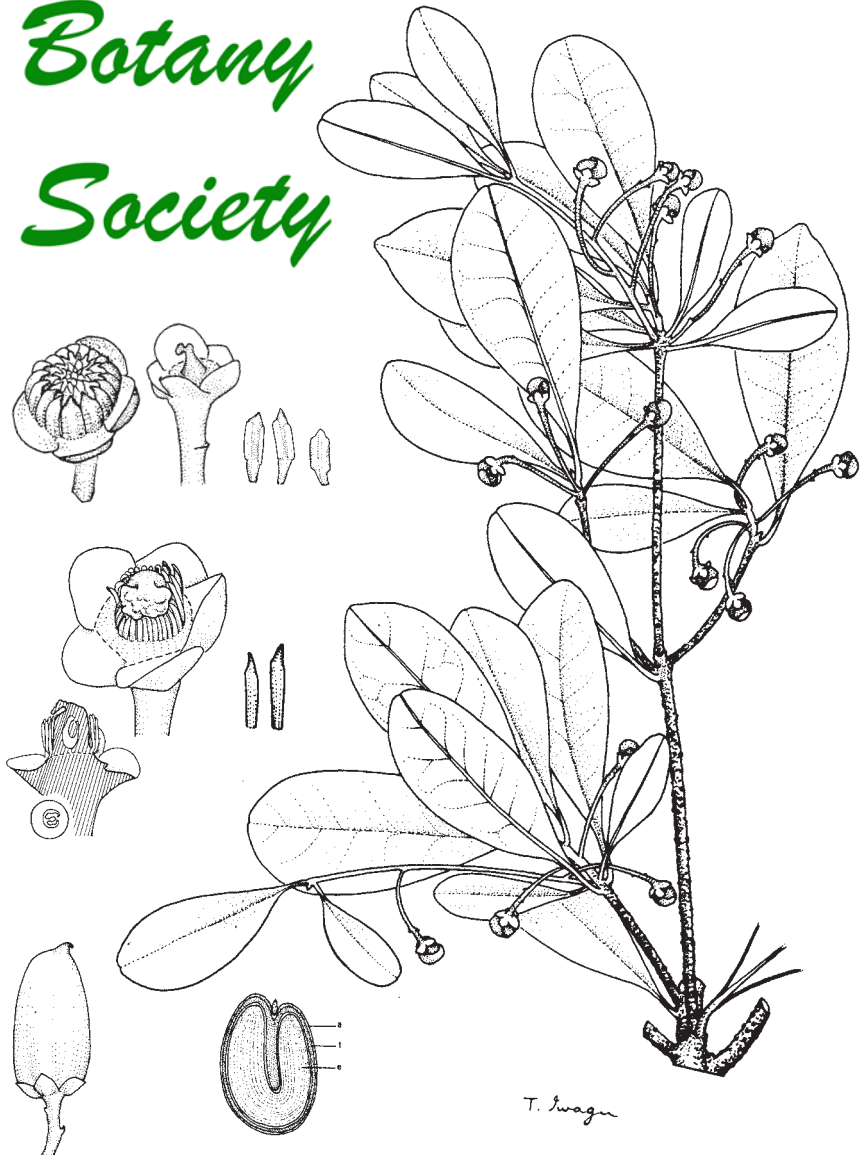


ASBS

*Australasian
Systematic
Botany
Society*



Newsletter

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AUSTRALASIAN SYSTEMATIC BOTANY SOCIETY INCORPORATED

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Hansjörg Eichler Research Committee

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Betsy Jackes
Greg Leach
Nathalie Nagalingum
Christopher Quinn
Chair: Mike Bayly, Vice President

Grant application closing dates:

Hansjörg Eichler Research Fund:
on March 14th and September 14th each year.
Australian Conservation Taxonomy Award:
on March 14th 2013

Affiliate Society

Papua New Guinea Botanical Society

ASBS Website

www.anbg.gov.au/asbs
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Cover image: *Ternstroemia monostigma* W.R.Barker
(Pentaphragmaceae), a New Guinea endemic. Male
and female flowers and parts, fruit, seed in section.
Artist Taikika Iwagu. With permission of
the National Herbarium of Papua New Guinea.

Publication dates of previous issue

Australas. Syst. Bot. Soc. Newslett. 152 (September 2012 issue)

ASBS Web site: 7th December 2012

From the President

As your new President, I follow a long line of very effective predecessors. Working with an experienced and committed Council I hope we can make a significant contribution to the ongoing development of the Society. We gratefully acknowledge the achievements of the last Council and its subcommittees (research and conference committees, editorial team) which provide the launching pad for our work.

Concerns for the current state of Australasian plant systematics

At the annual ASBS conference in Perth last year, addressed below, job losses in recent times in Adelaide, the Northern Territory and Queensland were the subject of much concern for members, not just from the State's most affected. Kevin Thiele introduced the conference, marvelling at the achievements in infrastructure of Australasian and global systematics. At our AGM Peter Weston contrasted this with the loss of positions and dependence of much of our basic science on external funds (see his President's reports on p. 9 and the last Newsletter). And David Mabberley questioned the sustainable future of Australasian plant systematics in his keynote opener to the conference (see p. 32). He suggested that an independent international review, along the lines of reviews of systematics in the United Kingdom, may be a course to follow in our region, though the situation was more complicated owing to the many governments involved and the need to find a way of championing the cause in each of these jurisdictions.

