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Newsletter

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Loose-leaf inclusions with this issue

- Payment of ASBS membership fees (Membership Renewal) form
- Application for Membership of ASBS form
- Nominations for ASBS Council 2005/06

Publication dates of previous issue

Austral.Syst.Bot.Soc.Nsltr 120 (September 2004 issue)

Hardcopy: 19th Oct 2004; ASBS Web site: 18th Oct 2004

ASBS Inc. business

Hansjörg Eichler Research Fund

Grants for 2004

Council is pleased to announce the following two students were successful in their application for support from the Hansjörg Eichler Research Fund in 2004.

David Maynard (BSc Hons., University of New South Wales / Royal Botanic Gardens, Sydney). A molecular phylogeny for the genus *Elaeocarpus* (Elaeocarpaceae) in Australia and the systematics of a putative new taxon.

Jillian Walsh (PhD, University of Sydney) The ecology and taxonomy of *Fusarium* species associated with Australian grasses.

Each applicant received the maximum grant of \$1,000 each. Members of the Research

Committee and Council wish both students every success with their studies and look forward to seeing their reports in the Newsletter in due course.

Closing date for first round of applications for 2005

Students and supervisors are reminded that from 2005 applications for grants from the Hansjörg Eichler Research Fund will be assessed twice each year. The first round for 2005 closes on March 14. Information on the grants and the application form are available from the Society's web page at www.anbg.gov.au/asbs/asbs.html or from the Secretary, Brendan Lepschi (see inside cover for contact details).

John Clarkson
Chairman of the Research Committee

Planning *Families of Australian Plants – new perspectives* Canberra 27th July 2004

The workshop was convened to explore and develop concepts and plans for a conference and book on new perspectives on families of Australian plants. It was attended by ASBS Council and some 20 members.

The following is a summary of key outcomes of the workshop, most (but not all) arrived at by consensus. These ideas will be taken up by the respective organizing committees. Further input from members remains welcome.

Conference and book/CD title: *Families of Australian Plants – New Perspectives*

Geographical coverage: Australasian, focus on Australia

Organisms: native and naturalised green plants and fungi, focus on seed plants

Theme: new perspectives – forward looking – what has changed? How does the new systematics inform understanding of plant biology and use?

1. Conference (Perth, September 2005)

Timing: to coincide with an international conference on flora conservation being organised jointly by the Department of Conservation and Land Management and the Botanic Gardens and Parks Authority. Also, spring in the southwest!

Duration: three days

Program

Keynote topics to include: review of APGII classification, Burbidge lecture, comparative biology in relation to systematics and radiation of the Australasian flora.

Key groups for review include: legumes (*sens. lat.*), restioids, Myrtaceae, Asteraceae, grasses, Proteaceae, orchids, ferns, bryophytes, algae, fungi lilies *sens. lat.*, rainforest lineages, conifers, cycads, fern allies, endemic orders and families, weeds

Call for conveners of half day organised sessions is to be made.

Local Organising Committee: Steve Hopper, Russell Barrett, others to be invited

National Advisory Committee: ASBS Council plus Mike Crisp

2. Products for ASBS to publish

Council aims are to raise some money for ASBS but equally to get good quality relevant systematic knowledge better disseminated.

Perth conference proceedings

Should be a separate product from a book/ CD – special issue of *Austral. Syst. Bot.*? Organising Committee to pursue.

Handbook and CD

Families of Australian Plants – new perspectives – interesting biology, key references, keys down to genera for seed plants.

Working short title: *Australian Plants* (may treat families in some groups, orders or subfamilies in others)

Content: primarily an illustrated account of the biology and uses of Australasian seed plant families, with smaller sections within each family treatment devoted to systematics, habitats, map, and possibly keys to genera; bryophytes, algae and fungi to be handled as introductory essays only.

Key issues: ASBS capacity to deliver on both? Key partners? Able to be updated? Need to avoid duplication of electronic products on families already available.

Timeline: 3 years minimum, possibly staged, with taxonomy and keys first.

Target audience: interested public, ecotourists, tertiary students, botanists, landcare groups, SGAP, scientists, high school students, libraries

Editorial Committee: Steve Hopper and Russell Barrett offered to serve as primary editors, with advice/help from ASBS Council members plus Mike Crisp

Sources of copy:

Text for family systematic treatments – invite authors to use ABRs as a start; APG II. Keys, uses, habitat, maps – Morley & Toelken (1983) with approval. Images – line drawings from Morley & Toelken, CHAH member institutions. Photos – Australian Plants II

Which treatment? APGII as the baseline

Main partners: ABRs, CHAH, ASBS, AD

Potential publishers: CSIRO, Rigby, Uni Presses, Blackwells, Kangaroo Press, New Holland – marketing and distribution important.

Risks

- Constraints on ASBS as a volunteer organisation with limited funds
- Scope of project too big?
- Contributors failing to deliver
- Alternative taxonomies – explicit, liaise with CHAH
- Financial risks – seek \$\$ partners – no copyright fees to be paid – make this clear at the start – find an underwriter– ASBS cannot pay for fully
- Time blowout
- Editorial burnout
- Need for business plan – aim for retail <\$100/unit, print run of 2000

Next steps

- Steve Hopper to draft outcomes of the workshop, Council to vet, corrected ms to Newsletter Editors for publishing.
- Perth 2005 Conference Organising Committee to be convened. Action: Steve Hopper
- Editorial Committee of *Families of Australian Plants – new perspectives* to develop a business plan and seek funding partners prior to getting Council's approval to proceed.

Members interested in convening a half day session at the Perth Conference or with other ideas relevant to the above are invited to contact the undersigned:

Steve Hopper
Workshop facilitator/convenor
Email: steve.hopper@uwa.edu.au

ASBS Sales Officer

With Katy Mallett's leaving ABRs, Helen Thompson of the same organisation has agreed to take over her role as ASBS Sales Officer. This is very helpful in that book stocks remain at ABRs. Details have been changed inside the back cover of this issue.

Katy performed a sterling effort with no fanfare.

Her quiet achievements were reflected in her being forgotten in acknowledgment in many Council annual meetings, including those in which the present Editors participated.

Thanks from us all, Katy, and thanks to Helen for willingly stepping into her shoes.

The Editors

Annual membership fees and Council nominations

It is the time of year to pay your annual fees. The amount you owe is on the envelope with this issue of the Newsletter. A payment pro forma is enclosed.

You are encouraged to consider nominations to Council. A pro forma is also enclosed.

Articles

50th birthday celebration of the Northern Territory Herbarium

Philip Short

On the 28th of October, celebrations hosted by Dr Chris Burns, the Minister for Parks & Wildlife, were held at Parliament House to mark the 50th anniversary of the establishment of a permanent herbarium in the Northern Territory. On hand to celebrate were not just current employees but many early staff, including George Chippendale, the first person to be appointed to an essentially taxonomic (and ecological) position dedicated to the establishment of a herbarium in the Territory. We were also pleased that two other early staff members, Des Nelson and Rob Swinbourne, could join us on the night.

Proceedings, introduced by Greg Leach, commenced with the Minister's speech. He touched on various topics, including the fact that

although early herbaria had been started in the Northern Territory none survived World War II and that things stayed this way until July 1954 when George was appointed to the Animal Industry Branch of the Northern Territory Administration. George's appointment came about as a result of the growing realization of a need to know more about the plants of the Territory, in particular about the edible and poisonous plants affecting the pastoral industry. As was noted, the role of the herbarium has now changed, the emphasis is no longer focused on the pastoral industry but a broader role, one more involved with conservation and ethnobotanical work, as well as the traditional role of herbaria – of sorting and naming new species and producing floras. He also noted how fortunate we are to

Clockwise from below. a. George Chippendale, July 1954.
b. Rob Swinbourne, Thelma and George Chippendale, Chris Burns, Greg Leach and Des Nelson at the formal gathering at Parliament House. Ph. Todd Sinclair.
c. George and Thelma Chippendale examining George's first collection in the Northern Territory, a specimen of *Eucalyptus intertexta* which he gathered on 19 July 1954.

Ph. Andrea Hope.



have all of our 200,000 specimens databased.

Having written the Minister's speech I was pleased to hear most of it read out. However, one paragraph was missing, one I think which made an important point:

... since the establishment of the herbarium ... 50 years ago, despite changes of Government – from Federal to Territory and within the Territory, from CLP to Labor – there has been a commitment to maintaining a herbarium in the Northern Territory. Perhaps this is not surprising when you look at the names of the collectors who have contributed specimens to the herbarium. Bob Collins [ALP], Mike Reed [CLP, and a previous Minister with the herbarium as part of his portfolio] and Nigel Scullion [current CLP Senator] – *politicians of both political persuasions – have understood the importance of the work of the herbarium.*

And I mean *understood*: all three of the politicians mentioned have collected specimens which are now fully databased residents of our vaults. How many other Australian herbaria can boast contributions from their State and Federal Members of Parliament?

The Minister's speech was followed by some delightful, heart-felt reminiscences by George. He in turn was followed by Judy West, who spoke of close ties between CANB and DNA (we seem to have a "permanent loan" of CANB presses and field driers!), of the fact that much of the work at DNA is geared towards "serving" other government agencies and therefore the herbarium's relevance is readily seen, and that DNA is unique in that ethnobotanical work is carried out. Judy also suggested possible future directions for the herbarium, including the possibility of an on-line flora of the Northern Territory, and spoke generally of the possible uses of electronically accessible collection information and the Australia's Virtual Herbarium (AVH).

Finally, the formalities of the evening concluded with the Minister opening the NT node of the AVH. It had taken 12 months of hassling to get our IT people to set this up and, to the relief of many, it went without a hitch. For access go to www.ipe.nt.gov.au/avh/

Following the formal part of the evening many of us adjourned to a buffet at a beachside restaurant to continue making and renewing acquaintances. The next day saw visits to the herbarium by past staff who, mostly, had yet to see the refurbished building in Palmerston.

I believe I'm correct in saying that all who attended the 50th celebration enjoyed it. I also believe – as concluded by the Minister in his speech – that George, Des and Rob – and all others who worked to establish the herbarium collection in the 1950s in Alice Springs – must be thrilled to see the Northern Territory Herbarium in such great shape. Undoubtedly, the herbarium is now a permanent institution and undoubtedly they have left us a legacy of which they should be very proud.

Many people contributed to the "behind-the-scenes" work that helped make our 50th birthday successful. Some individuals, in particular, deserve to be singled out: Des Nelson and Hilary Coulson, who sent photographs and early catalogues from Alice Springs; Mireille Beaupellet, who spent a considerable amount of time in compiling a splendid PowerPoint presentation of photographs of past and present staff members: Leanne Coleman, who made use of old newspaper clippings to compile posters on the history of the herbarium and associated staff; Ian Cowie, for all of his work which helped lead to the successful launch of the NT node of AVH; and Dale Dixon, who was generally responsible for the organisation of the entire celebrations.

Note from George and Thelma Chippendale

George Chippendale emailed us a copy of the text of his speech. We do append much of the covering email. However, apart from the duties of George's original position – the role of the herbarium seems not to have changed much over 50 years – we have not included his speech, as it was a rendition of his recollections of his days, mostly early ones, in the Territory which he provided to the September and December 2002 issues of the Newsletter. Eds.

Hi Robyn,

... We enjoyed meeting people at the function, and I had a special conversation with Lois Ulyatt

whom I met about 1956-7 at her parents' property Muckaty. I had given a lift from their place to Tennant Creek Hospital for an old aboriginal man, Sloper, who had seen MacDouall Stuart, when he (Sloper) was a very young boy.

I enjoyed meeting Dale Dixon, Greg Leach and Philip Short and others on the staff at the herbarium at Palmerston. And, particularly, I had several days talking with Des and Pat Nelson, and also Rob Swinbourne. Des and Rob had worked with me, and Des is a constant correspondent with me, keeping me up-to-date with Alice news.

On Saturday, Thelma and I had a conducted visit of Parliament House, and were pleasantly surprised to see Gough Whitlam (in a wheelchair) who joined our group for a few moments.

It was a memorable visit. We were worn out but happy, and soon recovered in our more equable climate...

Regards,
George

The job specification for George Chippendale's original position

- Systematic & ecological surveys of flora with special reference to edible and poisonous plants.
- Develop herbarium; maintain contacts and exchanges with Australian and International herbaria.
- Identify & report on Territory plant specimens.
- Botanical advisor in investigations into sickness, losses of stock associated with harmful plants.

The types of Pomaderreae (Rhamnaceae) at the Botanische Staatssammlung in Munich

Jürgen Kellermann

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The herbarium of the *Botanische Staatssammlung* (M) was established in 1813. The history of the institution is described in Martius (1850) and Merxmüller (1977). A detailed account of the collection and its content was published by Hertel & Schreiber (1988), which can also be found in an up-dated version on the internet. The herbarium is best known for its association with Carl Friedrich Philip von Martius' *Flora Brasiliensis* (1840-1906). However, M did not only specialise in that region, it also purchased and received collections from all over the world. Fortunately, the herbarium's detailed records about the acquisition of specimens are still extant; they formed the basis for Hertel & Schreiber (1988). Some collections of interest for Australian botanists include:

- **George Bentham:** The herbarium of Joseph Gerhard Zuccarini (purchased 1849) contained an unknown number of duplicates from Bentham's herbarium, mainly from Europe and China, but Australian specimens might have been acquired as well.
- **Ronald Campbell Gunn:** 560 Tasmanian specimens presented by J.D. Hooker in 1863.
- **Joseph Dalton Hooker:** Collections from New Zealand, Tasmania and the sub-antarctic islands purchased with the Zuccarini herbarium.
- **Karl Alexander Anselm von Hügel:** Australian specimens acquired with the Herb. Zuccarini.
- **John Lindley:** An unknown number of specimens from Lindley's herbarium (mainly from America and Australia) was purchased with the Herb. Zuccarini in 1849.

