organisation based in the lower Blue Mountains and publisher of Aussie Bee Online) are asking concerned parties to send their comments on the issue to the Department of the Environment and Heritage. More information and suggested text can be found on their website (Web Ref. 3).

Counter arguments of the horticulturists can be seen in a copy of the very thorough, but unsuccessful, application to AQIS to import bumble bees of 1996 (Web Ref. 4).

An account of the work being done to determine the influence of this bee in Tasmania since 1992 and a map of its spread in that time is on the Tasmanian Museum & Art Gallery web site (Web Ref. 5). Botanical visitors to Tasmania may be interested in participating in the survey on bumble bees (location, numbers, plants visited, etc.) that is being conducted through this web site.

References

Web Ref. 1. www.deh.gov.au/biodiversity/trade-use/publicnotices/index.html

Web Ref. 2. www.nationalparks.nsw.gov.au/npws.nsf/Content/Bombus_terrestris_ktp_declaration

Web Ref. 3. www.zeta.org.au/~anbr/bumblebees-13apr04.html

Web Ref. 4. www.tmag.tas.gov.au/workshop/append2.html

Web Ref. 5. www.tmag.tas.gov.au/bumblebees/bee_survey.htm

Reviews

Ecology and vegetation of Western Australia - an account of 100 years ago

Review by Jürgen Kellermann

School of Botany, The University of Melbourne, VIC 3010

*L. Diels (2003) **The Plant Life of Western Australia south of the Tropics**. English translation by B.J. Grieve, B.B. Lamont & E.O. Hellmuth of the original 1906 German edition. Edited by Neil Gibson. CD-ROM v 1.02. Woodvale: Published by the editor. Price: approx. A\$ 5.00 (for copying & postage).*

The CD-ROM is available from the editor, Dr. Neil Gibson, CALM Wildlife Research Centre, email: neilg@calm.wa.gov.au, ph: (08) 9405 5100, fax: (08) 9306 1641

The German botanists Ludwig Diels and Ernst Pritzel, travelled in south-western Western

Australia from October 1900 to December 1901. They ventured to Australia not only to collect plants, but their main interest was to examine the ecology and vegetation of the state. Their expedition was very well planned, so that Diels and Pritzel were able to visit many places several times to document the plant life during different times of the year. They travelled as far north as Carnarvon; their inland-trips led them as far as Cue, Menzies and Kalgoorlie. The yield of their industrious collecting activities in Western Australia was a herbarium of over 5700 numbers (Diels 4700, Pritzel 1016).

The taxonomic results of the expedition were published jointly in *Fragmenta phytographiae Australiae occidentalis* (Diels & Pritzel 1904-1905), in which they described their collections, among them 235 new species. Diels published the ecological results a year later in his *Die Pflanzenwelt von West-Australien südlich des Wendekreises* (Diels 1906). The book "was a landmark work in every way, publishing new information on the flora, descriptions of the vegetation that were entirely new and a small coloured vegetation map of Australia" (Beard 2001b). Indeed, this map was the first vegetation map to be published of the continent; combined with the Introduction of the book, they form one of the first accounts of the vegetation of Australia as a whole.

The remaining chapters of the book deal with Western Australia. Starting with an account of the botanical exploration of extra-tropical Western Australia, the book proceeds to an outline of the physical geography and climate of the region. This is followed by two detailed chapters describing the vegetation of the South-West and Eremaean Provinces. The final chapter "established Diels' famous biogeographical classification of Western Australia into two Botanical Provinces, subdivided into Botanical Districts" (Beard 2001a). This is the starting point for all further vegetation studies in the state.

The publication of this classic work in English translation 97 years after its first release in Germany is quite remarkable. To quote from the Editor's Note, this "involved a number of people who recognized the need to provide an accessible version of the first major work on the ecology, vegetation and biogeography of Western Australian plants to an Australian audience" (p. 5). In fact, a translation was started between 1914 and 1920 by W. Dakin, then Head of the Department of Botany at the University of Western Australia. Over the years only small additions were made to this uncompleted draft,

until B.J. Grieve resumed the translation, after his appointment as Head of Department. He finished the manuscript in 1950.