For my part I had expressed my own concerns earlier in the year when approached to be President of the Society. I thought that, while ASBS had been an undoubtedly successful society, well-organised and active through its now almost 40 years, it had been passive by and large with respect to the difficulties experienced by systematists in herbaria and universities in sustaining the mission to improve and document taxonomic knowledge of our plants. Was it not time ASBS tackled this? Was I up to it? I was encouraged to take it on. After all, I was informed, as a 'retiree' I could fearlessly engage! My response was: it needed more than

one person to improve the situation. A hand grenade thrown on odd opportunities does not win a war – and it can create more problems than it solves.

But what prompted my nominator's point about a retiree is true: those running herbaria, and the rest of us engaged in other key roles, naturally, and strategically, pale at 'outing' such concerns. I would work through the 'right' administrative channels, adopting the requisite positive approach. Did it do much good? Maybe at best it slowed rather than stemmed the erosion of taxonomic advancement. From a high of seven full-time practicing alpha-taxonomist positions in 1986 AD lost all but one over 20 plus years – those seven formed a nucleus enabling our 4th edition of the *Flora of South Australia*. After the low of one, we now have three full-time botanists paid completely by the Government. But none are dedicated substantially, as in the past, to the revisional studies that so effectively advance taxonomic knowledge. We do have others employed in arrangements with the University of Adelaide and other external agencies, to mutual benefit, but not in improving taxon recognition and description at the same rate. A further point is that Adelaide's herbarium in the mid 80s, when it efficiently documented the current view of its state's vascular flora in three years, not only had those seven taxonomists, but also had a greater level of contribution from external botanists and volunteers.

My involvement in revisional research in Adelaide was much diminished in endeavours to show and improve the *relevance* of our herbarium in serving government, community, and our science. Investment in digitisation of our data and combining herbarium resources nationally (in the first instance) have gained many advantages and demonstrated the centrality of systematics to building and maintaining a dynamic floristic knowledge base. Yet in Adelaide we have recently lost our last dedicated data entry person. The user expectation of keeping current our own data of a million specimens, half South Australian, a quarter Australian, hardly a small job, will be attempted by staff and volunteers already

undertaking important research, documentation, technical work, and management. Small wonder that volunteers working in the collection and taxonomic research, too often confronted by the humour: “We don’t need to replace you; you just come back in retirement”, are discomforted by the joke. Its long and often repeated reality erodes the sum of our vital revisional work and our goal to maintain ‘relevance’.

The situation in Adelaide pales compared with the Northern Territory, which recently had just one taxonomic botanist and little other support.

So do we, the Australasian plant systematics community, continue to passively watch an inadequate or cyclical waning of capacity of each of our herbaria and universities to undertake endeavours that so clearly underpin environmental science and management? Or do we plan and implement an approach to stand up and promote the value of these endeavours in order to strive for a sustainable capacity to do our key business? At this time of global financial crisis and reduced taxation returns for government we seem particularly threatened. Do we wait? Or do we position ourselves so that we can tackle things better both now and as the situation improves?

Clear to all at the discussions at ASBS in Perth was that confronting this issue in a way that had hope of success would be a very complex exercise; unless handled smartly it could be expensive and fruitless. I refer readers to a paper (p. 31) that sets a way forward, arising from discussions at the ASBS conference and in CHAH.

The successful Perth conference

Once again the society has had a successful conference, enjoyed by all, being full of interest and friendship. The organising team is to be congratulated for their outstanding achievement which can only have resulted from quality planning and a lot of hard work. The first two days took place at the University of Western Australia. But the treat was the last day, when the Western Australian Herbarium, new to most attending from outside the state, was magnificently highlighted. The proceedings were held in its lofty atrium. So big was the space that it comfortably accommodated a packed day of talks, an art show, book sales and catering.

The AGM, various award ceremonies and the

field trip are reported on in this issue. A report on the conference itself and the sumptuous and joyous dinner has to wait for the next issue.

Research fund grants and student support

This major part of ASBS business continues to progress well. The Research Committee are thanked for their twice yearly assessments of applications.

The Eichler Research Fund

Council is seeking to address a recent drop of applications for grants. It is anticipated that there will be a significant injection of funds in the near future and it is important to ensure there is strong competition for what can be made available, while keeping the fund sustainable.

At this point research students in systematics have been favoured by the criteria and supervisors and students are encouraged to consider applications in the next round, due on March 14th.

New Zealand members are also encouraged to participate. Representation on our assessment committee reflects an anticipated strong interest in applications from both sides of the Tasman. We are thrilled to report a well-deserved first grant to a Kiwi (p. 23) in last September’s round of grants. Council had made the decision to fund grants to New Zealanders from the Society’s General Fund. But recently John Clarkson has been advised by the Australian Taxation Office that grants from the Research Fund can be given to projects on both sides of the Tasman, acknowledging the benefits that accrue to Australia from research taking place throughout the whole region.