- **Conrad Loddiges:** The Zuccarini herbarium also contained Australian specimens from Loddiges' nursery.
- **Alfred Karl Meebold:** Large collections from Australia and the Pacific were presented by Meebold to M from Australia (3,256 specimens in 1929-1944), New Zealand (890, 1929-1950), Fiji, Samoa, Pacific islands (over 700, 1933-1949) and Hawaii (over 2,200, 1933-1949).
- **Ferdinand Jakob Heinrich von Mueller:** Between 1872 and 1895 Mueller sent 2,270 specimens to M. However, not all of these were actually collected by him. This overlaps with another record showing 1,389 specimens acquired from the National Herbarium of Victoria from 1885-1891.
- **Ernst Georg Pritzel:** Munich holds a near complete set of Pritzel's set of plants (936 of 1,016 numbers) collected with Ludwig Diels between 1901-1902 in Western Australia (purchased 1905).
- **Johann August Ludwig Preiss:** M purchased c. 2,000 specimens of the *Plantae Preissianae* in 1847. They were collected between 1838-1842 in Western Australia.
- **Franz Wilhelm Sieber:** Hertel & Schreiber (1988) list only 15 Australian specimens collected by Sieber in New South Wales. These were presented to the herbarium in 1903 by Hans Obrist, whose father received them directly from the collector.

Munich also received duplicates from Australian herbaria in the 20th century, namely from AD (more than 2,000 specimens), CANB, CBG, NSW, NT and PERTH.

Pomadereae Reissek ex Endl. is, with over 200 species, the second largest tribe of Rhamnaceae. It is endemic to Australia, with one genus, *Pomaderris* Labill., extending to New Zealand, and currently comprises seven genera: *Cryptandra* Sm. (30-35 spp.), *Blackallia* C.A.Gardner (2 spp.), *Pomaderris* (c. 75 spp. in Australia, 8 spp. in New Zealand), *Siegfriedia* C.A.Gardner (1 sp.), *Spyridium* Fenzl (c. 35 spp.), *Stenanthemum* Reissek (25-30 spp.), and *Trymalium* Fenzl (c. 15 spp.). A phylogenetic analysis and revision of the generic limits using molecular and morphological data is currently being carried out in preparation for the *Flora of Australia* account of the family (K.R. Thiele, F. Udovicic, N.G. Walsh, J. Kellermann & J.G. West, in prep.). For recent results see, for example, Walsh & Coates (1997), Kellermann (2002, 2004, in press), Thiele & West (in press) and Kellermann, Udovicic & Ladiges (in press).

During a visit to the herbarium in Munich in September 2004, I was able to examine their collection of the aforementioned genera. Although the herbarium does not hold large amounts of Australian Rhamnaceae material, it contained a number of previously unlabelled type specimens. The following list enumerates 24 types and possible types of Pomadereae (26 herbarium sheets), one type specimen of Fabaceae (on two herbarium sheets) of a species previously assigned to *Cryptandra*, and some other historic specimens that might be of interest. The list is sorted by collector; after the species name and citation, there are further comments, and the current name of the species is given, if necessary.

- Gunn s.n. (ex Herb. Hooker).** *Cryptandra eriocephala* (Fenzl)J.D.Hook., *Flora Tasmaniae* 1 (1855) 72. One of the specimens Hooker examined when transferring the species from *Spyridium* to *Cryptandra*. = *Spyridium eriocephalum* Fenzl.
- Gunn s.n. (ex Herb. Hooker).** *Cryptandra gunnii* J.D.Hook., *Flora Tasmaniae* 1 (1855) 73, t. 11. Possible type, no locality given on sheet, Hooker cites "Banks of the Franklin River, near Macquarrie Harbour, Gunn". = *Spyridium gunnii* (J.D.Hook.)Benth.
- Gunn s.n. (ex Herb. Hooker).** *Cryptandra obcordata* J.D.Hook., *Flora Tasmaniae* 1 (1855) 71, nom. illeg. Possible type, Hooker quotes "Gunn 1249". = *Spyridium obcordatum* (J.D.Hook)W.M.Curtis.
- Gunn s.n. (ex Herb. Hooker).** *Cryptandra ulicina* Hook., *Hooker's Journal of Botany* 1 (1834) 257. Possible syntype, Hooker cites "Mr Gunn, (n. 150.) Mr Lawrence, (n. 223.)". The genus *Stenodiscus* Reissek, *Linnaea* 29 (1858) 295, was based on this

specimen as well. = *Spyridium ulicinum* (J.D.Hooker)Benth.

- Gunn s.n. (ex Herb. Hooker).** *Cryptandra vexillifera* Hook., *Hooker's Journal of Botany* 1 (1834) 257. Possible type, no detailed locality information on sheet, Hooker cites "Port Dalrymple, Mr Frazer. Dr Scott. Mr Lawrence, (n. 185) Mr. Gunn, (n. 16)". = *Spyridium vexilliferum* (Hook.)Reissek.
- Hooker s.n. "V[an] D[iemens] L[and]" (ex Herb. Zuccarini).** *Cryptandra vexillifera* Hook. Collected by J.D. Hooker in Tasmania during the expedition with the *Erebus* (1839-1843). = *Spyridium vexilliferum* (Hook.)Reissek.
- Hort. Bot. Mon. 1824.** *Pomaderris apetala* Labill.
- Hortus monac. 1846.** *Pomaderris prunifolia* A.Cunn. ex Fenzl.
- Hügel s.n. "Fenzl communicavit M C Vidob 1839" (2 sheets).** *Cryptandra sieberi* Fenzl, *Enum. Pl.* (1837) 23. Possible type, Fenzl does not cite a particular specimen. = *Cryptandra amara* Sm.
- Lindley "communicavit 1839 lectam in insula Van Diemen" (2 sheets ex Herb. Zuccarini).** *Cryptandra*. = *Spyridium vexilliferum* (Hook.)Reissek.
- Major Mitchell's Expedition 183[6] s.n.** *Cryptandra tomentosa* Lindl. in Mitchell *Three expeditions into the interior of Eastern Australia* 2 (1838) 177. Probable type, Lindley does not cite a type specimen.
- Preiss 465 (2 sheets).** *Cryptandra arbutiflora* Fenzl. These are some of the specimens Nees examined when he established the genus *Wichurea* Nees ex Reissek in Lehmann *Pl. Preiss. II* (1848) 290, which contained the species *Wichurea arbutiflora* (Fenzl)Nees and *Wichurea tubulosa* (Fenzl)Nees. The genus has been subsumed into *Cryptandra*. This is one of the few Preiss specimens with exact locality information: "Neu Holland Guildford".
- Preiss 752.** *Cryptandra leucopogon* Meissn. ex Reissek in Lehmann, *Pl. Preiss. II* (1848) 287. Type.
- Preiss 1215.** *Cryptandra scoparia* Reissek in Lehmann *Pl. Preiss. II* (1848) 285. Type. = *Cryptandra scoparia* Reissek var. *scoparia*.
- Preiss 1217.** *Cryptandra mutila* Nees ex Reissek in Lehmann, *Pl. Preiss. II* (1848) 289. Syntype with Preiss 1229 and Drummond II 723. Also type of *Cryptandra* subg. *Corisandra* Nees loc. cit.
- Preiss 1673b.** *Pomaderris commixta* Steud. in Lehmann *Pl. Preiss. I* (1845) 184. Type. = *Spyridium majoranifolium* (Fenzl)Rye.

- Preiss 1675.** *Cryptandra floribunda* Steud. in Lehmann, *Pl. Preiss. I* (1845) 186. Type. = *Trymalium ledifolium* var. *ledifolium* Fenzl.
- Preiss 1676.** *Pomaderris pyrophylla* var. **b** Steud. in Lehmann, *Pl. Preiss. I* (1845) 183. Type. = *Spyridium globulosum* (Labill.)Benth.
- Preiss 1677.** *Pomaderris polyantha* Steud. in Lehmann, *Pl. Preiss. I* (1845) 182. Syntype with Preiss 1679. = *Spyridium globulosum* (Labill.)Benth.
- Preiss 1680.** *Trymalium floribundum* Steud. in Lehmann, *Pl. Preiss. I* (1845) 185. Type.
- Preiss 2420a.** *Cryptandra glabrata* Steudel in Lehmann *Pl. Preiss. I* (1845) 188. Type. = *Cryptandra arbutiflora* var. *tubulosa* (Fenzl)Benth.
- Sieber 66 (ex Herb Zuccarini).** *Cryptandra australis* Sm., *nom. illeg. non Pers.* = *Cryptandra ericoides* Sm.
- Sieber 67.** *Cryptandra sieberi* Fenzl., *Enum. Pl.* (1837) 23. Fenzl cites several collections, namely "Port Jackson (Ferd. Bauer, Sieber); in interioribus N. South Wales (Cunningham)", but does not give collection numbers. Possible syntype. = *Cryptandra amara* Sm.
- Sieber 68 (ex Herb Zuccarini).** *Cryptandra spinescens* Sieb. ex DC., *Prodr. 2* (1825) 38. Type.
- Sieber 129 (2 sheets ex Herb. Schwaerichen & Zuccarini).** *Cryptandra obovata* DC., *Prodr. 2* (1825) 38, *non* (Hook.)J.D.Hook., *Flora Tasmaniae 1* (1855) 74. Type. = *Pultenaea altissima* F.Muell. ex Benth. (Fabaceae, see Kok & West 2002)
- Sieber 208.** *Pomaderris malifolia* Sieb. ex Steudel, *Nom. bot.* (ed. 2) **2** (1841) 379, *nom. illeg.* Type. = *Pomaderris elliptica* Labill.
- Sieber 209 (2 sheets) & Sieber 214.** *Pomaderris lanigera* var. **b** DC., *Prodr. 2* (1825) 33. *Pomaderris ferruginea* Sieb. ex Fenzl, *Enum. Pl.* (1837) 21. *Pomaderris vidirufa* Sieb. ex Fenzl *loc. cit.*, *pro syn.*, *nom. inval.* Syntypes. = *Pomaderris ferruginea* Sieb. ex Fenzl.
- Sieber 210.** *Pomaderris intermedia* Sieb. ex DC., *Prodr. 2* (1825) 33. Type.
- Sieber 211.** *Pomaderris aspera* Sieb. ex DC in *Prodr. 2* (1825) 33. Type.
- Sieber 212 (2 sheets).** *Pomaderris ligustrina* Sieb. ex DC., *Prodr. 2* (1825) 34. Type.
- Sieber 213 (ex Herb Zuccarini).** *Pomaderris discolor* Vent.
- Sieber 214** see **Sieber 209.**
- Sieber 215.** *Pomaderris phyllirioides* Sieb. ex DC. (as 'phylliraeoides'), *Prodr. 2* (1825) 33. Type. = *Pomaderris andromedifolia* A.Cunn.
- Sieber 216.** *Pomaderris obscura* Sieb. ex Fenzl, *Enum. Pl.* (1837) 21, *pro syn.*, *nom. inval.* Type. = *Pomaderris lanigera* (Andrews)Sims

All Australian collections listed above are also mentioned in Hertel & Schreiber (1988). However, it is surprising that no type specimens by Ferdinand von **Mueller** have been found. Given the large number of specimen forwarded to Munich in the late 1800s, I would have expected to find some types of plants named by von Mueller, or specimens collected by him. As could be expected from the herbarium's catalogue, there were many specimens collected by **Preiss**. *Plantae Preissianae* (Lehmann 1844-1848) lists 35 specimens of Rhamnaceae. The herbarium M contains eleven specimens from this collector, *i.e.* nearly a third of the collection for this family; nine of these specimens are types. There are more **Sieber** specimens of Rhamnaceae in the collection than are mentioned in the catalogue. Five of the 16 specimens came into M via other herbaria (Herb. Zuccarini and Schwaerichen). If the remaining eleven specimens were all donated by Obrist in 1903, as indicated in Hertel & Schreiber (1988), or if there are indeed more specimens collected by Sieber at M, remains to be seen. At least for Rhamnaceae, the herbarium seems to have a near complete set of Sieber specimens. None of the **Gunn** specimens at M bears a collection number or an exact location apart from "Hab. Tasmania". However, they all bear the annotation "ex Herb. Hooker" and were donated by J.D. Hooker himself in 1863. As such these specimens have possibly been used by him and his father William Jackson Hooker when they described their new species, *i.e.* they are possible type specimens. Other collectors only represented by one specimen in the Rhamnaceae collections are **J.D. Hooker** and **Hügel**, and one collection from **Mitchell**'s third expedition in New South Wales in 1836. Two specimens of *Spyridium vexilliferum* from Tasmania were forwarded by **Lindley** to Zuccarini in 1839, although the collector is unknown.