Typescripts of this translation were used at the Botany Department for many years; copies of Dakin's translation (Diels 1920-1927) can also be found at some Australian herbaria (e.g. PERTH, CANB). However, this English edition of Diels' book remained inaccessible to most people. A previous attempt to publish it failed because it was not possible to contact the original publisher, or its successor in West Germany. In 1981 B.B. Lamont was able to track down the copyright holder of the book, and he obtained permission to translate the book. He had begun to translate the work independently from Grieve, and once Lamont heard of the existence of the Botany Department's manuscript, he agreed to collaborate with Grieve, and later with E.O. Hellmuth, to edit the translation. Now, over twenty years later, we can finally read the completed work.

The translation comes as a 100 Mb PDF document on CD-ROM. The main part contains the text including scans of all black and white photographic plates and woodcuts in the text. The vegetation map is reproduced in colour.

This is followed by an appendix containing all current names (as of 2002) for the plant species mentioned in the original text (although the nomenclature for some eastern taxa may not be fully up-to-date; p. 337). Many names have changed during the last century and this list is essential for the proper understanding of the text. Anyone who is fortunate enough to have a copy of the original book should print out this list and insert it in their copy. The translations of the captions of the plates and figures follow in two appendices (it would have been preferable if these translated captions were placed directly beneath the figures and not in the appendix). Finally there is also a series of photographs compiled by Lamont & Grieve in 1984. They "tried to relocate and re-photograph" (p. 368) the sites of the plates from Diels' book, twelve of which are presented here, paired with the original picture. It is interesting to see the change in the vegetation after 82 years.

The layout and presentation of the book is very good. It is ready to print, so if you prefer a hardcopy you can print out the 381 pages of the document. However one advantage of reading it at the computer is the possibility to search for words or species names in the full text.

The actual translation is accurate and reads well. It is not a word-for-word conversion of the

German text, but sometimes quite independently re-written. Fortunately, seemingly endless German sentences are often translated as two or three English clauses. This is an improvement to the translation of Dakin (Diels 1920-1927), which clings too much to the original text. At times, however, Grieve, Lamont & Hellmuth seem to have left out - intentionally or un-intentionally - one or two sentences from the original (e.g. the first two sentences of the third paragraph on page 1 of the 1906 edition). This does not necessarily change the sense or meaning of a paragraph, but it omits some additional information or comments. In a few places it also seems as if the translators tried to soften Diels' opinion or critique, e.g. when he describes Spencer Moore's work on the flora of Western Australia as original but "not very deep" (p. 62 of the original). This comment does not appear in the translation at all (p. 56).

No translation can reproduce the original. It is a delight to read Diels' text in original, with his at times even poetical language. However, in case your German is getting a bit rusty, this CD-ROM is an alternative for you to read one of the most important contributions to Australian botany and ecology. I strongly recommend to buy it, your \$5 will be well invested. Of course the text from 1906 is outdated in some respects, but if you keep this in mind you will find the book very

interesting. John Beard's comments (Beard 2001b) help with the interpretation of the vegetation map, and his more recent studies on the biogeography and vegetation of Western Australia (Beard 1980; Beard 1990) are essential to fully appreciate Diels' work and to understand the advancement of the field since 1906.

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Translation of lecture by Carl Wilhelmi on early South Australia

Robyn Barker

State Herbarium of South Australia

The availability of an English translation of Diels's 1906 work on Western Australian vegetation (see p. 26) reminds me of a recent translation of an early German description of South Australian vegetation.

The lecture given to the Melbourne German Club by Carl Wilhelmi on 14th September 1857 "My Journeys in South Australia 1848-1851" has been translated by Thomas A. Darragh, Curator emeritus of Museum Victoria (Darragh 2003). Wilhelmi's lecture was later published in the local German newspaper *Der Kosmopolit*, over three issues (18th Sep 1857, p. 343; 22nd Sep, p. 347; 25th Sep, p. 351).

The account covers three journeys, one made to the Macclesfield area in March 1849, a week after his arrival in South Australia, a second in October 1849 to the Wellington region on the Murray and a third in the summer months of 1850/1 to Tanunda and Moorunde from whence he moved downstream along the Murray The

return on this third journey was again through Wellington, but visits were also made to Goolwa and Hindmarsh Island. *Acacia wilhelmiana* F. Muell. was collected during this third journey.

Darragh provides a brief background to Wilhelmi but defers to Kraehenbuehl's (1990) treatment of his life.

The translation can be found in the *Journal of the Friends of the Lutheran Archives*, copies of which can be obtained from the Friends of the Lutheran Archives Inc., 27 Fourth Street, Bowden, S.A. 5007 for \$11 per issue.