The Australian Conservation Taxonomy Award

Granted for the first time last year, this award is to be given to a worthy applicant again this year, applications required also by March 14th. This generous award from the Nature Conservancy does relate specifically to a research project significant to conservation in parts of Australia. Refer to the society website for criteria and consult Mike Bayly who convenes the assessment committee for advice.

Further student support

The conference highlighted the benefits of providing research students with travel support. The standard of spoken and poster presentations was very high. CSIRO Publishing is thanked for its book prize and an *Australasian Systematic Botany* subscription for those voted best by our

assessment panel in the two formats. Winner of the Pauline Ladiges prize for best student talk was Lalita Simpson from James Cook University and that of the poster prize was Ben Anderson from the University of Western Australia (Fig. 1).

Keeping our Newsletter informative

In my first months my biggest commitment has been to address some difficulties that the previous Council was tackling with production of our Newsletter.

The Newsletter is a key vehicle of communication amongst our widespread membership. Our editorial panel of Russell Barrett and Peter Jobson have laboured valiantly over the last few years to produce our quarterly issues. Commitment to their employment has made this particularly difficult for them. Their situation has not improved and I compiled most of the last issue to ensure it came out in a reasonable time. I thank contributors to this issue; many supplied copy and information at short notice.

Producing the September issue despite a long delay was considered better than delaying it further by combining it with the December issue. We've merged issues before, but it is a last resort; it jeopardises currency of news and volume of content. At the same time we are trying to

restore a richer content and a prompt service of printed copy for requesting members, for subscribing libraries, and more recently for publishers donating books for review.

Council therefore is seeking a new editorial team with a membership that covers:

- garnering and maintaining sources of articles, announcements and news;
- compiling and formatting the Newsletter for print and web versions;
- establishing a relationship with a commercial publisher to produce printed copy
- establishing a method of mailing printed copy to subscribers.

I know from personal experience that none of these voluntary roles are trivial. But we have a history of individuals whose passions meet

one, some, or all these activities. If you are interested in being part of a new team, even if you have concerns, please don't hesitate to contact me or anyone on Council by phone or email for a rundown on what is required.

Over the years content has at times been lighter than we would like. The Newsletter is not just how the

Editors (or Council) make it; members have a role too. Unsolicited articles do appear and we encourage more. If you despair that something is missing, perhaps you can help fill that gap.



Fig. 1. Winners of the awards for presentations at the recent Perth conference: Lalita Simpson and Ben Anderson, flanked by Mike Bayly and Ilse Breitwieser from the assessment panel (absent Kristina Lemson). Ph. Russell Barrett

Australasian Systematic Botany Society Inc.

2013 Membership Fees

These are due on January 1st each year.

You should have been emailed an invoice for current and any back fees.

Subscription rates:

Ordinary/Institutional members \$45 (AUS)

Full-time students / retired / unemployed \$25 (AUS)

This is also an opportunity to donate to the Research Fund

Prospective Members need to download a membership form from the membership section of the ASBS web site

Please direct enquiries to Pina Milne our Membership Officer

Contributions are sought in many areas:

- Articles. We have had a wide range over the years, ranging from serious science or history to whimsy. Like many, I would like some more provocative pieces; for that we all need to be willing to step up to the plate.
- News. John Clarkson suggests this could be assembled by Conveners. We certainly could hear more of staff changes and institutional achievements in each Chapter's domain.
- Obituaries and death notices. The Newsletter has developed an important historical role in marking the passing of our peers. In my experience, delving sensitively into someone's history is met with appreciation and is a rewarding experience.
- Research grant reports. These have been a serious omission in recent times, something Council is to address. With the award of a research grant comes a requirement to report to the Newsletter on the research outcomes. Grantees, you are on notice to fulfil that obligation! Our readers appreciate such articles. It hones expectation of a future with committed and competent systematists.
- Reports from institutions and organisations with key roles in plant systematics. We are used to reports from ABRIS and more irregularly CHAH. We have had infrequent reports from herbaria and about big-picture projects with acronyms AVH, ALA, APC, etc. But I am not sure where one goes to get a reasonable overview of progress in these. The Newsletter seems very appropriate: our members are ultimately expected to be the prime users and often key contributors, yet many are not involved in the collectives that develop these products.
- Book reviews, a feature of our Newsletter. Taking on a special editorial role, John Clarkson has formalised soliciting publishers for works to review. You can send him suggestions. Better still, write a review of something you have already read that you think might benefit our readers.
- I expect Members will have other ideas to send Council or the new editorial team.

How else might Council better support the membership and promote systematics?

Council would like feedback from members on such ideas. My own thoughts include:

- With an anticipated major expansion of the Research Fund through the late Marlies Eichler's ultimate gesture of support for our

Society, perhaps we can help other groups who have little support for plant systematics research; work by volunteer botanists not able to be resourced by institutions comes immediately to mind.