The herbarium also contains two cultivated species of Australian Rhamnaceae. These two specimens give us an early record of the cultivation of *Pomaderris* in botanic gardens. *Pomaderris apetala* was introduced into English gardens by Peter Good in 1803 (Aiton 1810-13) and was grown in Munich in 1824. *Pomaderris prunifolia* was described in 1837 by the Viennese Eduard Fenzl from material collected by Cunningham. It is recorded to have grown in

Vienna by Endlicher (1843) and the herbarium specimen dates its cultivation in Munich to 1846.

The herbarium of the *Botanische Staatssammlung* contains many important early collections of Australian plants. Of Australian Rhamnaceae alone, 24 type and possible type specimens were located on 26 herbarium sheets. Undoubtedly, many more wait to be discovered. Australian botanists should consider requesting loans from this institution, if they are in search of historic material or type specimens.

Acknowledgments

The receipt of travel grants from the School of Botany and the Scholarships Office, The University of Melbourne, and from the Australian Biological Resources Study (ABRS) are gratefully acknowledged. This paper was written in preparation of the *Flora of Australia* treatment of Rhamnaceae, supported by ABRS.

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The Bokkara Creek of Leichhardt's expedition

A.R. Bean

Queensland Herbarium

Many Leichhardt specimens lodged at MEL and NSW, at least a few at K, and one at BRI (an isotype of *Panicum buncei* Benth.), bear the locality name 'Bokkara Creek' or 'Bokkara Flats' with some slight variations in the spelling.

It is apparent that when these specimens were geocoded, they were assigned a latitude and longitude corresponding to either the Bokhara River which straddles the NSW-Qld border near Dirranbandi and Goodooga, or the Bokhara Creek further west near Thargomindah.

The problem is, Leichhardt never visited these parts of Australia. His travels in southern Qld and northern NSW took him no further west than around Roma and the western slopes of the New England Tableland (e.g. 'head of the Gwydir River'). So where is the Bokkara Creek of Leichhardt?

The answer lies in Daniel Bunce's "Travels with Dr Leichhardt in Australia" (Bunce 1859). Bunce was the botanist and naturalist on Leichhardt's second expedition. He appears to have been a very able botanist, for his journal tells us that he "collected upwards of 1000 plants, with where practicable, their specimen papers in triplicate", a sterling effort considering the extremely trying conditions experienced by the party. Happily for us, he was also assiduous in accurately labelling the specimens, as most have a label bearing both a locality and a date.

The dates associated with Bokkara Flat and Bokkara Creek range from 12 December 1846 and 3 January 1847. From Bunce's journal it is immediately obvious that the party was indeed encamped at the one place for the whole of this period, near present-day Chinchilla. This lengthy

stay was due to the continual straying of their livestock, and because Leichhardt was awaiting news of Thomas Mitchell's recently concluded expedition.

Bunce was evidently a keen student of the language of the aborigines, and frequently quoted words he had learned. On 20 December, Bunce wrote "I give a few more words of these natives (Charlies Creek): Bockara, boy; Condamine River, Yandukal;".

On their first full day at this place (12 December), a small aboriginal boy approached Bunce, begged for tobacco and uttered an English swear word. This surprised Bunce greatly, and probably prompted him to call the campsite Bokkara (boy) Flat and the adjacent creek Bokkara (boy) Creek, and then use these localities for his specimen labels.

Neither of the localities Bokkara Flat or Bokkara Creek appears in Bunce's journal. It is unclear why Bunce used only Charlies Creek in his journal, and only Bokkara Creek on his specimen labels. They are plainly one and the same.

Leichhardt's journal covering the same period (reprinted in Sprod (1989)) gives a different interpretation of the meaning of "Bokkara". An excerpt from his journal for 20 December says

"Mr Bunce has collected some more words from Mr Turner the blackfellow. Bokaara, the name of this creek, Yandukall, the Condamine, ...". On 21 December, Leichhardt referred to the creek "on which we are" as the Bokkara, and this was the usual spelling from that point on.

For the journal entry of 12 December, Bunce stated that their campsite was at latitude 26° 44'. On 15 December he said, "Charlies Creek joins the Condamine about nine miles from our camp". From these pieces of information, it is easy to determine the position of Bokkara Creek and Bokkara Flat as 26° 44' S and 150° 40' E, about 4 km north-east of Chinchilla.

In summary, Bokkara Creek is an alternative name for Charlies Creek (near Chinchilla), and Bokkara Flat is immediately adjacent to it. The collections of Leichhardt and Bunce bearing either of these locations are from 26° 44' S, 150° 40' E.

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Eichler Research Fund reports

Evolution and biogeography of the Australian Loranthaceae

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The Loranthaceae are a large, tropical and southern-temperate family of mistletoes. Its classical Gondwanan distribution can be explained in terms of multiple vicariance events, associated with Gondwanan break up, and relatively limited migration over near-continuous land bridges. Australia has the most primitive but also arguably some of the most derived mistletoes. Australian loranthaceous mistletoes occur in almost all habitats where there are trees or shrubs to support them, from deep rainforest to open arid woodlands. As a group they parasitise a wide range of host species, some mistletoes being generalists and others showing significant host species specialisation which in many cases has lead to a remarkable level of host resemblance.

More than half of the approximately 80 species of Australian Loranthaceae are *Amyema* Tieghem.

This genus displays many of the diverse attributes seen among the Australian members of the family. Previous concepts of the evolutionary relationships among the Australian members of this family suggest *Amyema* and a sister genus *Diplatia* Tieghem were possibly derived from *Dactylophora* Tieghem. This large and variable genus makes a good case study to investigate evolutionary trends within Australian taxa.

I have been using nuclear ribosomal and chloroplast sequence data to supplement morphological and cytological information already available to investigate evolutionary and biogeographical trends amongst the Australian Loranthaceae. The award of the Hansjörg Eichler Scientific Research Fund enabled me to broaden my investigation of *Amyema* by collecting additional cpDNA sequence data.

The locus used (*trnL*-UAA intron-intergenic spacer) displays length variation providing diagnostic insertion and deletion characters and also ample sequence variation. It has proven most useful in elucidating the relationships amongst this diverse group of species. I now have *trnL* sequence data for 30 Australian species of *Amyema* and also all the closely related *Diplatia*, *Benthamina* Tieghem and the Australia representative of *Dactyliophora*. There is no current infrageneric classification for *Amyema*.

Amyema and its closest allies form a natural group which includes two major clades and a number of less derived taxa. There is a large, well supported clade which contains most Australian *Amyema* and also all endemic *Diplatia*. Another well supported group, sister to this, is comprised of *Amyema* species previously recognised at the generic level, *Pilostigma* Tieghem, which occurs almost exclusively in the tropics. There are then several less derived taxa including a number of *Amyema*, also *Benthamina* and *Dactyliophora*.

Resolution of the phylogenetic origins of *Amyema* in this context will require further data which I am in the process of collecting. The two sister groups mentioned above show independent but parallel developments in adaptations such as level of host specificity, host resemblance and success in the arid zone.

The results of this study are being combined with additional data from other chloroplast and nuclear loci to investigate the evolutionary trends among the Australian representatives of this iconic family.

I express my sincere appreciation to the Australian Systematic Botany Society for granting me the Hansjörg Eichler Scientific Research Fund Award. An important award for many student-recipients in terms of research funding in an all too often poorly supported science, but also in terms of self-esteem early in their career.

Resolving the *Euchiton traversii*–*Euchiton argentifolius* complex using molecular AFLP technique

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The aim of an Amplified Fragment Length Polymorphism (AFLP) component of my PhD work was to offer additional evidence for species delimitation of three taxa in the *Euchiton traversii* complex. This was to be used for comparison with morphological results already obtained. In summary the AFLP process involves cutting genomic DNA into fragments with restriction endonucleases, ligating adapters to the fragments, then amplifying using selected primers and PCR and analysing the fragments through gel analysis. Fragments are labelled such that when they are run on an electrophoresis gel and separated on size, the resulting banding patterns can be read and compared.

Essentially this molecular analysis was designed to compare the variation within populations of each taxon to the variation between taxa. If distinct species are present the variation within should be less than that between and the taxa should have different banding patterns. If, however, there is a continuum across any of the taxa sampled with no marked disjunctions then the taxa currently recognised potentially belong to the one species. The investigation primarily focussed on the species level, but considering the role of vegetative clonality and selfing in some of

these species, the amount of difference between individuals was also of interest.

In an interim report several obstacles to the commencement of this study were detailed¹. Subsequently the material necessary was accumulated and all of the DNA isolations were completed. An experimental design of five populations for each of the three taxa and five samples per population was aimed for. In actuality only four populations were available for *Euchiton argentifolius* and only two samples for two of these. Thus the total number of samples came to 64.

A pilot test was undertaken to optimise the primer combinations. A subset of 16 of the 64 samples was included. Seven different primer pairs were screened in four test runs altering several different parameters. The same radioactively labelled *EcoR* I primer was used for all trials, *EcoR* I-ACGG. Seven *Mse* I primers were trialled: *Mse* I -AG, *Mse* I -CTAC, *Mse* I -CTT,

¹ Christina had already published a report in *Austral.Syst.Bot.Soc.Nsltr* 113 (2002). Here she brings us up to date with her work. She is now based in the Netherlands and finalising her Ph.D. treatise "Systematics of *Euchiton* (Gnaphalaceae: Asteraceae) with a focus on Australia and New Zealand". Eds.

Mse I -TGCC, *Mse I -GA*, *Mse I -CTA*, *Mse I -TGCA*. The latter two proved to give the best results, although these were not good enough to score. Some improvement was made over the four analyses but not sufficient to use. If this process works it is fairly quick. If it does not work, ironing out the problems can be a project in itself. The same problems are not consistent across all of the primer pairs or all of the tests, making an assessment of the problem(s) rather difficult. The success of one sample of *E. argentifolius* shows that the process was effective, although it does not explain why other samples did not yield bands.

After investigating many of the other potential reasons for the lack of success with AFLPs it was suggested that there may be some chemical residue formed in the use of the DNeasy kit that was interfering with the method. This has been noted in other Asteraceae species (Liz James, pers. comm.) and use of a different kit, such as Nucleospin alleviated this problem. Unfortunately, due to the small amount of material available being used entirely in the isolation, it was not possible to return to this initial stage and repeat the entire process.

This study was aborted after several attempts, as several problems arose. Unforeseen obstacles were encountered in collecting material for

comparison. Initially a paucity of *E. argentifolius* material was encountered in the field due to unseasonal weather. Additional fieldwork was planned to compensate for this. However, severe alpine fires made this impossible. One taxon was not known to be associated with the complex at the inception of the project and this proved to be of pivotal importance necessitating obtaining additional material from other researchers in New Zealand. This material was unfortunately waylaid by customs, placing unexpected time constraints on the project.

Even once the material was obtained and the DNA isolated the necessary reagent kit was also unexpectedly out of stock, adding an extra month. The inconsistent problems with the banding patterns finally produced for the pilot study would probably have been surmountable with none of the other hold ups. Due to the cumulative impact of these issues this component simply ran out of time and it was decided that moving on with other components of the PhD project was the best plan. Persistence is likely to overcome the primer optimisation problems and the DNA is stored in a -80 degrees freezer at the Royal Botanic Gardens of Victoria in case anyone wishes to continue this research in the future.

The diversity of scleromorphic structures in the leaves of Proteaceae

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Proteaceae is a large family containing 79 genera and up to 1700 species. The family's distribution lies mainly within the Southern Hemisphere, with Australia being the main centre of the family's diversity. Proteaceae show a great diversity in morphology and occur in many extreme habitats, ranging from the arid zone, to closed tropical rainforests, to Mediterranean climates, to alpine areas. They are among the main groups of scleromorphic plants in the Southern Hemisphere, and many studies into the evolution of scleromorphy have focused on this family.

To investigate the diversity of scleromorphic structures in the leaves of Proteaceae, the leaves of 144 species from 68 of the 79 genera, including all subfamilies, tribes and subtribes of Proteaceae were collected. The species collected represent an ecologically and geographically broad range of habitats.

All species collected were cross sectioned and the scleromorphic structures within the leaves were

identified, photographed and documented. A great diversity of scleromorphic structures were found including bundle fibre caps, lignified bundle sheaths, vascular bundle extensions, lignified leaf margins, very thick cuticles, lignified hypodermal structures associated with the adaxial and abaxial surfaces, five kinds of sclereid within the mesophyll and three kinds of sclereids associated with vein endings.

A comparison between glasshouse and field grown representatives of 16 species revealed that all lignified tissue types in field grown plants were also present in glasshouse grown plants, suggesting that the presence or absence of scleromorphic structures is genetically based. A comparison between plants growing in sheltered and exposed field sites showed that the thickening of cell walls shows a degree of phenotypic plasticity. Thus, the presence or absence of scleromorphic tissues appears to be genetically fixed, but the degree of scleromorphy is partially plastic.

The association of scleromorphic structures with habitat types was assessed. Character state changes for scleromorphic structures were reconstructed on the Proteaceae phylogeny (based on Douglas and Hoot 1998 and personal communication from Peter Weston). Evolutionary comparative methodologies were used to identify any association of scleromorphic structures with habitat type and furthermore, to assess the degree of convergence in these traits. A significant association was found between thin cuticles and rainforest taxa and thick cuticles and non-rainforest, scleromorphic taxa. No other statistically significant association of scleromorphic structures and habitat type were found with many characters evolving several times in both rainforest and a variety of non-rainforest habitats. The presence of several characters, such as individual sclereids, appear closely related to phylogeny. This leads to the conclusion that the functional significance of scleromorphic structures may be more complex than current hypotheses suggest.