References

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- Kraehenbuehl, D.N. (1990). In P.S.Short (ed.) *History of Systematic Botany in Australasia* (Australian Systematic Botany Society). Pp.115-119.

A field guide to the outback South Australian plants

Review by Robyn Barker

State Herbarium of South Australia

Field Guide to the Plants of Outback South Australia. Frank Kutsche and Brendan Lay. (South Australian Govt). ISBN 0 7590 1052 8
Purchase at \$39.50 incl. GST from <http://shop.service.sa.gov.au> or phone 1800 678 447 (toll free).

An order form has been included within this issue of the Newsletter.

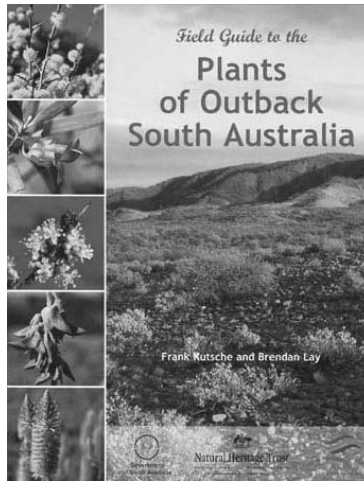
Travelling in the outback? Then you might find this little volume useful for general identification purposes. It's not as big as "Cunningham" (Cunningham et al. 1981) and doesn't cover anything like the number of species but it will fit easily into a backpack or in the glove box and will satisfy many basic questions. The cover is protected by lamination and all of the pages have a glossy finish. So a nice feel, good size and lots of colour.

The 437 plants covered in the book are divided into five categories – trees, shrubs, forbs, grasses, climbers and miscellaneous, this last category covering ferns, *Xanthorrhoea*, lilies and sedges). The categories are indicated by a different colour coding at the top of the page and there is a key to the categories at the beginning of the book. I did find some species I would have thought of as shrubs in the forb category and it is unclear why the lilies were treated as *Miscellaneous* rather than as forbs. Within each category genera are arranged alphabetically, mostly with a treatment of common individual species, followed by a general treatment of other species in the genus. Native and introduced plants are intermixed, with introduced plants clearly identified as such.

Each page is similarly arranged, with individual species having distribution indicated on a map of South Australia, a list of common and aboriginal names, a brief description, a statement of ecological preference which is also reflected in the land type icon at the top of the page, comments on the plant which range from its pastoral value, aboriginal use and general information of interest. Each species is depicted

in either a photograph or a series of photographs showing habit, habitat and close-ups of salient points. Below the photographs the bottom part of the page is colour-coded and includes information on the height of the plant, its flowering time and a statement of how common it is.

References are limited. The glossary is short, often with relevant areas highlighted on photographs to indicate a particular terminology. Leaf characteristics are illustrated within the inside back cover and a ruler is included as part of the inside front cover.



There are some minor mistakes in the book. David Symon points out that the photo (p. 260) of sprawling *Boerhavia* is a *Cullen* and of *Citrullus colocynthis* (left of p. 261) is *C. lanatus*.

Some of the names are a little out of date in *Lavatera* and *Euphorbia*, and *Bracteantha bracteata* is used instead of *Xerochrysum bracteatum*. *Heliotropium europaeum* is treated as introduced even though the latest evidence would suggest otherwise; and in the reverse case *Datura* is treated as a native rather than introduced. The reference to *Senna ft. gawlerensis*, with no explanation of "ft" (form taxon) is not really helpful to the user. Finally, some of the photographs could have been a little more informative.

A great deal of thought has gone into this publication and as much has been squeezed in as is possible. It is not aimed at scientists but those who live in the area or who are visiting the area. It is the sort of book I would pick up if I was visiting an unfamiliar area interstate and find great value from. It is very reasonably priced.

Reference

Cunningham, G.M., Mulham, W.E., Milthorpe, P.L., & Leigh J.H. (1981). *Plants of western New South Wales*. NSW Government Printing Office, Sydney. Revised edition (1992). Inkata Press.

Plant collecting in the nineteenth and early twentieth century

Review by Neville Marchant

Western Australian Herbarium

In Pursuit of Plants: Experiences of nineteenth and early twentieth century plant collectors, by Philip Short. University of Western Australia Press. ISBN 1 876268 98 0
352 pages + endpapers. \$54.95 (incl. GST).