- Perhaps our conferences could have other activities, such as: an educational community event taking advantage of the assembly of experts in a particular subject; or promoting a key strategic message for the media. A headline might focus not on a new book or a completed project itself, but fete it as a milestone in our long journey of biodiscovery and biodocumentation. We must take every opportunity to promote the key messages of our science.
- And we need to continue promoting the involvement in our expanded Society of our fledgling New Zealand membership.

Cover illustration

The choice of illustration on the cover of this issue follows a convention of using one from the President's work. Mine comes from a revision undertaken in my first job, as a taxonomic botanist in Papua New Guinea in 1974-6. The cover will hopefully remind us that the northern part of our Australasian region not only suffers hugely socially and economically, but also lags far behind its southern neighbours in the discovery and documentation of its unique and diverse biota. The illustration shows well Taikika Iwagu's skill in botanical art, borne of the rich artistic culture of his people. (Fig. 2)

Bill Barker



Fig. 2. The artist, Taikika Iwagu (centre), with Endo Guaf (left) and Effe Tanis, September 1975, Lae, PNG. Barry and I worked with Taikika, Effe and later Endo at the National Herbarium of PNG.

Ph. Barry Conn

ASBS Inc. business

34th Annual General Meeting of the Australasian Systematic Botany Society Inc.

Minutes

The University Club of Western Australia, Hackett Drive, Crawley, WA

4:00 pm (WST). Tuesday 25th September 2012

Meeting opened at 4:20 pm

Present: Peter Weston (President), Frank Zich (Treasurer), John Clarkson (Secretary), Pina Milne, Ilse Breitwieser and 59 members were in attendance.

1. Apologies

Dale Dixon (Vice-President), Robyn Barker, Murray Fagg

2. Minutes of the 2011 Annual General Meeting

It was proposed that the minutes of the 33rd Annual General Meeting (as published in the *Australasian Systematic Botany Society Newsletter* Number 149) be accepted.

Moved: Peter Jobson. Seconded: Wayne Gebert. Motion carried.

3. Business arising from minutes

Nil

4. Correspondence

Nil

5. President's Report

Presented by Peter Weston. (**Attachment 1**)

Peter Weston moved that his report be accepted. Seconded: Annette Wilson. Motion carried.

Peter called for a vote of thanks for all those involved with production of the Newsletter this year, Russell Barrett, Peter Jobson, Bill and Robyn Barker and John Clarkson. Carried with acclamation.

6. Treasurer's Report

Prepared and presented by Frank Zich. (**Attachment 2**)

Frank Zich moved that the financial report as presented be accepted. Seconded: Darren Crayn. Motion carried.

There followed some discussion on aspects of

the financial report. No motions ensued but the following comments were made:

- Members failing to pay their subscriptions remain a problem but this is offset by students joining.
- Council had considered increasing subscriptions but decided to hold them at the current level for another year.
- If more members were willing to receive the Newsletter electronically costs could be reduced. The default answer to the question asking members if they wished to receive the Newsletter electronically will be changed to "yes" on next year's subscription notices.
- Sponsorship had been particularly useful in hosting the Perth conference.
- It may be necessary to increase the cash advance given to conference organisers.
- Consider offering undergraduate students a highly discounted membership eg. \$5.

7. Newsletter Report

Newsletter editor, Russell Barrett, presented a brief report on the Newsletter.

8. Web Page Report

Webmaster Murray Fagg provided a report which was read by Peter Weston (**Attachment 3**).

Peter called for a vote of thanks for Murray who, although recently retiring from full time employment, has offered to continue as webmaster. Carried with acclamation.

9. Eichler Research Fund

John Clarkson presented a report on the research grants on behalf of Dale Dixon.

- There was no successful applicant in the March round.
- The Research Committee assessed applications for the Australian Conservation Taxonomy Award. The successful

applicant was Tod McLay from Melbourne University.

- Applications for the September round closed on September 14. The applications are currently being assessed.
- Dale will step down as ex officio chair of the Research Committee at this meeting. He will be replaced by the Vice-president elect, Mike Bayly, who will collate the results of the September round.

John called for a vote of thanks for Dale and the members of the Research Committee, Bill Barker, Phil Garnock-Jones, Betsy Jackes, Greg Leach, Nathalie Nagalingum and Chris Quinn. Carried with acclamation.

10. Presentation of Life Membership to Bill Barker

Peter Weston announced that Council had decided unanimously to confer Life Membership on Bill Barker. This was greeted by sustained applause. Peter spoke briefly of Bill's contribution to the Society then presented him with a framed certificate. Bill responded with a short acceptance speech.

11. Special Resolution to change Rules

Peter Weston spoke briefly on the process to date.

Details of the changes can be found in the minutes of the Special General Meeting held in the Caley Room National Herbarium of New South Wales on Tuesday 3rd July 2012 (www.anbg.gov.au/asbs/meeting-minutes/12-07-03-ASBS-SGM-Minutes.pdf).

The Secretary reported that 51 votes were cast in the postal ballot which closed on September 5 and that he held 3 signed ballot papers delivered to him prior to this meeting in accordance with Rule 30(5)(c)(ii).

In accordance with Rule 30(5)(c)(i) Peter called for a show of hands on each of the 5 questions pointing out that only financial members who had not previously voted were eligible to vote.