A paper describing the diversity of leaf anatomy is in near-final draft form, waiting submission (Dillon *et al.* ms in prep). This work also

provided a large proportion of the data for a paper proposing an evolutionary association of some of these anatomic characters with high light environments (Jordan *et al.* in press).

I would like to give thanks to the Australian Systematic Botany Society for providing financial assistance through the Hansjörg Eichler Scientific Research Fund award. The funds provided were used to purchase an airfare and car hire for travel to and around Far North Queensland in order to collect leaves from 17 key tropical rainforest taxa, which formed an important part of my study. I would also like to thank my supervisor Greg Jordan for his support and his posing handbook.

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Floral development and systematic position of *Arillastrum*, *Allosyncarpia*, *Stockwellia* and *Eucalyptopsis* (Myrtaceae).

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The monophyletic Australasian 'eucalypt group' consists of seven genera (Wislon *et al.*, 2001). *Eucalyptus sensu stricto* L'Hér., *Corymbia* K.D. Hill & L.A.S. Johnson and *Angophora* Cav. are generically referred to as eucalypts *sensu lato*. These sclerophyllous taxa form a species rich assemblage, which dominate open forests and woodlands throughout Australia. The remaining four genera, *Arillastrum* Panch. ex Baillon, *Allosyncarpia* S.T. Blake, *Stockwellia* D.J. Carr, S.G.M. Carr & B. Hyland and *Eucalyptopsis* C.T. White are dense, canopy-forming trees that are essentially relicts of tropical rainforest environments and, with the exception of *Eucalyptopsis* (2 spp), are monotypic. *Arillastrum gummiferum* Panch. ex Baillon is endemic to New Caledonia (Dawson, 1970). *Allosyncarpia ternata* S.T. Blake is the dominant tree of monsoonal rainforests in Arnhem land of northern Australia (Blake, 1977, Russell-Smith *et al.*, 1993). *Stockwellia quadrifida* D.J. Carr, S.G.M. Carr & B. Hyland is restricted to the Atherton tablelands of Queensland (Carr, *et al.*, 2002). *Eucalyptopsis papuana* C.T. White and *Eucalyptopsis alauda* Craven occur in rainforests

extending from Papua New Guinea to Irian Jaya, Woodlark island and Buru of the Moluccan archipelago (White, 1951; Craven, 1990).

Johnson and Briggs (1984) proposed that *Arillastrum*, *Allosyncarpia*, *Stockwellia* and *Eucalyptopsis* formed a monophyletic clade, which they called the 'Arillastrum group'. Recent molecular phylogenies do not support this proposed monophyly (Udovicic and Ladiges, 2000; Steane *et al.*, 2002; Ladiges *et al.*, 2003). Udovicic and Ladiges (2000) produced cladograms based on nuclear (ITS and 5S rDNA spacer regions) and chloroplast (*psbA-trnH* intergenic spacer, *trnL* intron and *trnL-trnF* spacer regions) DNA data sets which provide evidence for two major lineages. The strict consensus tree depicts *Stockwellia* (referred to as *Myrtaceae sp.*) and *Eucalyptopsis* as sister taxa that together with *Allosyncarpia* form a clade. The other major lineage consists of *Angophora*+*Corymbia*, which are shown as sister to *Eucalyptus*. The molecular data are equivocal with respect to the exact systematic position of *Arillastrum*. Ladiges *et al.* (2003) presented a summary tree where they collapsed some nodes

from the total evidence tree of Udovicic and Ladiges (2000) showing *Arillastrum* as an unresolved polytomy with the *Angophora+Corymbia* and *Eucalyptus* clade. The ITS analysis by Steane *et al.* (2002) produced generic relationships that differed to those shown by Udovicic and Ladiges (2000) and Ladiges *et al.* (2003). In this analysis, a clade containing *Angophora+Corymbia*, *Allosyncarpia*, *Eucalyptopsis* and *Stockwellia* is distinguished from *Eucalyptus*. Furthermore, within this clade, *Allosyncarpia* and *Eucalyptopsis* are depicted as sister taxa that together with *Stockwellia* form a monophyletic clade. *Arillastrum* is shown as sister to all taxa.

The aims of my PhD project are to resolve the phylogenetic relationships of *Arillastrum*, *Allosyncarpia*, *Stockwellia* and *Eucalyptopsis* to each other and in relation to the eucalypts from a comparative study of morphological characters. I was awarded \$1000 from the Hansjörg Eichler Scientific Research Fund to assist in the finance of a study of floral development in *Arillastrum*, *Allosyncarpia*, *Stockwellia* and *Eucalyptopsis*.

Superficially the flowers of *Arillastrum*, *Allosyncarpia*, *Stockwellia* and *Eucalyptopsis* are similar to one another. The 4 or 5-merous perianth parts are always free, although highly reduced in *Stockwellia* and *Eucalyptopsis* and the androecium is made up of many whorls of stamens. The presentation of the stamens at anthesis results in apparent diversity. In *Arillastrum* the androecium is manifest as four antepetalous groups made up of outer tiers of filaments that are without anthers (staminodes), and below these, many tiers of filaments that bear anthers (stamens) (Fig. 1a). In *Allosyncarpia* (Fig. 1b) and *Eucalyptopsis* (Fig. 1c) stamens are presented as more or less continuous circumfloral rings. The rupturing of the hypanthium in *Stockwellia* splits the androecium into four segments and tufts of stamens are presented on the tips of four hypanthium parts (Fig. 1d).

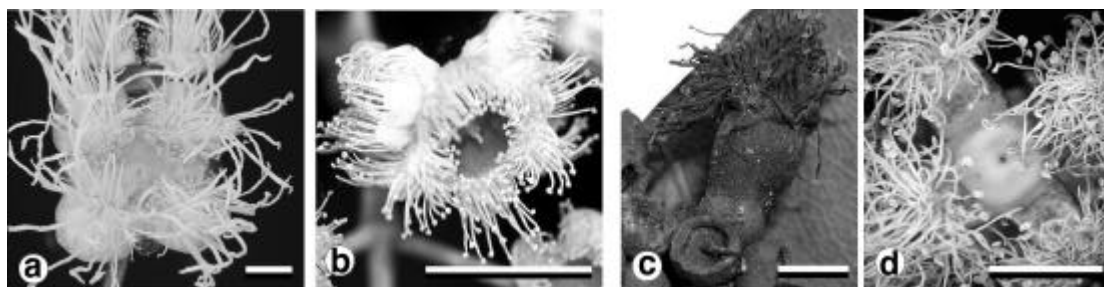
To examine the ontogenetic basis for these

differences in floral structure, flowers at all developmental stages were dissected and material was prepared for examined by scanning electron microscopy (SEM).

In both *Arillastrum* and *Allosyncarpia* the perianth primordia differentiate into distinct petaline and sepaline whorls. These petals form from single, simple primordia that undergo marginal growth leading to dorsiventral structures with a broad lamina and constricted base, typical of most Myrtaceae. In *Stockwellia* and *Eucalyptopsis* the perianth consists of eight to ten primordia that develop into rudimentary structures that are not differentiated into calycine and corolline whorls. There is no indication in any of these taxa to suggest a compound nature of the petal primordia indicative of the keel and limb duality described for *Angophora*, *Corymbia* and *Eucalyptus* (Drinnan and Ladiges, 1988, 1989a,b, 1991a).

In all taxa two to three stamen primordia are initiated directly on the floral meristem and centripetal to each developing petal. As the bud expands, more space becomes available on the meristem in front of and to the sides of the existing stamen primordia. The apparent differences in the androecium of these taxa result from late divergences in developmental pathways involved in stamen positioning, hypanthium growth and organ determination. The mature androecium of *Arillastrum* consists of stamens and staminodes that remain in the four antepetalous groups from inception. Those with the longest filaments (derived from the first formed primordia) are located in the centre of the group and the shorter filaments (from later formed primordia) are found to the sides and to the inside of the flower. All of the filaments in the outermost tiers, regardless of length (and hence timing of inception) fail to develop anthers and remain sterile. In the mature flower of *Allosyncarpia* the stamens are distributed in a more or less even ring around the hypanthium, but with the longer stamens opposed to the petals and shorter ones in antesealous regions. This

Fig. 1 Photographs of flowers. a, *Arillastrum gummiferum*; b, *Allosyncarpia ternata*; c, *Eucalyptopsis papuana* d, *Stockwellia quadrifida*. Scalebars = 5 mm



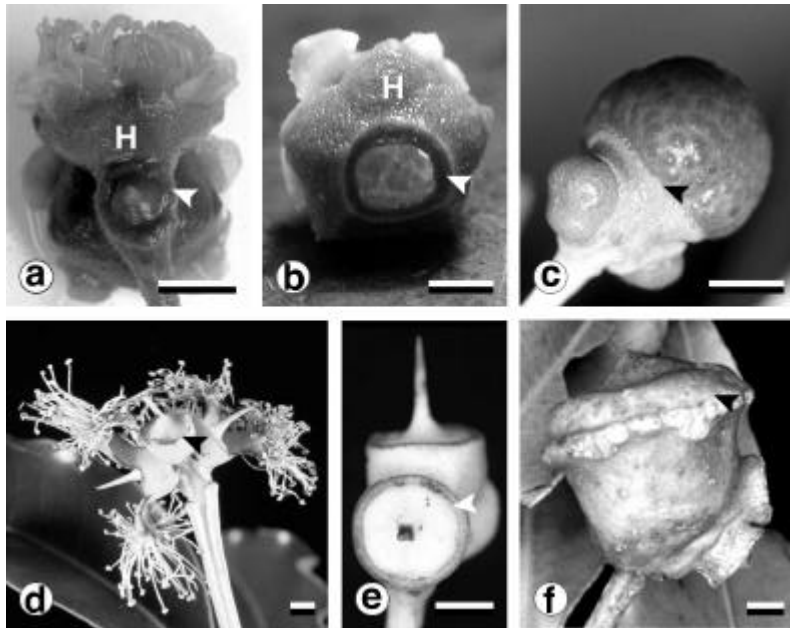


Fig. 2. Abscission in flowers of:
 a-b *Allosyncarpia ternata*
 c *Allosyncarpia ternata*
 d-e *Stockwellia quadrifida*
 f *Stockwellia quadrifida*.
 (Abscission scars in the fruits arrowed).
 H = hypanthium.
 Scale bars = 3mm.

apparent ring of stamens is the result of hypanthium expansion in the lateral direction that stretches out the stamens, thus distorting the pattern of primordia initiation apart from the earliest-formed and longest stamens remaining obvious opposite the petals. In *Stockwellia*, the failure of the perianth to develop precludes expansion of petal bases influencing the sites of stamen formation for all but the first few series. Subsequent series develop on a region of the hypanthium unaffected by differential expansion of sepal and petal bases, and form as uninterrupted circumfloral rings. These series of stamens are not distorted by late expansion of the bud, and remain as rings around the inner wall of the hypanthium until anthesis when the hypanthium splits into four segments. The same scenario of stamen development that occurs in *Stockwellia* is predicted for *Eucalyptopsis* although there is no rupturing of the hypanthium and therefore stamens are presented in intact rings at anthesis.

In *Allosyncarpia*, *Stockwellia* and *Eucalyptopsis* the hypanthium is shed from the flower once the anthers have dehisced and the stamens have started to senesce. In *Allosyncarpia* and *Stockwellia*, the abscission zone is identical, and develops around the base of the hypanthium just above its junction with the ovary wall. In both taxa the abscission zone does not begin to differentiate until after the flower has opened, and only sections just prior to articulation reveal the characteristic darkly stained, actively dividing, abscission layer. Once the hypanthium has shed, wound tissue forms a scar that manifests as a

prominent raised rim in later stages of the fruit (Fig. 2a-f.).

A number of floral development characters are potentially informative in resolving phylogenetic relationships between *Arillastrum*, *Allosyncarpia*, *Stockwellia* and *Eucalyptopsis* and assessing their relationship with the eucalypts. Small and undifferentiated perianth parts are a feature common to *Stockwellia* and *Eucalyptopsis*, and contrast with the calyx and showy corolla of *Arillastrum* and *Allosyncarpia* that is typical of the general condition in Myrtaceae. *Stockwellia* and *Eucalyptopsis* are also similar in their elongated hypanthium that gives the flower buds their fusiform shape. The circumscissile abscission of the hypanthium once the anthers have dehisced is a synapomorphy of *Allosyncarpia*, *Stockwellia* and *Eucalyptopsis*. There is no evidence of this feature in *Arillastrum*, which like most other Myrtaceae retains the calyx on the fruit as persistent teeth, the plesiomorphic condition for the family. These characters clearly show that *Stockwellia*, *Eucalyptopsis* and *Allosyncarpia* form a monophyletic group to the exclusion of *Arillastrum*. This is consistent with the main contentions of Udovicic and Ladiges (2000) and Ladiges *et al.* (2003) based on DNA sequence evidence.

The simple nature of the corolline primordia of all four genera is presumed to be plesiomorphic. There is no evidence of morphologically complex petals such as those that lead to the keel and limb construction in eucalypts, interpreted as a derived

feature of the *Angophora* + *Corymbia* + *Eucalyptus* clade. This suggests that all four genera, including *Arillastrum*, are outside this group (Fig. 3). The position and pattern of stamen initiation are similarly plesiomorphic and, apart from demonstrating that the apparent antepetalous groups are related to dynamics of hypanthium growth are uninformative as to relationships.