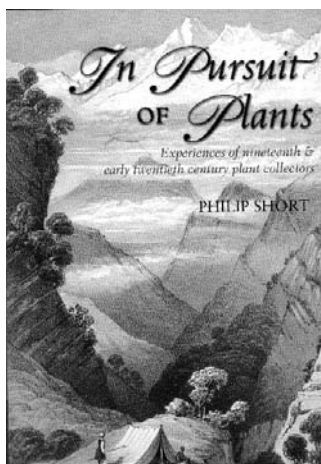
Philip Short is well known to Australian botanists and especially to members of ASBS. Apart from his taxonomic research, principally in the Asteraceae, Philip is a devotee of natural history writing and botanical history and edited and contributed to the valuable resource book, *History of Systematic Botany in Australasia*, published in 1990. This latter publication is an extremely useful tool for taxonomists trying to determine the provenance of early plant collections and some of the difficult-ties collectors endured are briefly mentioned by various authors. *In Pursuit of Plants* is written for a general audience and is not a taxonomic tool. It describes the unique experiences of a wide range of famous and more obscure plant collectors using extracts from letters, most of which were sent to Kew. The result is a fascinating look at exotic locations, the discovery of incredible plants and the difficulties that confronted some of 19th and early 20th century plant collectors.

At first glance, the reader may think that the book deals with such a small sample of collectors from a wide geographic range that it will have limited interest. This is not the case; *In Pursuit of Plants* is an enjoyable collection of accounts of plant collectors and is aimed at a natural history audience. To the experienced botanist it can give a new insight to many familiar plants and characters as well as introduce new ones.

The principal aim of *In Pursuit of Plants* is to portray the observations, difficulties and adventures of plant collectors. Observations include social and ethnic issues, transport, politics, vegetation, weeds and a host of other natural history and geographic topics. The aim is accomplished by presenting transcriptions of parts of accounts of 36 botanist collectors from Africa, Asia, Australia and New Zealand, Europe, the Americas and Kerguelen and Fiji islands. A paragraph by the Scottish collector,

George Forrest, when collecting in China in 1905, sums up the difficulties confronting the plant collector.

Few realise the great hardships and dangers which have to be faced in order to secure new plants for cultivation in Europe. In the warmer regions there is danger from miasma, fever, animals and snakes. Not infrequently too, the collector has to seek his specimens among savage or semi-civilised peoples, who, in most instances, strongly resent his intrusion into their midst; thus seldom a year passes without toll being exacted in one way or another. Philip notes that Forrest lived for another 27 years, made seven trips to China and he collected 260 previously unknown species of *Rhododendron*.



Philip has chosen interesting accounts, most of which have not been previously published in their original wording. There is no bias in his choosing of collectors, nor has he chosen only well known characters, as many lesser-known botanists are included. There are more collectors dealt with under Australia and New Zealand which is not surprising as these places were a 19th century focus of botanical exploration. The collectors of Australia and New Zealand dealt with are: R.W. Lawrence, J. Drummond (his brother Thomas is dealt with in detail in the North America section), W. Colenso, F.W.L. Leichhardt, F.J.H. Mueller,

W.E.P. Giles, D. Sullivan, W.B. Spencer, F.J. Gillen, M. Koch and W.A. Michell. The James Drummond extracts cover references to poison plants, the discovery of *Hakea victoria* and *Verticordia grandis*, seed collecting and luminescent fungi. Although these latter subjects have been dealt with in other excellent publications, the accounts selected by Philip are short, well chosen, unembellished extracts. The Mueller entry is also a brief one, dealing with the daily routine of life in the field during a Gulf of Carpentaria section of the A.C. Gregory expedition.

The layout of the book is excellent. Each extract has a clear subject heading and there are very concise notes by Philip introducing the person or activity or botanical significance of the collections. Other notes throughout the text are well researched and skilfully concise, just giving enough information to complement the extract. There are fascinating accounts of "vile foreign

weeds" in North Carolina in 1841 (Asa Gray), the discovery by Europeans of *Welwitschia mirabilis* and *Rafflesia arnoldii* (Philip notes that the genus *Rafflesia* was first collected in Asia some 20 years before J. Arnold and Sir Stamford Raffles found *R. arnoldii*). There is also an account of *Nepenthes* of Mount Kinabalu, a detailed description of *Victoria amazonica*, the Durian with the odour of "a putrid sewer" and a host of other well-known and not so familiar plants. There is an interesting account of the thwarted murder attempt on Richard Spruce in South America and for various collectors there are anecdotes of bad servants, a tiger attack, snakes, vampires, scorpions, cockroaches and other pests. Extracts from the Indian journeys of J. D. Hooker describe in detail the loathsome ticks "as large as the little finger nail".