Results of the ballot are attached (Attachment 4). All questions were passed in the affirmative.

Changes will take effect when lodged with the Registrar General. This must be done within one month of this meeting.

12. General Business

- Kelly Shepherd suggested that it might be useful to maintain the web site set up for the Perth conference for future conferences. A brief discussion on future conferences ensued.

Resolution: That guidelines be prepared to assist future conference organisers. Ilse Breitwieser will co-ordinate this. The organising committee for the Perth conference and Jeremy Bruhl, who chaired the organising committee for the conference held in Armidale in 2009, should be able to provide useful suggestions.

- John Clarkson informed the meeting that material related to the Society is archived in the library at the National Herbarium of Victoria.

13. Election of Officers

John Clarkson informed the meeting that President, Peter Weston, having served 3 consecutive full terms as President was ineligible to renominate for that position and that Vice-president, Dale Dixon, having served 6 consecutive full terms on Council, was ineligible to stand for any position. All other members of Council are eligible for re-election.

Only one nomination for each Council position was received by the closing date. The nominees were therefore elected unopposed. The Council for 2012-13 is:

President: Bill Barker

Vice-president: Mike Bayly

Secretary: John Clarkson

Treasurer: Frank Zich

Councillor (communications officer):

Ilse Breitwieser

Councillor (assistant treasurer): Pina Milne

Bill Barker took the chair and called for a vote of thanks to Peter Weston and Dale Dixon. Carried with acclamation.

14. The Crisis facing Plant Systematics in Australasia

Bill Barker outlined his thoughts on the crisis facing plant systematics in Australasia. This had formed the basis for a discussion two nights before by the incoming and retiring Council,

together with invitees David Mabberley and Kevin Thiele.

David Mabberley, Peter Weston and Ilse Breitwieser fronted the meeting for a panel discussion on the issue.

A lively discussion ranged over a wide range of issue including:

- the potential for success and scope of an independent international review,
- other ways of dealing with the issue,
- whether it should be confined to the systematics of plants or extended to the whole biota,

- the stakeholders to be engaged,
- the complexity of a review directed at multiple governments (national, state, territory)

Resolution: By a show of hands the meeting resolved that ASBS Council continue to progress this matter.

15. Next Meeting

As usual the next Annual General Meeting will be held in association with the 2013 conference to be held in Sydney. Date, time and venue will be announced in due course.

Meeting closed at 6:20 pm.

Attachment 1

President's Report

This will be my last President's report, as I am compelled to retire from Council at the 2012 Annual General Meeting, having completed the maximum three year term as President. The financial health of ASBS has steadily improved since the Global Financial Crisis and looks set to be dramatically enhanced in the near future, thanks to a very generous bequest from the late Marie-Luise Eichler. In other respects ASBS has generally performed well over the past year: it is running an outstanding conference in Perth, during which it will be awarding the first of two Australian Conservation Taxonomy Awards and further improving its own rules through Special Resolutions. Moreover, a gradual decline in some other measures of performance seems to have been gently reversed.

Conferences

Our established routine of holding annual conferences was resumed in Perth in September 2012 after "delegating" organisation of our 2011 conference to the International Botanical Congress in Melbourne. The Perth conference has been terrific, with apparently faultless organisation, excellent venues, some great presentations, stimulating discussions, and enjoyable, sometimes hilarious social events. Members who participated should be congratulated for providing the intellectual input in both presentations and discussion sessions that are making this such a memorable conference.

The Society's next conference will be held jointly with the Society of Australian Systematic Biologists and the Invertebrate Biodiversity & Conservation group at the University of Sydney from 2-6 December 2013. A conference organising committee has been assembled, co-chaired by Nerida Wilson, Shane Ahyong (both Australian Museum) and me.

Newsletter

The ASBS Newsletter remains the most important medium that we have for communication between members. 2012 saw publication of issue number 150, which became a celebratory bumper issue thanks to the efforts of guest editors Bill and Robyn Barker in soliciting articles on ASBS history to mark the occasion. Delays in publication of the Newsletter were a source of frustration for members in 2010 and 2011, with the June 2011 issue being published together with the September issue. The Newsletter came closer to meeting its publication schedule during the first half of 2012, with two issues published on the ASBS website on time. Our main difficulty in maintaining a regular publication schedule is that editing the Newsletter is a substantial task and our editors often have difficulty finding the hours needed for editorial work outside of work time. We have been lucky to have an editor (Russell Barrett) and guest editors (Bill and Robyn Barker) who are skilled in using publishing software and who have been

prepared to devote a lot of their private time to working on our Newsletter.

Website

The ASBS website has become the second crucial arm of the Society's communication network, serving the Newsletter directly to the majority of members but also providing links to items of current information through the "Latest News" section of the home page. These links included the "Opportunities in Systematics" page, which was kept up to date with useful links to advertisements for jobs, grants and scholarships in plant systematics, information on the Perth conference, and a new page of previews of book reviews that would later appear in the Newsletter. In June 2012, Webmaster Murray Fagg retired from paid employment with the Australian National Botanic Gardens, but has kindly agreed to continue administering the ASBS website, which continues to be hosted on the ANBG computer system. Murray noted the pleasing result that hits on the ASBS website in 2012 were significantly higher than in comparable periods in 2011.