A full description and discussion of this project is published as

Bohte A., Drinnan A. N. (2004) Floral development and systematic position of *Arillastrum*, *Allosyncarpia*, *Stockwellia* and *Eucalyptopsis* (Myrtaceae). *Plant Syst. Evol.* [presently only available on-line. *Eds.*]

Acknowledgments

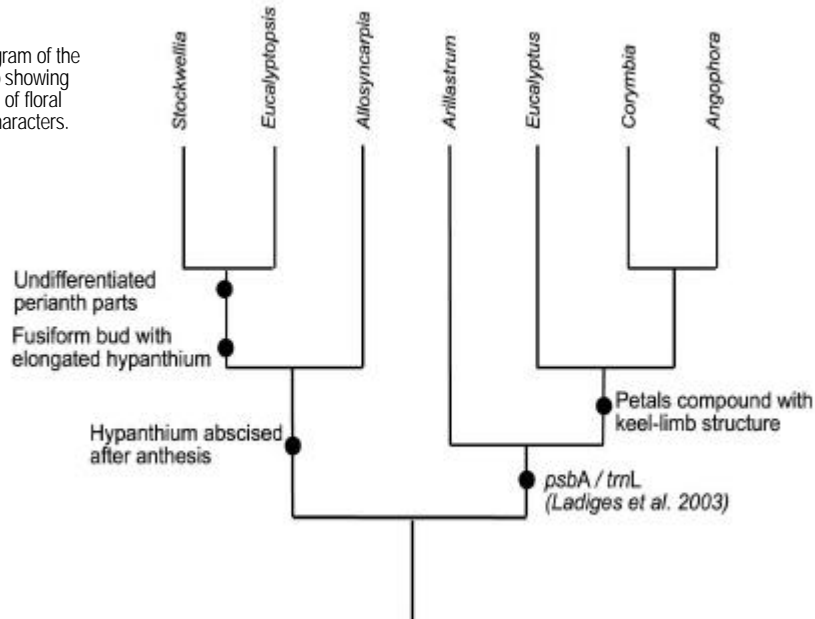
I would like to thank Bruce Gray and Bernie Hyland (CSIRO, Atherton) for collecting *Stockwellia* and Clyde Dunlop and Bob Harwood (Northern Territory Herbarium) for collecting *Allosyncarpia*. CANB Herbarium is also thanked for the loan of *Eucalyptopsis* specimens.

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Fig. 3. Cladogram of the eucalypt group showing the distribution of floral morphology characters.



Obituary

Geoff Tracey (1930–2004), a special friend of the Queensland Herbarium

Laurie Jessup

Queensland Herbarium, Brisbane

John Geoffrey (Geoff) Tracey was born in Cairns, Queensland and in 1947-48 studied agriculture at Queensland Agricultural College, Gatton. This is now the Gatton campus of The University of Queensland. Geoff did some later studies in Science (Botany) at The University of Queensland at St Lucia, Brisbane, in the early 1960s.²

In 1949 Geoff began work at CSIRO as an assistant to Len Webb and a field collector for the Australian Phytochemical Survey. This work, and contact with other botanists/collectors such as H.C. (Harold) Hayes, who worked for Alex Floyd, W.T. (Bill) Jones, and especially L.S. (Lindsay) Smith ensured that Geoff gained a good overall knowledge of the Australian rainforest flora. He had a particular ability to identify seedlings and juvenile plants that could only be achieved through extensive field experience.

As an undergraduate in the early '70s I became aware of Geoff's work with Len Webb. During 1974 I was trying to identify some rainforest specimens at the Queensland Herbarium. Some specimens proved particularly difficult and I was advised to visit Geoff Tracey who worked down the road at CSIRO. I was shown into a lab that had a large set of catalogue drawers. Inside were folded cards each containing one or two leaves or leaflets of a rainforest plant. As I showed each of my unknown specimens to Geoff he opened one of the drawers, removed a card with its attached leaves and compared it with my specimen while explaining the similarities between the two. Later after I began work at the Queensland Herbarium as a technical assistant Geoff would visit from time to time with a bundle of specimens collected from a rainforest site and would identify them in the herbarium. Wrongly identified specimens in the Herbarium collection were frequently discovered, and I gladly accepted the task of comparing them with specimens under another name suggested by Geoff.

² See also www.gu.edu.au/ins/collections/webb/tracey.html the Griffith University website which includes a biography and photograph. *Eds.*

Len Webb's retirement in 1980 and Geoff's transfer to CSIRO Atherton provided new opportunities for Geoff such as the tree planting scheme on the Atherton Tableland but it meant that the Queensland Herbarium and staff like myself no longer had the benefit of frequent visits from this experienced rainforest botanist.

The Annonaceae in Australian rainforests were of particular interest to Geoff. There were many distinct and recognisable taxa that he encountered at various sites, but as they were known only from sterile material few could confidently be placed in a genus. Before the days of HISPID names this led him to give these undetermined species memorable nick names such as 'Fritz's Carol Creek Annon' (now *Miliusa horsfieldii*). These obvious gaps in our knowledge of Australian Annonaceae led him to encourage me to take an interest in their taxonomy. His knowledge of the ecology of the various species assisted my understanding of the taxonomy.

Webb and Tracey specimens and Geoff's notebooks

Geoff remarked on several occasions that as most of the early voucher specimens from the Webb and Tracey sites were lodged at the Queensland Herbarium it was logical that as many as possible be incorporated there. He could also see the many potential uses of the Herbracs database of label information -- a project that was well advanced by the late 1970s.

Shortly before he died Geoff sent his collecting notebooks to Brisbane and these are now housed in the Queensland Herbarium archives, on the same floor of the building as the majority of the Webb & Tracey voucher specimens accumulated over 50 years (10,870 specimens). The notebooks finish at collection number 15,553.

Most specimens not at BRI are likely to be at QRS. Replicates, when available, have been sent to CANB and most other state herbaria. Most of the pre-1980 collections list Webb and Tracey as the collectors but for collections after Len Webb's retirement I advised Geoff to continue the same

number series with Tracey recorded as the collector.

Permanent evidence of one of Geoff's favourite specimen collecting methods can be seen in the shotgun pellet holes in the leaves of many specimens taken from rainforest trees. This was frequently the most efficient way of obtaining voucher specimens from the canopy of intact rainforest.

When Geoff was transferred to Atherton (CSIRO Division of Plant Industry and Division of Forest Research) there was still a large number of voucher specimens from the rainforest sites that needed labels before they could be incorporated into the Queensland Herbarium. In his notebooks Geoff acknowledges assistance in the transcription of site/specimen notes to his notebooks and to herbarium labels. In notebook 7 of 13 he wrote "Grant money from Institute of Aboriginal Studies (Peter Ucco) Canberra enabled us to catch up on our back log of specimens and have labels typed and specimens put in Queensland Herbarium from June 1978. Hence collections are from all over the place and at different times." This refers to the fact that many specimen numbers are not sequential with respect to the date of collection.

In the last notebook Geoff wrote that he was particularly appreciative of the assistance given

by Les Barnes, retired DPI adviser in Eacham Shire, and Jack Woodward and Ivy Krieger with funding from the Phytochemical Survey, Division of Applied Organic Chemistry; and from Milton Moore, CSIRO Division of Land Use Research. Geoff wrote "Without help of people like Les many collections would not have found their way into the Queensland Herbarium". Interestingly, in the same notebook on the same page he wrote "There has been a complete lack of support for this work within CSIRO for J.G. Tracey while in Plant Industry Division and D.F.R. Atherton".

Publications

See www.gu.edu.au/ins/collections/webb/traceybib.html for a complete list of Geoff's publications.

New taxa

Noahdendron P.K. Endress, B. Hyland & Tracey, *Bot. Jahrb.* 107: 372 (1985)

Noahdendron nicholasii P.K. Endress, B. Hyland & Tracey, *Bot. Jahrb.* 107: 372 (1985)

Eponymy

Margaritaria dubium-traceyi H.K. Airy Shaw & B. Hyland, *Kew Bull.* 31(2): 356-359 (1976)

Miliusa traceyi L.W. Jessup, *Austrobaileya* 2(5): 522 (1988)

Caesalpinia traceyi L. Pedley, *Austrobaileya* 5(1): 97-102 (1997).

Retirement

Ken Hill retires on 13th August 2004

Leonie Stanberg

National Herbarium of New South Wales

After 21 years at the National Herbarium of New South Wales (NSW), Ken has made the difficult decision to take early retirement due to deteriorating health. He has been suffering from an undiagnosable neurological condition which has been primarily affecting his balance and co-ordination, and also from fibromyalgia.

Ken joined the staff at NSW in 1983 as the research assistant on the eucalypts, after previously working as an exploration geologist. In his relatively short botanical career, Ken has made a very significant contribution to botany, most notably with his eucalypt work in collaboration with Lawrie Johnson, his own work on the systematics, evolution and conservation of *Cycas*, as well as his less widely known botanical informatics work.

Ken is one of those rare people of many broad-ranging skills, knowledge and interests which he

has drawn upon to achieve many exceptional things throughout his career.

He has become an internationally respected botanist whose calibre, value and application of research work has spoken for itself in its praise, acceptance and use by the botanical community. He has played a stellar international ambassadorial role for the Royal Botanic Gardens with his cycad work and also the leading role he has taken in the uptake and development of bioinformatics at the RBG. With his exceptional computing skills combined with his ability to be original and innovative, he took the lead in delivering a number of electronic products that have greatly benefited the staff of the RBG as well as the botanical and general community, notably the Cycad Pages, NSW Flora Online, Type Specimen Catalogue, Eucalypt Pages, WattleWeb and Online Census of NSW



Fig: Ken Hill with *Cycas xipholepis* - *C. tuckeri* intergrade, c. 30 km S of Coen, S of the Stuart River, Cape York, 7 July 1994.

Ph. Leonie Stanberg.

(subsequently developed into PlantNET on <http://plantnet.rbgsyd.nsw.gov.au/>).

As the last resident eucalypt specialist on the staff of NSW, Ken has continued the tradition of expertise in eucalypts that has existed here for over a century. His skill and expertise in the field, travelling extensively in Australia, and in the latter years in the botanically very poorly known Asia/Pacific region in pursuit of *Cycas*, has enabled the discovery of many new species, solved numerous problems of identification and nomenclature and expanded our knowledge of these two groups significantly. His collaborative work in Asia has enabled local botanists there to undertake study not otherwise possible and enhanced herbarium cycad collections in Asia and worldwide.

Ken's expert advice and broad-ranging knowledge has been greatly valued and always given freely to the many of us who have sought his help. He has always been happy to make his time available to answer questions - ranging from eucalypt IDs through to computing problems, and often doing so in a seemingly effortless manner. This generosity continues in his retirement.

A quiet achiever and always modest about his achievements, Ken has spent long hours both at work and home, the results of which are evidenced by his prolific publications and the electronic products he has developed. Also being a fairly quiet person, the way to get to know Ken is to work closely with him. And of course one of the best ways to get to know a botanist is to spend

time with them in the field. Ken has spent varying amounts of time with many of us and I'll leave those of you who have been in the field with him to recall your own stories that you inevitably return with! At NSW he has had the reputation of returning from overseas trips to regale us with bizarre and humorous stories of his experiences.

Ken's love of plants, motorcycles, travelling and his field trips to remote and out of the way places have made for a very interesting life. Ken is also a keen gardener and has been a collector of a diverse range of plants, including cycads, cacti, succulents, orchids, bulbs and sub-tropical plants for much of his life.

In his retirement Ken will be maintaining an honorary association with NSW, working on projects of interest, including a monograph of *Cycas*, finishing other systematic papers, continuing with the electronic flora and also the cycad web site. Ken's contact address, business phone and email will remain unchanged. His other plans include moving to his property at Somersby, about 60 km North of Sydney, where he's working on drought and fire tolerant garden plantings and techniques that are compatible with the Australian environment.

Ken's retirement leaves an enormous gap that is going to be extremely difficult to fill and a loss that will be felt by his colleagues for many years to come. All of us at NSW look forward to Ken's visits here and his continued association as he pursues his varied botanical interests.

News

Position advertised for new national Australian plant census

Council of Heads of Australian Herbaria have taken a leading step towards bringing to reality the vision of a collaborative national census of Australian plants, accounting for different taxonomic views of plant groups, with the advertising of a senior contract position for an experienced taxonomist and nomenclaturist to help coordinate the project of two years. The project has been driven within CHAH by the needs of the Australia's Virtual Herbarium and efficiencies to be gained by collaboration amongst herbaria and specialists, where in the past Censuses have been largely derived independently in each State and Territory.

A major catalyst has been the emergence of a key client for computerised taxonomic data, the Commonwealth Department for Environment and Heritage, with its desire for currency and consistency in the state and national schedules of threatened species, e.g. under the Commonwealth's Environment Protection and Biodiversity Conservation 1999 (EPBC) Act.

An advertisement for the position is provided on p. 20.

Churchill Fellowship to examine European botanical specimens

Amanda Spooner, technical officer with the West Australian Herbarium (PERTH), has been awarded a Churchill Fellowship to examine the pioneer botanical collections of Ludwig Preiss and Robert Brown, in Europe.