In Pursuit of Plants finishes with a brief, very clearly written, layman's guide to binomials, another brief chapter on the history and function of herbaria with a short guide to plant collecting

methods. The final chapter deals with the Wardian Case that "revolutionised the transport of plants between far-flung countries" and was used by Kew up to the start of World War 2.

Finally, the book itself is a superb hard-back publication, very clearly laid out, with easily read font. There are numerous illustrations of collectors, plants and vegetation. The references and notes on each chapter are detailed and give a useful guide to those wishing to pursue more knowledge of the plants and collectors. There is an index, but my only criticism of the book is that it is not a comprehensive one and seems a little inconsistent in selection of geographic and plant names entries. This is a minor criticism; the book is not meant to be a botanical reference book, but a thoroughly enjoyable collection of fascinating stories of plant collectors seeking plants for their own or for others enjoyment. *In Pursuit of Plants* is an ideal gift; especially if you want to convince anyone that collecting plants and taxonomy are fascinating pursuits.

A phytochemical database

Review by Susan Semple

School of Pharmacy and Medical Sciences, University of South Australia

¹⁰*PhytoChem Australia: A Database on Australian Plant Chemistry 1940-2000*. D.J. Collins and C.C.J. Culvenor. CD-ROM. CSIRO Publishing 2003. ISBN 0 643 06632 2.

\$295.00 plus \$9.00 postage and handling from CSIRO Publishing, PO Box 1139, Collingwood, Vic., 3066.

Introduction

The PhytoChem Australia database CD-ROM has been developed to provide a revised and updated version of the Plant Bibliography and Index contained in the book *Plants for Medicines: A Chemical and Pharmacological Survey of Plants*

in the Australian Region (Collins et al., 1990). As well as providing an updated bibliography (to the year 2000) the new interactive format allows the user to rapidly search the over 2,700 references contained in the database.

Installation and system requirements

The CD-ROM provides three formats including Windows (98, 2000 or XP), Mac Classic (8.6 to 9.2.2) and Mac X 10.1 with at least 68 MB of space required on the hard disk for installation of the program. Installation onto my PC, running under Windows 2000, was quick and simple. Instructions for installation are clearly set out inside the front cover of the CD holder.

Using the database

The database has a simple layout and is quite easy to navigate. References in the database can be searched by plant type (higher plants, fungi, algae, bacteria and lichens are included) plant name, compound type, or name, author, title, publication name and year. Plant name can be searched at the family, genus or species level with "drop-down lists" displayed for the species name once the genus name has been entered.

The results of the search are given as a list of references (author, title, publication name, year, volume and pages), which can be sorted by publication name or year. By highlighting a selected reference, the user can chose the

¹⁰ Sue is a Research Associate with the School of Pharmacy and Medical Sciences at the University of South Australia. Her research interests and expertise are in the areas of antimicrobial testing of plants used as traditional medicines and complementary/traditional medicine use in the Australian community. Her original degree was a Bachelor of Pharmacy. In 2000 she completed a Ph.D. in Health Sciences which examined the antiviral activity of some plants used as medicines by Australian Aboriginal people. As part of this research compounds with antiviral activity were isolated and identified from the medicinal plants *Pterocaulon sphacelatum* and *Dianella longifolia*. She is currently involved in a collaborative research project with Aboriginal communities called "Plants for People" which is a project funded under the new Desert Knowledge Collaborative Research Centre. This project investigates the antiviral and antibacterial activities of plants used as medicines. *Eds.*

“bibliography card” for the record. The bibliography card provides details of the family, genus and species name for each plant included in the reference and the compound types and names (if specified). The chemical structures of compounds are not provided. Reference lists can be easily printed.

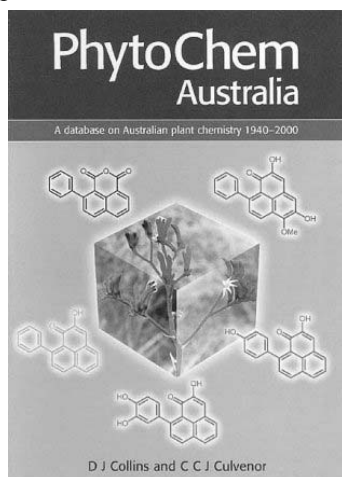
For species that have had name changes, there is some cross-indexing in the database to allow retrieval of references when either the current or old names are searched. However, not all references for a particular species are cross-indexed. For example, a search of the primary database for *Chamaesyce australis* retrieved one reference, while a search for *Euphorbia australis* retrieved two references.