Research Committee and Hansjörg Eichler awards

The investments of the Research Fund have been performing well since 2010, providing the capacity to grant up to two awards in both March and September rounds in that time. However, a previously unanticipated problem began to emerge in 2011: too few high quality, eligible applications were being submitted for Hansjörg Eichler Awards. Only one application was received in each of the September 2011 and March 2012 rounds, the latter being judged as of insufficient standard to warrant the granting of an award. The cause of this worrying decline in interest was unclear but it prompted Council to be more proactive in encouraging research students to apply for these awards. It was gratifying then that five good applications were received in the September 2012 round.

In recent years, Vice President Dale Dixon has organised a slow but steady turnover of members of the Research Committee but in 2011-12 there was no change. and the same committee continued to fulfil the important function of assessing Eichler Award applications.

The Australian Conservation Taxonomy Award

The Australian Conservation Taxonomy Award (funded by the Thomas Foundation through The Nature Conservancy Australia) was offered for the first time in March 2012. This Award represents a highly desirable addition to the funding of any Ph.D. project, providing support for attendance at successive ASBS conferences plus \$6000 worth of research funding. Although only two applications were received, both were of excellent quality. Funding has been committed for a second Australian Conservation Taxonomy Award, to be offered in March 2013, after which the Award will be reviewed, and if judged sufficiently successful, may be funded indefinitely into the future.

ASBS finances

The General Fund had been growing slowly but steadily over the past few years but declined slightly in 2011-2012 due to exceptional expenditure associated with International Botanical Congress in Melbourne. This was mostly accounted for by the provision of \$10 800 to student travel assistance and was more than offset by inheritance in 2008/09 of the remaining funds of the defunct Paleobotanical Society.

Our largest expense is still the cost of printing and distributing the ASBS Newsletter. However, increases in unit costs have been offset by the rising proportion of members who choose to download the Newsletter from the ASBS website rather than receiving a paper copy in the mail.

The Research Fund has also continued to grow, and will enjoy a one-off spectacular boost when the office of the NSW Trustee and Guardian finally completes administration of Marie-Luise Eichler's estate in 2013. This inheritance should enable the initiation of a new, more ambitious program of support for early career plant systematists.

Membership

In my President's Report last year I focussed on a worrying decline in the number of ASBS members since 2007/2008. A membership drive by Council and other members succeeded in modestly boosting the numbers but our total membership is still lower than it was

in 2009-10. We still need to be assertive in encouraging botanists to join our Society. Both herbaria and universities now tend to replace plant taxonomists with more broadly skilled scientists, who may identify themselves not as systematists but as evolutionary ecologists or geneticists, even though their research still has significant taxonomic or phylogenetic implications. We should see these people as potential ASBS members and point out to them the advantages of joining our society.

Council

Vice President Dale Dixon will retire from ASBS Council at the conclusion of this Annual General Meeting, having served on Council for five years and for the maximum term of three years as Vice President. I will also retire from the Presidency, having spent four years on Council and the maximum three-year term as President. Mike Bayly (Vice President) and Bill Barker (President), both of whom have served previously on Council, have nominated for these positions and will be elected unopposed. ASBS is now in the fortunate position of having a highly experienced group of Council members, none of whom faces compulsory retirement before 2015.

Special resolutions

Special resolutions to make 25 changes to the Society's rules will be resolved at this Annual General Meeting. These changes were grouped into five categories:

1. A rule change related to the Society's non-profit status (proposal 1)
2. A rule change enabling Council to meet formally by electronic means (proposal 2)
3. Rule changes enabling Councillors to participate in General Meetings by electronic means (proposals 3 – 5)
4. Rule changes clarifying the way members cast their votes at meetings (proposals 6 – 13)
5. Rule changes correcting minor typographical errors (proposals 14 – 25)

While the majority of these changes are of a relatively trivial, "house-keeping" nature, a number represent important reforms that, if passed, will allow ASBS and its Council to conduct its business in a more efficient, cost-effective way than was possible in the past,

without eroding the checks and balances that were written in to our rules. They will enable Council members to use the benefits of modern communications technology to attend General Meetings (other than the AGM), and Council meetings remotely. This will eliminate the considerable expense of transporting Council members around Australasia to attend meetings in person when their "virtual attendance" is perfectly adequate. I and the rest of Council are optimistic that these logical changes will be approved by the Membership.

Science policy

Handsome support in recent years for the communication of taxonomic information to the general public through the Atlas of Living Australia has masked a gradual decline in financial support from Australian governments for plant systematics since the mid 1980s. This trend has been manifested by:

- compounded cuts to ABRIS funding;
- tacit exclusion of pure systematics from ARC funding;
- exclusion of museums and herbaria from applying in their own right for ARC grants (supposedly to encourage collaboration between universities and collection-based institutes);
- a steady decline in the number of professional plant systematists, which is now critical in most states;
- virtual privatization of plant systematist positions in Western Australia.