The Preiss collection in Lund is of particular significance to Western Australia as it formed the basis for Lehmann's *Plantae Preissianae*, the first flora of Western Australia. Amanda will be locating the type specimens in this collection and cataloguing them with the intention of borrowing them over a long period. PERTH plans to scan and database the types after they are used to check the application of as many names of Western Australian flora as possible. She will also be working with the staff at the Herbarium in Edinburgh to select suitable duplicates of WA taxa from the Robert Brown collection for possible long-term loan to PERTH.

Amanda is currently employed as the Information Co-ordinator for FloraBase and is studying a Master's degree in taxonomy and phylogenetics of *Lambertia* (Proteaceae).

Miscellanea

Appeal for Emergency Heritage Listing: Recherche Bay, Tasmania

Edward Duyker

P.O. Box 20, Sylvania-Southgate, N.S.W., 2224, Australia
E-mail edwardduyker@swiftdsl.com.au. Phone +61 (02) 95227027

³One of the most important localities in the history of Australian botany is now at serious risk of being logged because the Tasmanian Government has decided to afford it only partial protection (a 100 metre coastal strip and a small buffer zone around two key sites). The state government has also given permission for an access road across a neighbouring conservation area. The location in question is the north-east peninsula of Recherche Bay, Tasmania, which has already been nominated by Prof. John Mulvaney for the National Heritage List. It contains a complex of historical sites associated with Bruny d'Entrecasteaux's expedition which

visited the bay in 1792 and 1793. Here the French established an observatory and undertook pioneering geophysical observations which helped prove that the earth's magnetic field intensifies north and south of the equator. The peninsula was also the site of a garden planted by Félix Delahaye and very positive (even joyful) relations with the indigenous people.

Even if the peninsula did not contain the locations of the observatory and the garden, it would deserve immediate protection. The naturalist of d'Entrecasteaux's expedition was Jacques Julien Houton de Labillardière (1755—1834) author of what was in practical terms the first general flora of Australia: *Novae Hollandiae Plantarum Specimen* (1804—1806). It seems incredible that Labillardière's first landfall in Tasmania – where

³ Dr Edward Duyker is author of *Citizen Labillardière* (see review in *Austral.Syst.Bot.Soc.Nsltr* 115) and winner of the 2004 New South Wales Premier's General History Prize.

Council of Heads of Australian Herbaria (CHAH)

Chairman for 2005:

Dr Greg Leach
Department of Infrastructure,
Planning & Environment
Northern Territory Herbarium
PO Box 496
Palmerston NT 0831

Telephone: +61 8 8999 4520
Fax: +61 8 8999 4527
Email: greg.leach@nt.gov.au

POSITION VACANT

Title: Senior Scientist (National Plant Census)
Classification: Professional 3
Program: Biodiversity Conservation
Tenure: 2 year contract
Salary: \$70,607 - \$74,385
Hours: Full time
Location: Australian National Herbarium,
Centre for Plant Biodiversity Research, Canberra ACT

Main Purpose:

The Council of Heads of Australian Herbaria requires an experienced and enthusiastic Senior Scientist with botanical experience to work collaboratively with the Australian herbaria to develop a List of Agreed Australian Vascular Plant Names.

You will use your experience to summarize, interpret and document taxonomic and nomenclatural name changes and taxonomic synonyms in the Australian flora from contemporary research and published literature in order to produce a list of accepted names with synonyms as the national list of plant names.

You will demonstrate your knowledge of biological taxonomic and nomenclatural literature and have proven ability to present information in a simple, easily read form as an on-line interactive internet resource for diverse clients with an interest in botany.

Your role will involve coordinating activities with compilers of the Australian Plant Name Index (APNI), compilers of Commonwealth and State and Territory plant checklists and experts in the field of taxonomic botany.

The successful candidate will be expected to work with biological and nomenclatural databases and to have demonstrated familiarity with relational databases.

You will be employed by the Northern Territory Government as a member of staff of the Darwin Herbarium, and located in the Australian National Herbarium, Canberra.

For further information contact Dr Judy West (02) 6246 5113.

The job description with selection criteria and NT Public Sector Application Cover Sheet may be obtained from Dr West or the address below.

Applicants must obtain and respond to the selection criteria.

Responses to the selection criteria accompanied by a CV and the NTPS cover sheet, must be received by **close of business on 21 January 2005**.

Email or post to: RecruitmentPalmerston.DCIS@nt.gov.au

The Recruitment Officer
Department of Infrastructure, Planning & Environment
Department of Corporate and Information Services
PO BOX 1900
Palmerston NT 0831



he conducted his very first botanical work in Australia – should be threatened with logging. This is the likely source of many 'type' specimens now held in herbaria in Paris, Geneva and Florence. DNA analysis in this field is still in its infancy. We will do a great disservice to world science if we do not protect this area and the source of these specimens. We know that Labillardière did not simply hug the coast of the peninsula when he undertook his collecting.

It is simply unacceptable to gut the interior of this narrow peninsula and leave a façade of trees on the coast. Much of its scientific significance will be destroyed and the rest will become vulnerable to erosion and weed infestation. Although selectively logged in the nineteenth and early-twentieth centuries, the peninsula is covered in a

diverse, highly integrated and essentially intact flora (and fauna).

December 2004 is the 200th anniversary of the publication of the first part of Labillardière's *Novae Hollandiae plantarum specimen*. Very many of the 265 copper plate engravings in Labillardière's book (plus additional engravings in his *Relation* published four years earlier) must have been based on plants collected on the north-east peninsula of Recherche Bay. We must not commemorate the bicentenary of Labillardière's book by allowing the logging of his landfall. Please write to the National Heritage Council (GPO Box 787, Canberra, ACT, 2601) and request emergency protection for this important site in the history of Australian botany!

Celebrating the botanical art of Louisa Anne Meredith

Andrew Rozefelds

Tasmanian Museum and Art Gallery

Louisa Anne Meredith, miniaturist, engraver, watercolourist, poet, writer and botanist was one of the most highly regarded female artists of colonial Australia. No mere 'dilettante', she worked professionally for most of her life and contributed significantly to the literary, artistic and scientific life of Tasmania.

Born Louisa Anne Twamley on 20 July 1812 in Birmingham, England, she showed great talent at an early age, even receiving tuition in the painting of miniature portraits from Sir Thomas Lawrence (President of the Royal Academy). By her 'twenties', she was supporting herself with her writing and her illustrated books and was mixing with literary and artistic circles of the time. But after marriage to her cousin Charles Meredith in 1839, she traveled with him, first to New South Wales, then in 1840, to Tasmania where they initially set up home near Swanport on the East Coast.

Although thinking this colonial life only temporary, she was never to return to England. Instead she coped not only with the usual rigours of a pioneering housewife but also suffered an unsettled and financially insecure existence, with her husband no true farmer or businessman. He did, at one time, become Colonial Treasurer in the Tasmanian Parliament but Louisa contributed in a major way to the family income with her writing and painting. Books such as *Notes and Sketches of New South Wales during a residence in that Colony from 1839 to 1844* (London 1852), *My Home in Tasmania during a residence of Nine Years* (London 1852) and *Over the Straits: A*

Visit to Victoria (London 1861) enhanced her reputation, while *Some of My Bush Friends in Tasmania* (1860) and *Bush Friends in Tasmania* (1861) were particularly well received. She also won prizes and medals in several Australian and overseas exhibitions.

Towards the end of her life, illness and money difficulties took their toll and she was forced to sell her personal collection of paintings and drawings. Fortunately public subscription placed them in the collection of the Royal Society of Tasmania, at which time she was granted a Tasmanian Government pension of 100 pounds a year in recognition of her outstanding services to sciences and literature. She died in Melbourne on 21 October 1895.

The Royal Society is celebrating the life of Louisa Anne Meredith with a selection of 13 watercolours from its collection that are reproduced in the 2005 Calendar (Fig. 1). Best known for her flower studies, the paintings in this calendar demonstrate very clearly the fine balance between her appreciation of the aesthetic demands of her watercolour medium and her meticulous eye for botanical detail.

The calendar is available from the Royal Society of Tasmania, GPO Box 1166, Hobart, Tasmania, 7001 (telephone: 03 6211 4177). The Society is grateful for the ongoing support of the State Government and the University of Tasmania, but to expand our public lecture programmes, our research initiatives and our scheme for bursaries and other awards for excellence at school and

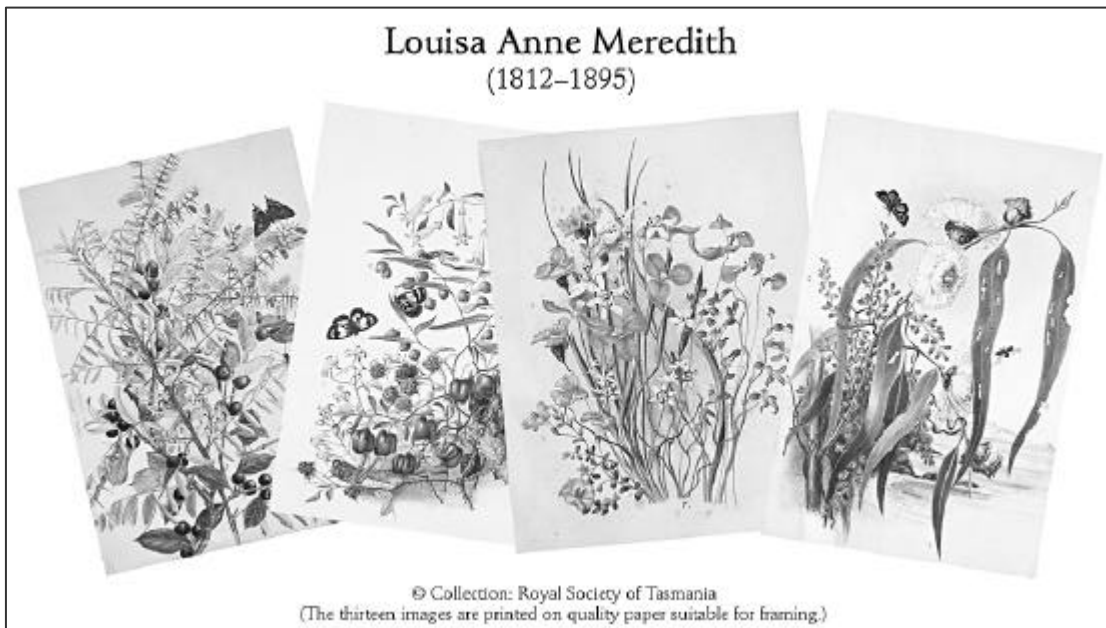


Fig. 1. A collage of four of Louisa Anne Meredith's paintings that are reproduced in the calendar.

university we would appreciate your support. The calendar would make an elegant addition to any wall - home, office or herbarium.

The cost/calendar is \$20, which includes postage and handling; and special discounts of 10% are offered for five or more calendars. Unfortunately we cannot accept credit card orders.

ABRS Report

Staffing news

Everyone at ABRS was very sad to say farewell to Katy Mallett, who left us in early November to seek new challenges and experiences within the National Reserve System Section of the Department. Katy is now working on the National Hotspots Program. We know she will be a great asset to that team.

During her 12 years at ABRS, Katy assisted with editing many volumes of the *Flora of Australia* series; she was the volume editor for the grasses in the *Flora of Australia* series (two volumes published to date); the volume editor for the introductory volumes of the *Fungi of Australia* series; produced the educational ABRS poster series on grasses and managed the production of the AusGrass CDROM. Katy has also been an active member of the Australian Systematic Botany Society and Ecological Society of Australia.

Applications have now closed for the vacancy left by Katy's departure. It is expected that an appointment will be made in the new year.

ABLO

Mr Alex George recently commenced appointment as the Australian Botanical Liaison Officer at Kew. Alex will hold the position until the end of August 2005.

Annette Wilson has returned, much enriched from her experience as ABLO, to her position at ABRS managing the Vascular Flora Subprogram.

New publications

Australian Psylloidea Jumping Plantlice and Lerp Insects by D.Hollis (2004)
A5, softcover, spiral bound, xvi + 216 pages.
ISBN 0 642 56836 7

Damage from heavy lerp infestations on eucalypts is a familiar sight to most urban Australians, but few are aware of the insects causing this damage or their life cycles. Did you know, too, that the exquisitely shaped, tiny sugary lerps covering some of the insects were collected by aborigines for food? Today. However, psylloid insects are of special interest as pests and potential biocontrol agents in

agriculture, horticulture and forestry. Thus, they are of concern to quarantine and biosecurity in Australia and elsewhere, as well as to natural resource managers.

This book discusses psyllid biology and gives a key to genera, comprehensive information on host plants and natural enemies, looks at economic significance, and gives a full listing of Australian species and their broad distributions. It sets the scene for further much-needed research on the group and, containing beautiful illustrations, is a valuable handbook for professionals, amateurs and students.

Flora of Australia Volume 44B Poaceae 3
by various authors. B5, xxviii + 486 pages.
ISBN 0 643 09056 8 (hardcover),
ISBN 0 643 09057 6 (softcover)

The second in a projected set of four volumes by ABRS on the grasses of Australia is expected to be published in January 2005. Volume 44B of the *Flora of Australia* documents five subfamilies of the grass family (the Poaceae), comprising 55 genera and 468 species.