Other features

In addition to the searchable database, the CD-ROM provides a series of printable downloadable files (PDFs) such as an index of plant genera with the corresponding family and indexes of compounds and compound-types. Perhaps the most useful are the indexes of higher plants, lichens and fungi. These allow the user to cross-check old and current names, and indicate where different subspecies may be recognised for what was originally regarded as one species. A further PDF file is a “Bibliographic Postscript” which includes a list of 30 references inadvertently omitted from the searchable database.

Coverage of the literature

The database appears to provide a thorough literature coverage including some books and Australian periodicals not covered by standard searchable databases such as Chemical Abstracts, Natural Products Alert (NAPRALERT) and MEDLINE. My main criticism is that some relevant references that can be retrieved using Chemical Abstracts or MEDLINE appear to be missing from this database. In addition to the 30 references listed in the “Bibliographic Postscript” a small number of other relevant references that I know of do not appear. Despite this criticism, I think this CD-ROM will be a useful addition to the standard searchable databases for those with an interest in the chemistry, pharmacological activity or toxicology of Australian plants.



To remain a useful resource, hopefully this product can be developed into a ‘living database’, with continual update and perhaps an annual subscription for access. Further development of the database to include biological activities of compounds isolated from Australian plants would also make a most useful addition.

Reference

Collins, D.J., Culvenor, C.C.J., Lamberton, J.A., Loder, J.W. & Price, J.R. (1990) *Plants for Medicines: A Chemical and Pharmacological Survey of Plants in the Australian Region*, CSIRO Publishing.

Hobart: 200 years of European settlement

Review by Robyn Barker

State Herbarium of South Australia

John Bowen's Hobart: the beginning of European settlement in Tasmania, by Philip Tardif. Published in 2003 by Tasmanian Historical Research Association Inc., PO Box 441, Sandy Bay, Tasmania 7006 with assistance of Government of Tasmania through its Tasmanian Bicentenary Grants Program.

Soft cover, 244 pp, 12 maps, 10 illustrations.
Sales: through the THRA website (Web Ref. 1).
Private copy for \$28.00 purchased from the University of Tasmania bookshop.

Two hundred years ago, in February 2004, the recently established small European settlement at Risdon Cove on the Derwent River in southern

Tasmania, saw the arrival of the ships *Lady Nelson* and *Ocean* with a party of settlers under Lieutenant-Governor David Collins.

Amongst the people aboard the *Lady Nelson* was Robert Brown, accompanied by his servant John Porter. The *Lady Nelson* had originally been heading for the Port Phillip settlement in Victoria, but was diverted on the way to carry out an assessment of the Port Dalrymple area in northern Tasmania as a suitable remove for the Port Phillip settlers. The *Lady Nelson* was based at Port Dalrymple from the 1st to the 18th January 1804 after which it headed to Port Phillip. By the time the boat arrived at Port Phillip it appears that Lieutenant-Governor Collins, given the choice

between relocating to Port Dalrymple or to the Derwent, had already chosen the latter.

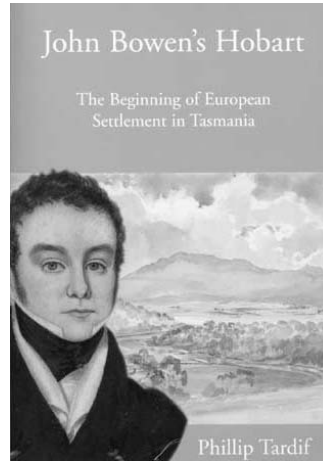
The Risdon area was very quickly deemed unsuitable for continued development and a new town was begun at Sullivan Cove, now Hobart. The first supplies and landing proper took place on 20th February 1804. The Risdon settlement was more or less abandoned by August 1804, most of the people based there returning to Sydney in the same ship as Robert Brown.

The papers which still exist and which document Robert Brown's 6 month sojourn at the Derwent River have been rigorously treated by Moore (2000) and by Vallance et al (2001). Moore's comprehensive account of Brown's collecting localities in Tasmania as a whole is now available on the web and there are other first-hand sources of those who accompanied Brown on his journeys, as for example Vallance's (1981) reproduction of some of the letters of the government mineralogist, A.W.H. Humphrey and Nicholls' (1977) reproduction of the diary of the Reverend Robert Knopwood. The latter two were used extensively by Vallance et al. in analysing Brown's daily activities while in Tasmania.