ASBS has been involved in various attempts over the past 25 years to persuade governments to enhance funding for systematics, the most recent being involvement in the now defunct Taxonomy Australia consortium ("TaxA"). None of these efforts have reversed the long-term trend of dwindling support for systematics.

Over the past year, this chronic malaise was superseded by a much more acute threat to the survival of systematics – the drastic downsizing of public services by Australian state governments intent on retrenching tens of thousands of employees in the name of fiscal austerity. Although several ASBS members lost their jobs through these actions, plant systematics has not fared as disastrously as some other branches of science, some of

which have seen the closure of whole research institutes. However, cuts will be ongoing over at least the next two years, so it is too early to say whether our discipline has dodged the worst excesses of this ideologically driven crusade.

What is the best way for ASBS to respond to these threats? Council could become more militant in various ways. In retrospect, I regret that ASBS was not more active during my presidency in criticising the erosion of government support for science in general and plant systematics in particular. I am hopeful that the new Council will be more successful in its advocacy of our science.

Acknowledgements

I wish to thank everyone who has helped to run our Society in 2011-2012, most notably:

- our conference organising committee: Kelly Shepherd, Juliet Wege, Ryonen Butcher, Peter Jobson, Matt Barrett, Russell Barrett and Kristina Lemson;

- our Newsletter editors: Russell Barrett, Peter Jobson (printing and distribution) and John Clarkson (book reviews), Bill and Robyn Barker (guest editors for Newsletters 150-151);
- our Webmaster, Murray Fagg, for the work he has done since June 2002 in maintaining our website and periodically assisting in upgrading it over that time.
- the other members of ASBS Council: Dale Dixon, John Clarkson, Frank Zich, Pina Milne and Ilse Breitwieser;
- our Public Officer, Annette Wilson;
- The Research Committee: Bill Barker, Phil Garnock-Jones, Betsy Jackes, Greg Leach, Nathalie Nagalingum and Chris Quinn;
- James Fitzsimons (The Nature Conservancy), who joined the Research Committee to assess applications for the Australian Conservation Taxonomy Award.

Attachment 2

ASBS Treasurer's Report 2011/12

Presented at the Society's Annual General Meeting in Perth, Australia, 23-28th Sept 2012

1. Introduction

I am pleased to present the financial statements of the Australasian Systematic Botany Society (ASBS) for the year ended 30 June 2012. The finances of the Society are run on a financial year basis.

2. Membership

At 30 June 2012 the membership of ASBS numbered about 228, which is an increase on the number of members at the same time last year (216) due to the concerted efforts of ASBS Council to encourage existing and lapsed members to become financial again. The proportion of Full (62%) and Concessional members (30%) remain roughly the same as last year, and the number of Gratis memberships (16) is reduced by one. Thirty eight new individual members joined ASBS between July 2011 and 30 June 2012 (see list below), a significant increase over the previous year (22).

Approximately 26% of paying members were

un-financial at the end of September, which is notably lower than the previous few years (37% in 2010). There has been a concerted effort during 2011-12 encouraging members to pay current and overdue membership fees and the results of those efforts are evident in the increased membership and reduced number of unfinancial members.

The following new members for 2011 and 2012 are welcomed to the Society:

- Dr P.B. Peter Adams, Surrey Hills, VIC
- Mr M.S. Mansour Alotaibi, Adelaide, SA
- Ms Y.S. Agustina Arobaya, Cairns, QLD
- Ms J.L. Julie Atkinson, Nunawading, VIC
- Dr J. Joanne Birch, Richmond, VIC
- Ms K Kaylene Bransgrove, Kuranda, QLD
- Mrs J.L. Jayne Bell, Lancefield, VIC
- Dr M.C. Mark Brundrett, Hamersley, WA
- Ms B. Bokyoung Choi, Canberra, ACT
- Mr D. Daniel Cole, Cabarita Beach, NSW
- Mr J.M. Joel Collins, Leederville, WA
- Dr M.T. Margaret Collins, Melville, WA
- Mr M.I. Murray Dawson, Lincoln, NZ
- Ms M. Melodina Fabillo, Chapel Hill, QLD
- Mr A.J.K. Roger Fryer, Cairns, QLD

Table 1. Membership of ASBS as of 30th June 2012 (unfinancial members in brackets)

Fee	Full	Concessional	Gratis	Total
Ordinary	137 (31)	n/a	0	137 (31)
Student	n/a	35 (11)	0	35 (11)
Retiree	n/a	31 (11)	0	31 (11)
Unemployed	n/a	3 (0)	0	3 (0)
Institutional	6(4)	n/a	14	20 (4)
Life	n/a	n/a	2	2
Total	143 (35)	69 (22)	16	228 (57)