The largest subfamily in the volume, the Chloridoideae, is largely tropical, and includes the important endemic genera *Triodia* (Spinifex, symbolic of central Australia) and *Astrebula* (the Mitchell Grasses), the large genera *Eragrostis* (Lovegrasses) and *Sporobolus* (Ratstail Grasses) and *Chloris* and relatives (Windmill Grasses).

The Arundinoideae include the aquatic *Arundo* and *Phragmites* (Reeds), and the endemic *Amphipogon* (Greybeard Grasses). The Danthonioideae incorporate the temperate Wallaby Grasses. Most of the representatives of the other two subfamilies are found predominantly in the drier areas of Australia: the Aristidoideae, comprising the large genus *Aristida* (Kerosine Grasses, Three-awns); and the largely endemic Micraioideae, which includes *Eriachne* (Wanderrie Grasses), and the unique *Micraira*, which are resurrection plants (returning to life from complete air-dryness), and the only grasses whose leaves grow in spirals on the stem.

Forty-eight authors, illustrators, and photographers contributed to this volume. There are 83 plates of line drawings and 64 colour photographs, illustrating nearly every genus to help readers appreciate the beauty and variety of Australian grasses.

Antarctic Marine Protists.

Edited by Fiona J. Scott & Harvey J. Marchant.
Published by Australian Biological Resources Study, Canberra and Australian Antarctic Division, Hobart (January 2005)
viii + 563 pages, ISBN 0 642 56835 9
(hardcover) Price AU \$95.00 (includes surface postage for overseas orders, and GST and postage within Australia).
To order, contact abrs@deh.gov.au

Protists are microscopic algae and protozoa, formerly thought of as single-celled plants and animals. Planktonic protists constitute the base of marine food webs and play a key role in the exchange of carbon dioxide between the atmosphere and the ocean. This book is a comprehensive guide to the protists living in the surface waters and sea-ice south of the Antarctic Polar Front. More than 550 species are described and superbly illustrated with over 1300 light and electron micrographs and drawings. A bibliography of more than 1100 entries and a thorough glossary will make Antarctic Marine Protists an indispensable resource for marine biologists.

Biologue No. 29, Oct 2004

Biologue is an annual newsletter providing information on the progress of the ABRS participatory program, and other ABRS activities. It contains information on research grants, contracts, software and publications. It is available online or can be downloaded in word, or PDF formats. Back issues can be obtained by contacting abrs@deh.gov.au.

You can subscribe to this free publication by contacting the Business Manager at ABRS via email: abrs@deh.gov.au, by telephone on (02) 6250 9554 or (02) 6250 9556 or by faxing your details to (02) 6250 9555.

Mary Colreavy

ABLO report

Well, my time at Kew is over. In fact, I am writing this at my desk at ABRS in Canberra, having returned to Australia on November 22. By the time this newsletter is printed Alex George will be well settled in to H21, the ABLO's room, and I wish him all the best in his return to Kew.

The ABLO is a highly valued member of the herbarium at Kew, and throughout the year many of the staff told me how much they appreciate the work of successive ABLOs, and the commitment of the Australian botanical community that the position represents. Several other European herbaria, especially TCD and P, also work hard to

maintain contact with successive ABLOs, and told me how important they considered the post and the contributions of individual ABLOs. We in Australia should not underestimate the role the ABLO plays in Britain and Europe in representing Australian botanical and environmental interests.

The final two months at Kew since my last report were fairly frantic as, like every departing ABLO I expect, I hurried to finish all the things I started, and the things I said I would do, as well as attending to the queries which continued to arrive. Queries to the ABLO ranged from trivial to fascinating, when the search for information showed me an entirely new aspect of Australian botany. September brought one of those exceptional enquiries which every ABLO hopes for - in this case a London art historian asked for help identifying the species depicted in a collection of botanical watercolour studies, painted in Sydney in about 1792. It was a pleasure and a privilege to work with such interesting early Australian artwork.

After I officially finished my time as ABLO at the end of October, I spent another week at Kew before we headed off into the countryside, first to Wales to look at castles, then to southern Scotland, where we walked on the banks of Loch Lomond before heading to Edinburgh where I visited the herbarium. I found the Australian material in Edinburgh interesting, as much for what was not there, as for what was. For instance, there is only an incomplete set of Drummond collections, and some miscellaneous Sieber material which is not part of his New Holland set. I think it is well-known by now that there is a good set of R. Brown specimens (including some by Bauer and Caley), as well as a scattering of collections by Banks and Solander, as well as some early French collections. There are also many collections by Alexander Morrison, dating back to the 1870s, but unfortunately none of them are numbered. Edinburgh is a good place to look for types if expected collections are not found at BM.

Kew news

Work has started on the new Alpine House, at the end of the rock garden. Work on the Jodrell extension has been delayed, and nothing had been done by the time I left. Plans for the new herbarium wing have now been drawn up, and shown to staff for comment. Building might start next year, but it is more likely to be in 2006. Access to the collections and library may be restricted once the building is complete, while they reshuffle all the specimens, but for now it's business as usual.

People

Melinda Trudgen, from Perth, is working as a volunteer in the herbarium on Friday afternoons, helping to scan types of Australian species. Brian Stannard retired on October 15, with a standing-room-only farewell lunch. The following week he was back at work, part-time, to oversee the planning for the herbarium extension. Steve Renvoize, who retired on November 8 after 41 years at Kew, has no immediate plans to return to work and intends to enjoy his retirement!

The Indian Botanical Liaison Officer, Dr Lakshminarasimhan, also officially completed his term at Kew, on November 8. His replacement has not yet been appointed, so Kew will be without an IBLO for the next few months at least.

Visitors

There have been several Australian visitors to Kew in the last two months. Paul Rymer from RBG Sydney, Matthew MacDonald of UNE, Juergen Kellermann from MEL and John Thomson, from NSW, all visited in September; Pam Catcheside from Adelaide and Jim Mitchell from Greening Australia visited in October.

Weather

Autumn produced a blaze of colour around the gardens, and the annual events with a harvest theme, including an Apple festival, a display of pumpkins and squashes piled up in the waterlily house, and a scattering of scarecrows and hay bales at the main gate. October and November were quite mild, and November apparently was one of the driest on record, so we were not too often rained on in our final travels, but to make sure we remembered our final few days in England, two days before we flew back home, it snowed!

Farewell

I thoroughly enjoyed my time at Kew, and found it a very valuable experience in many ways. Working in such a large herbarium enables day-to-day contact with specialists in a wide range of plant groups and geographical regions. Kew's international focus also provides opportunities to observe or interact with global and regional organisations (UN agencies etc) which are rarely available in Australia. Then there is the library - it would be easy to spend every day there - and of course the visits to the Natural History Museum (BM) and other British and European herbaria. I encourage anyone whose circumstances allow it to apply for this posting. It is the experience of a lifetime.

Annette Wilson

Book reviews

Declared Plants of Australia

Review by Robyn Barker

State Herbarium of South Australia

Declared Plants of Australia. An identification and information system. By Sheldon Navie (2004). Centre for Biological Information Technology. The University of Queensland, Brisbane. ISBN 186499785-0. Cost: Aus \$80 Available via: enquiries@cbit.uq.edu.au

Another Lucid product, *Declared Plants of Australia* surrounds a remarkably powerful key to 932 weed species separated by 37 characters. In this case 333 of the species are Declared Plants in at least one state of Australia, while the other 599 weeds are potential members of this list.

Those species which are declared have an extensive fact sheet showing multiple images of the plant, and incorporating a description, distribution map, how to tell the species apart from similar species, legislation and management information and references to further information. One particularly useful aspect here is the inclusion in the images of a photo of most of the plants at seedling stage.

Those plants that are not declared or noxious have a brief statement as to their status in Australia, usually accompanied by some images. Unlike the species with fact sheets, which can be accessed independently of the key, the information associated with these species can only be found through the key, meaning it is not quite so accessible to the user.

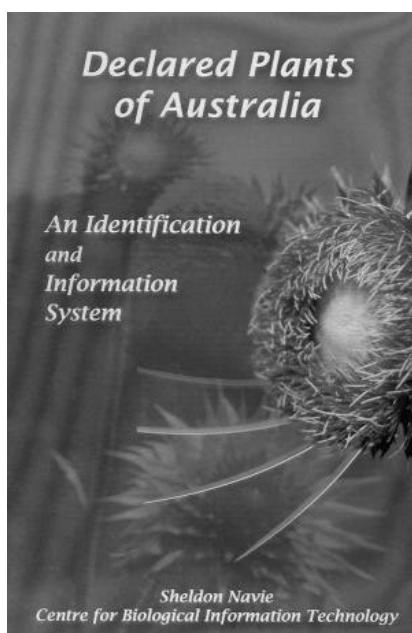
The grasses are always a problem in keys that rely heavily on floral structure, but in this case the 115 species are disposed of in five specially identified questions. Although those five questions do not always get you to a single species it does get you to two or three of the total.

There is one odd aspect to the key. Expert, Intermediate and Novice sets of characters seem superfluous. The total number of characters is 37 – if you choose the expert set, 36 of these are turned on (only the Noxious State is turned off), and if you choose the Intermediate set (default state) 35 characters are turned on. The difference between the Expert and Intermediate set is the knowledge of which family a plant might belong to. The Novice set uses only 28 characters, removing flower and fruit type characters as options along with the five grass characters.

The key appears to work well. The limited number of species tried all came down to the correct group e.g. *Cotoneaster pannosus* to the six species of *Cotoneaster* treated in the key and *Cestrum parqui* to its desired end. There is possibly a little too much reliance on state distribution as a character in a tool such as this, where lack of a previous distribution in a state may lead to a wrong determination. Distribution maps, by the way, appear to have been based on maps from the Australia's Virtual

Herbarium since there is a reference to the AVH in each of the reference lists – it would have been nice to have seen this acknowledged on the map!

My only problem with the tool, apart from the usual one of not knowing whether what you have in your hand belongs in the set being tested, is the very limited acknowledgement of native species in the same genus. There is a section in the fact sheet listing species with which each species may be confused, but this is mostly to species that are included in the tool and not necessarily to native species with which they could easily be confused. A case in point is the treatment of *Striga* species; while it is acknowledged that there are three native species there is no attempt to say how these differ from three other species that to this time have never been recorded from Australia.



Will we have the weeding out of native *Striga* species since they look so very similar to those depicted in the tool?

That aside, it's a great bit of work and will be a decided asset to anyone identifying weeds,

anyone wanting information about them in their own state or within Australia or for just browsing. The legislation section makes for fascinating reading in its revelation of the different attitudes to the same species in each state!

Botanical collecting after Maralinga

Review by Robyn Barker

State Herbarium of South Australia

Ten Years On – In the shadow of the mushroom cloud. An expedition to the Atomic Testing area of Emu/Maralinga in South Australia 1967. By Dennis K. Scoles (2003). (*Books of Oceania, 10 Vine Street, Whangarei, New Zealand*).

An account of a collecting trip with Noel Lothian and Roy Haskett of the Adelaide Botanic Gardens by a newly graduated New Zealand Horticulture student in 1967. In three parts, the first covering the atomic tests, the second a narrative of the collecting trip and the third an account of the cleanup.

The account covers Lothian's collections numbered 3757 to 4052 (Haskett and Scoles are not mentioned in the collectors books held in AD) between 25th May and 4th June. All locality details on specimens in AD are given as distances

from one of 5 places – Emu, Tallinga Well, Mabel Creek HS, Maralinga or Dingo Clay Pan. It is possible that extra information about the collections may be able to be gleaned from the recollections produced here, since the author was clearly involved in the collection of the specimens. Haskett's role was more as cook and camp organiser.

The narrative, published by the author, is enclosed in a basic plastic cover, has unnumbered pages, many spelling errors and many fairly ordinary black and white photographs of the area and vegetation (some of these were apparently reproduced in the South Australian country newspaper, *The Chronicle*, on 3rd August 1967). While a naive account, it has sections of interest and offers some insight to collecting in the '60s from a botanical gardens' perspective.

Book notices

A book on herbarium procedures

Herbarium essentials: the southern African herbarium user manual. By J.E. Victor, M. Koekemoer, L Fish, S.J. Smithies & M. Mössmer (2004). *Southern African Botanical Diversity Network Report No. 25. SABONET, Pretoria.* Published by: The Project Coordinator, Southern African Botanical Diversity Network, C/- National Botanical Institute, Private Bag X101, Pretoria 0001 SOUTH AFRICA or email: sabonetpub@nbi.ac.za

A great introduction to herbaria and their functions, this book contains comprehensive chapters, copiously illustrated and each with an appropriate quote. There is one chapter on the different sorts of herbarium collections (types, wood, carpological, spirit, fungal, fossil etc.), one on the collection of plants (including permits, vehicle equipment, collection equipment, map reading) on pressing and drying (includes succulents, bulbs, bulky specimens, aquatics), on mounting specimens, on the curation of

specimens (storing, labelling, filing, handling, loans), herbarium pests (prevention, monitoring, treatment) on scientific curation (nomenclature, identification, literature and revisions) and a final chapter on starting a new herbarium.

Robyn Barker

Reduced price for Monocots2 Proceedings

The proceedings of the Monocots2 conference held in Sydney in 1998 were published (in 2000 by CSIRO) in two volumes: one on Monocots generally and the other on Grasses. They include many papers on the classification and characters of monocot groups and are a useful reference source for monocots. The Committee has a few sets available at the reduced price of A\$150 for the set with postage included, or A\$100 for those able to collect it in person.