All of this is a very long-winded way of bringing to your attention a recent scholarly treatment of the founding of the first European settlements on the Derwent by Phillip Tardif. Tardif is an historian with research interest in colonial Tasmania and he has trolled some of these same sources plus many others to give us a very comprehensive background to the founding of the earlier settlement at Risdon in 1803, to the politics of the time, the difficulties faced, relationships with the aborigines (including mention of the May 3rd 1804 massacre at Risdon) and the difficulties of dealing with the New South

Wales Corps. Particular attention is paid to the work of the convict surveyor James Meehan.

Tardif's book can be recommended to the casual visitor to Hobart who is interested in the early history of the city, but it is so much more interesting to botanists seeking to place Robert Brown's collecting activities in a geographical, social and cultural perspective. Much of the time covered is the very time that Robert Brown resided there, and resided, more particularly, at the troubled Risdon settlement, rather than Sullivan Cove. Brown is mentioned a number of times in the book. Even knowing that Robert Brown never meant for his diary to be published and it was more an aid to memory of where he was and what he might have been collecting on a particular day, one can only regret that he lacked diary skills and an observant eye of his social surroundings. How valuable his first hand accounts of social conditions and politics in the colonies might have been.



References

- Moore, D.T. (2000). Some aspects of the work of the botanist Robert Brown (1773-1858) in Tasmania in 1804. *Tasforests* 12: 123-146. (Obtain a pdf version of this paper at www.forestrytas.com.au/forestrytas/pages/tasforestsonline.html)
- Nicholls, M. (ed.) (1977). *The diary of the Reverend Robert Knopwood, 1803-1838: first chaplain of Van Diemens Land*. (Tasmanian Historical Research Association, Hobart).
- Vallance, T.G. (1981). The start of government science in Australia: A.W.H.Humphrey, His Majesty's mineralogist in New South Wales. *Proc. Linn. Soc. N.S.Wales* 105: 107-146
- Vallance, T.G. Moore, D.T. & E.W.Groves (eds.). (2001). *Nature's Investigator: The Diary of Robert Brown in Australia, 1801-1805*. (Australian Biological Resources Study, Canberra)
- Web Ref. 1. www.tased.edu.au/tasonline/thra.

FASTS

Bradley Smith appointed new Executive Director FASTS

Bradley Smith has been appointed to the position of Executive Director of FASTS and started work on 2 February 2004.

Bradley has extensive experience in the workings of the Australian Parliament and will contribute significantly to FASTS ability to develop and

influence science and innovation policy. He was formally a policy advisor on the staff of the leader of the Australian Democrats, where his main portfolio responsibilities were higher education, science and biotechnology, R&D and innovation. Before that he was President of the Council of Australian Postgraduate Associations (CAPA)

Coming meetings

National Science Week 2004

National Science Week will be held from 14th – 22nd August, 2004. Unfortunately it is too late to apply for funding help for this year but if you have an idea for next year perhaps you can bear it in mind that applications for funding close in January of the particular year. The announcement of the availability of funding (4 December 2003) is too close to the actual closing date (23rd January 2004) to be able to alert members through our quarterly newsletter. For future reference and to see the type of grants supported and the amount of support available see the National Science Week website at www.scienceweek.info.au/

Victorian Field Naturalists' Cryptogamic Extravaganza II May 28th – 31st 2004

Participants will be staying in the Grampians at Norval Lodge in Halls Gap, which has bunk-style accommodation with en-suites to each room of 6 people, a large dining-room, with meals provided, and an activities room. There will be guided walks and afternoon activities led by Tom May, Teresa Lebel, Ian Pascoe, Pina Milne, David Meagher, Sharon Morley and others.

Registration forms for *Cryptogamic Extravaganza II*, available on www.vicnet.net.au/~fncv (click on Botany Group), should be sent with deposit to:

Cryptogamic Extravaganza
c/- The Field Naturalists Club of Victoria
Locked Bag 3 PO
Blackburn, Vic. 3130

Drummond Symposium 27th-28th August 2004

To celebrate the work of James Drummond, first government botanist in Western Australia, the Toodyay Naturalists Club is holding a symposium in the Memorial Hall, Toodyay on Friday August 27th. There will be a dinner that evening and an excursion on the Saturday.