Contact Karen Wilson at the Royal Botanic Gardens Sydney (karen.wilson@rbgsyd.nsw.gov.au; phone 02-8231 8137).

Taxonomic Literature now available as TL-2 Online

TL2 is now available on line, thanks to a decision by IDC Publishers with the support of International Association for Plant Taxonomy (IAPT). **TL-2 Online**, the online edition of *Taxonomic Literature*, 2nd edition (TL-2) allows browsing, including full-text and other search capability, of all 7 volumes and 6 supplements. Members of IAPT get free access at the site address (Web ref. 1).

The web site provides the following summary of this indispensable work:

TL-2 is the standard reference work for plant taxonomic literature from Linnean times to 1940. In the field of plant taxonomy, detailed information of particular publication dates is often critical in deciding matters of nomenclatural priority. With the many complexities of botanical and plant taxonomic publications that often were published in parts over periods of months if not years or decades, providing these bibliographic and publication data was a formidable task.

It took Frans A. Stafleu (1921-1997) and Richard S. Cowan (1921-1997) fourteen years (from 1973 to 1988) to compile the original seven volumes and later Frans Stafleu and Erik Mennega (1923-1998) six years to add six supplements to the series.

Many of the works that were analyzed in TL-2 are available in microform and reprint editions from IDC publishers and can be ordered directly from the website.

Web ref. 1. <http://tl2.idcpublishers.info>

Publication of BPH-2

BPH-2: Periodicals with Botanical Content; Constituting a Second Edition of Botanico-Periodicum-Huntianum. G.D.R. Bridson (compiler), S.T. Townsend (editor), E.A. Polen (editor), E.R. Smith (editorial assistant) (2004). Hunt Institute for Botanical Documentation, Carnegie Mellon University, Pittsburgh. Vol. 1 pp xx, 1-819; vol. 2 pp [iii], 821-1470.

Price \$US130.00 plus postage, available at <http://huntbot.andrew.cmu.edu/HIBD/Publications/HI-Pubs/Pub-BPH-2.shtml>

As the size indicates, this is a large increase over the first edition and supplement - over 33,000 title entries and over 8,000 cross-references for alternative forms of these titles. The first edition included about 12,000 titles. The coverage is also wider: titles from 1665 to 2000 'that regularly contain (or, in some period of their history, included) articles dealing with the plant sciences, their history and bibliography. These include medical usage, biotechnology, environmental science etc. Journals that are electronic only are included but not specifically marked. There is a very useful list of references in vol. 1, pp xi-xiv. Note that the abbreviation BPH has now lost its hyphens.

Alex George
Australian Botanical Liaison Officer

Major revision: *Aporosa* (Euphorbiaceae)

Schot, A.M. (2004). *Systematics of Aporosa (Euphorbiaceae)*. *Blumea Suppl. 17: 1-381*.

The editors have received this exemplary monograph of the Asian tree genus, *Aporosa*. The work is in the customary format with the first part covering morphological features, both macro and micro, the second part the phylogeny of the genus and the third part the taxonomic revision. As a result of the phylogenetic analysis a new infrageneric classification has been recognised.

The 82 species covered (as well as seven insufficiently known taxa) are defined by unique combinations of characters rather than unique characters. For this reason the provision of six regional keys may well be appreciated by users. A synoptic key to all species is provided.

The work provides the basis for the Flora Malesiana treatment of the genus as well as treatments for other adjacent countries from south China and India through to peninsula Malaysia. An impressive work.

If I could remember the names of all these particles I'd be a botanist.

Albert Einstein

Science, Philosophy and Religion: a Symposium (ch. 13)

In science the credit goes to the man who convinces the world, not to the man to whom the idea first occurs

Francis Darwin

Source unknown

Coming conferences

ScienceAlert – a new web site for scientific events

A comprehensive site for Australasian scientific conferences and events ScienceAlert (Web ref. 1) enables you to add your own conferences, workshops, public lectures and events for no charge and you are also encouraged to link to this calendar from your own site.

ScienceAlert also carries topical news items and feature articles from leading scientific research organizations as an information service to science, industry, the media, government and the community. There is no charge for its use, reproduction, or linking; nor is registration required. ScienceAlert is provided on a not-for-profit basis by Julian Cribb & Associates, consultants in science communication.

Web ref. 1. www.sciencealert.com.au/events.htm

The Third National Fungimap Conference April 29th – May 2nd 2005

Venue for these popular events is at Gowrie Park, Tasmania, which is near Devonport and a little to the north-east of Cradle Mountain. The theme of the conference is History, Ecology and Conservation. Fungimap conferences are a great opportunity to find fungi and learn about them in a very informal and relaxed, although structured, manner.

For more information contact Cassia Read, Fungimap Coordinator, fungimap@rbg.vic.gov.au or Sarah Lloyd, the Tasmanian organiser, sarahlloyd@primus.com.au

Pam Catcheside
State Herbarium of South Australia

International Botanical Congress

The latest circulated email from organisers directs attendees to important issues on the upcoming 17th International Botanical Congress to be held 17th–23rd July 2005 in Vienna, Austria (with nomenclature sessions on 12th – 16th July). The following online services are available from the congress website (Web ref. 1):

The Second Circular containing the preliminary program and other information

- Abstract submission (deadline 31 January 2005)
- Registration (deadline for reduced fee 15 April 2005)
- Accommodation
- The updated Program
- General & additional information

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Secretary-General, IBC 2005
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Web ref. 1. www.ibc2005.ac.at

Australian Systematic Biologists and Australian Entomological Society joint Annual Meetings

On behalf of the organising committees and The Australian National University, we extend a warm invitation to you to attend the Australian Entomological Society's 36th AGM and Scientific Conference/7th Invertebrate Biodiversity and Conservation Conference/Society of Australian Systematic Biologists in Canberra, Australia, on 4th – 9th December 2005.

Information and registration of interest is available (Web ref. 1).

Ideas for symposia for the conference are needed. These will be ranked in February 2005.

David Yeates (CSIRO)
Email: David.Yeates@csiro.au

Web ref. 1. www.invertebrates2005.com

Native Grasses Association Conference

The Fourth National Native Grasses Conference will be held at Burra in South Australia, 11-13 October 2005. It is being organised by the Stipa Native Grasses Association in conjunction with the Native Grass Resources Group, Mid North Grasslands Working Group (SA) and Central West Conservation Farmers Association (NSW).

Expressions of interest to present poster or spoken presentations are now being invited.

Presentations should fit one of the seven themes of the conference:

1. Where we've come from (Environmental histories of grassy landscapes)
2. Where we are now (Current issues, including innovative approaches to managing grassy landscapes)
3. Healthy landscapes – healthy profits (Making a quid out of grassy landscapes while at the same time maintaining or enhancing their health)
4. Healthy landscapes – healthy biodiversity (An exploration of biodiversity in grassy landscapes and the factors that affect it)
5. Establishing native grasses (Latest information on producing and collecting native grass seed and using it to establish native grasses)
6. Healthy soils - pastures and crops (Soil health and how it is affected by 'pasture cropping' [i.e. sowing crops directly into pastures] and grazing)
7. The burning issue (The pros and cons of various burning regimes in grassy landscapes).

Email your draft abstract (no more than 300 words) - indicating the appropriate theme - to bill.semple@dipnr.nsw.gov.au by 31st May 2005 and preferably earlier. If you want your presentation to be considered for the limited number of slots available for spoken presentations, your abstract is required by 1st March 2005.

Contact: Christine McCrae
Email: cmcrae@hwy.com.au
Ph. (02) 63737628

Items from Taxacom list server

Old books on the Missouri Botanical Garden Library site

Another seven rare books from the Missouri Botanical Garden Library have been made available online (Web ref. 1). There are now 77 volumes by 27 authors with more than 3,300 illustrations.

Peter Schöffer's "Herbarius," a work on medicinal plants, published circa 1480, is the oldest. Other books to be included are ones by Delessert (1773-1847), James Edward Smith (1759-1828), Nicolas Jacquin (1727-1817) and Humboldt (1759-1869). The recent additions include a herbal (1737 -1739), containing five hundred images, by Elizabeth Blackwell (1700-1758), John Lindley's *Sertum orchidaceum: a wreath of the most beautiful orchidaceous flowers* (1838) and Pohl's *Plantarum brasiliae* (1827-31).

Web ref. 1. <http://ridgwaydb.mobot.org/mobot/rarebooks>

Collaborative funding opportunity

The U.S. National Science Foundation is offering new program funding through their "Partnerships for International Research and Education" (Web ref. 1).

Partnerships for International Research and Education awards will enable U.S. institutions to develop longer-term, collaborative international research and education programs with foreign partners. Successful proposals will describe

science and engineering research projects that are based on integrated and synergistic international collaborations, and will explain how the complementary strengths of the collaborating institutions will be used to enable and sustain a longer-term program.

These partnerships will enable U.S. institutions to establish collaborative relationships with foreign groups or institutions in order to advance specific research and education objectives and to make possible a research effort that neither side could accomplish on its own.

The program is intended to catalyze a cultural change in U.S. institutions by establishing innovative new models for international collaborative research and education. It is also intended to facilitate greater diversity in student participation and preparation, and to contribute to the development of a diverse, globally-engaged, science and engineering workforce.

Deadline is March 10, 2005.

Web ref. 1. www.nsf.gov/pubs/2005/nsf05533/nsf05533.pdf.

International Society for Phylogenetic Nomenclature (ISPN)

The International Society for Phylogenetic Nomenclature (ISPN) is a newly formed organization the purpose of which is to encourage and facilitate the development, codification, and utilization of phylogenetic nomenclature.

Phylogenetic nomenclature is, in short, the theory and practice of naming groups of organisms and applying existing names to such groups in the context of newly proposed phylogenetic hypotheses using principles and methods derived from the fundamental principle of common descent. The ISPN (in particular, its Committee on Phylogenetic Nomenclature) will be responsible for ratifying and overseeing future changes in the PhyloCode, a codified set of principles and rules of phylogenetic nomenclature. The ISPN was inaugurated and met for the first time in July 2004 in Paris, France. The Society is open to all persons interested in phylogenetic nomenclature and is now accepting members. A membership form can be downloaded from the PhyloCode/ISPN websites (Web refs. 1, 2) at The Council of the ISPN would like to encourage all interested persons to join the Society.

Kevin de Queiroz
President, ISPN

Web ref. 1. www.ohiou.edu/phylocode
Web ref. 2. www.phylocode.org.

SLIKS - a new free interactive keying program

SLIKS is a new interactive keying program that I wrote to fill in some of the gaps in the portability and accessibility of the current software that is out there. Although SLIKS (Stinger's Lightweight Interactive Key Software) does have its own very simple data format and only uses multistate (incl. binary) characters, it is truly free and runs on most machines in most browsers without plugins or special installations. Demonstration files and a copy of the software can be downloaded (Web ref. 1).

Stinger Guala
stinger@stingersplace.com

Web ref. 1. www.stingersplace.com/SLIKS/

Herbarium of University of Zürich online

More than 13,000 botanical types held by the Herbarium of University of Zürich (Z, ZT) are now accessible on-line (Web ref. 1). The types can also be accessed through the GBIF portal.

The focus of this collection is New Caledonia (823 Angiosperm types) and South Africa (2083 Angiosperm types), with the possibility of the

finding of types lost during the World War II destructions in Berlin.

A search for Australian type collections brought up 102 Angiosperm type specimens with collectors ranging from Mueller, Pritzel, Preiss, Hochreutiner and Sieber to Cleland, Maslin and Coveny.

Web ref. 1. www.zuerich-herbarien.unizh.ch

An online interactive key project for bryophytes

A new initiative in developing online interactive keys for bryophytes is a collaborative effort between Discover Life (Web ref. 1) and The Field Museum. If interested in this project or if you have any questions contact Matt Konrat. He will very happy to help coordinate this effort. Importantly, participants can retain total control of their own keys, thus allowing you to update any aspect of your online key, or many of the other features offered at Discover Life site.

Features at Discover Life associated with the keys include:

- species checklists;
- construction of simple species pages with images, distribution, phylogeny, references etc.;
- interactive maps;
- an automatic link to TROPICOS moss database MOST at Missouri Botanical Gardens (Current information on bryophyte names); and
- links can be made to other URL's or species pages that have already been developed.

Two keys presently under construction include: *Frullania* Species Worldwide and Liverwort Genera of the World.

The key to all the species of *Frullania* being developed is currently functional for New Zealand, Australia (Tasmania), U.S.A., Japan, New Caledonia, Great Britain and Ireland, South Africa, Portugal and Macronesia, and the Falkland Islands (Web ref. 2).

Matt von Konrat, Ph.D.
Collections Manager
(Bryophytes & Pteridophytes)
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Web ref. 1. www.discoverlife.org
Web ref. 2. <http://pick4.pick.uga.edu/mp/20q?guide=Liverworts>

ASBS Publications

History of Systematic Botany in Australia

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

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

Systematic Status of Large Flowering Plant Genera

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

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

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:

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ASBS Sales
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GPO Box 787
CANBERRA, ACT 2601, Australia

Contact details: Ph. 02 6250 9445; Fax 02 6250 9448 ; Email: helen.thompson@deh.gov.au

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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SYDNEY, NSW 2000
Tel: (02) 92318131

Contacting Major Australian Herbaria and Systematics Institutions

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) Alex George 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.

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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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