Further information can be obtained from:

Carole Elliott
WA Herbarium
Locked Bag 104
Bentley Delivery Centre, WA 6983

Obtain the draft programme and contacts from www.worldwidewattle.com/news/drummond2004.php

Workshop on Native Seed Biology

The Fifth Australian Workshop on Native Seed Biology, organised by the Australian Centre for Mining Environmental Research (ACMER), will be held in Brisbane, at Royal on the Park, on Monday 21 June and Tuesday 22 June 2004. The workshop will be preceded by a one-day workshop (restricted attendance: see below) on Sunday 20 June 2004 on provenance issues and possibly half or one-day training courses. A field visit may be offered at the end of the workshop depending on interest.

Major themes include:

- Seed Ecology (issues such as pollination ecology, seed dispersal by fauna and macrofauna etc.)
- Seed Production and Quality
- Seed Storage
- Dormancy and Germination Issues
- Establishment and Management
- Seed Biology Issues in Native Floriculture
- Progress in Developing National and International Initiatives on Seed Biology

Provenance Workshop

A National Forum run by Greening Australia is to be held in conjunction with the ACMER workshop. Attendance is restricted ten Greening Australia representatives and an "open call" for ten workshop participants

Priority issues to be dealt with related to provenance of seed used in revegetation are:

- When is it appropriate to specify local provenance for revegetation work?
- When should 'exotic' provenances be introduced to increase genetic diversity?
- Can 'local' provenances be used in commercial revegetation and with what economic compromises?
- How do we certify seed as 'local', 'exotic' or 'improved'?
- Where and under what circumstances is genetic pollution of remnant vegetation likely to occur?
- How does consideration of provenance vary between and within genera?

For further information see www.acmer.com.au

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

ASBS Newsletter Number 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*.

Ecology of the Southern Conifers

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.

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.

Send orders and remittances (payable to "ASBS Inc.") to:

Katy Mallett
ASBS Sales
ABRS
GPO Box 787
CANBERRA, ACT 2601, Australia

Evolution of the Flora and Fauna of Arid Australia

Edited by W.R. Barker & P.J.M. Greenslade. ASBS & A.N.Z.A.A.S., 1982. \$20 + \$5 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.

Special arrangement. To obtain this discounted price, post a photocopy of this page with remittance to: Peacock Publications, 38 Sydenham Road, Norwood, SA 5069, Australia.

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

AD tel: (08) 8222 9307 fax: (08) 8222 9353 www.flora.sa.gov.au	HO tel: (03) 6226 2635 fax: (03) 6226 7865 www.tmag.tas.gov.au/Herbarium/ Herbarium2.htm	MEL tel: (03) 9252 2300 fax: (03) 9252 2350 www.rbg.vic.gov.au/ biodiversity/	NSW tel: (02) 9231 8111 fax: (02) 9251 7231 www.rbg Syd.gov.au/conservation _research/herbarium_ & services
CANB tel: (02) 6246 5108 fax: (02) 6246 5249 www.anbg.gov.au/	BRI tel: (07) 3896 9321 fax: (07) 3896 9624 www.epa.qld.gov.au/nature_ conservation/plants/ queensland_herbarium	DNA tel: (08) 8999 4516 fax: (08) 8999 4527 www.nt.gov.au/pwcnt	PERTH tel: (08) 9334 0500 fax: (08) 9334 0515 http://science.calm.wa.gov.au/ herbarium/
QRS tel: (07) 4091 8800 fax: (07) 4091 8888	MBA tel: (07) 4092 8445 fax: (07) 4092 3593	NT tel: (08) 8951 8791 fax: (08) 8951 8790	
Council of Heads of Australian Herbaria (CHAH) Chair: Dr Greg Leach (DNA) www.chah.gov.au/	ABRS tel: (02) 6250 9554 fax: (02) 6250 9555 email: abrs@deh.gov.au www.deh.gov.au/biodiversity/ abrs	Australian Botanical Liaison Officer (ABLO) Annette Wilson Herbarium Royal Botanic Gardens, tel: 44-20-8332 5270 Kew fax: 44-20-8332 5278 Richmond, Surrey email: TW9 3AB England 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 \$40(Aust.); full-time students \$20. 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, ABRIS) 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.

Authors alone are responsible for the views expressed, and statements made by the authors do not necessarily represent the views of the *Australian Systematic Botany Society Inc.* Newsletter items should not be reproduced without the permission of the author of the material.

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.

Fliers 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). Fliers 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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