- Ms Elizabeth James, Melbourne, VIC
- Prof P.J. Philip Garnock-Jones, NZ
- Dr P.B. Peter Heenan, Lincoln, NZ
- Ms M.J. Megan Hirst, South Melbourne, VIC
- Mr P. Peraj Karbaschi, Calamvale, QLD
- Mr V.C. Virgilio Linis, Armidale, NSW
- Mr T Todd McLay, Melbourne, VIC
- Ms S.M. Saeideh Mashayekhi, NSW
- Dr R.A. Rachel Meissner, Nollamara, WA
- Ms Y.D. Yola Metti, Engadine, NSW
- Dr A.J.K. Alan Millar, Roseberry, NSW
- Prof G. Gareth Nelson, Moonee Ponds, VIC
- Ms C.M. Cheryl Parker, , WA
- Ms J.M. Jessica Prebble, Wellington, NZ
- Ms S. Susan Rutherford, Woy Woy, NSW
- Dr B.L. Barbara Rye, Kensington, WA
- Dr F. Franck Stefani, South Yarra, VIC
- Dr S.J. Steven Wagstaff, Lincoln, NZ
- Mr E.L. Edward White, Beerwah, QLD
- Dr G. Gilbert Whyte, Jiliby, NSW
- Mr S.J. Stuart Worboys, Cairns, QLD
- Mr K. Karma Wangchuck, Brisbane, QLD
- Mrs H. Hongyan Xie, Barton, ACT

- | | |
|------------------|------------------|
| Frank Hemmings | John Hoskings |
| Laurence Jessup | Pauline Ladiges |
| Bill McDonald | Dirk McNicoll |
| Andrew Mitchell | David Meagher |
| Matt Renner | Elizabeth Sheedy |
| Kelly Shepherd | Nanette Thomas |
| Michelle Waycott | Juliet Wege |
| Molly Whalen | Annabel Wheeler |
| Gilbert Whyte | Gary Wilson |
| Karen Wilson | Peter Wilson |

3. General Fund

Brian Woods of DFK Kidsons audited the accounts in September 2013 for the second consecutive year.

On 12 May 2011 the Society was notified by letter from Commonwealth Financial Services that all Commonwealth Cash Management Trusts (CMT) were to be terminated on 12 August 2011. Following investigation of the investment options by Council, the General Fund CMT was closed and funds transferred to the existing RaboDirect online account which has earned from 4.9%-4.25% through the financial year 2011-12.

3.1 Income

The Income on the General Fund was \$27,312. A significant contribution to this was receipt of the Australian Conservation Taxonomy Award (ACTA) (\$10,000).

Subscription fees from members remains the steady source of income to the General Fund. The total income from membership (\$10,277) was \$1,450 higher than the previous year.

Interest income on the RaboDirect online

Fifty-one members made donations to the Hansjörg Eichler Research Fund totalling \$1970. All donors including the following members are acknowledged for their generous support:

Helen Aston	Robyn Barker
Bill Barker	Chris Betteridge
Barbara Briggs	Jeremy Bruhl
John Clarkson	Barry Conn
Darren Crayn	Rogier de Kok
Wayne Gebert	Laurence Haegi

savings account was \$4883.

Book sales continued at their previous low rate, with a net return of \$38.50 and so this year remaining stocks have been written off. There was also a donation of \$300 from the sale of *Hebe* books during the International Botanical Congress.

3.2 Expenditure

Expenditure from the General Fund was \$33,421. Contributing to this expenditure are: the first payment for the Conservation Taxonomy Award (\$6000, cheque not yet drawn); the conference expenses includes travel awards for 16 students to attend the International Botanical Congress (IBC) (\$8,800) and \$2000 seed funding for the 2012 ASBS Conference in Perth.

Newsletter printing costs were, as usual, a major component of the routine expenses of the General Fund (\$7,150). There will be further savings as an increasing proportion of members (47%) who have paid their fees elect to receive their newsletter electronically (41% in 2011 and 33% in 2010).

Other major expenses this year included : \$3041 travel expenses for Council members to attend the Special General Meeting in Sydney, and Annual General Meetings in Melbourne (2011) and Perth (Sept 2012).

One Eichler Award (\$2000) was paid from the General Account which will be refunded from the Hansjörg Eichler Research Fund in July 2012.

As with the last few year's Treasurer's reports it is worth highlighting that the regular income and expenses of the Society are tightly coupled. This remains the case. Revenue from memberships this year was sufficient to cover all routine expenses, excluding the once-off IBC conference expenses. Given the healthy state of the General Fund (assets of \$111,449), Council doesn't feel it is necessary to increase subscription rates at this point, but subscription rates should continue to be assessed annually to ensure the Society is covering its regular expenses.

3.3 Current Assets in the General Fund

At the end of June 2012 the Society held assets of \$111,449. This represents a decrease of \$6018 over the 2010/11 level.

4. The Hansjörg Eichler Research Fund

On 12 May 2011 the Society was notified by letter from Commonwealth Financial Services that all Commonwealth Cash Management Trusts (CMT) were to be terminated on 12 August 2011. Following some investigation of the investment options by Council, the Research Fund CMT was closed and funds were transferred to a Term Deposit in July 2011. Investment options have been reviewed on maturity and rolled over.

Research Fund investments had another year of growth, though lower than the previous few years due to poor performance on the Managed Funds. This year has seen a lower return of \$15,074 (compared to \$22,562 in 2011 and \$23,855 in 2010). There were no major donations this financial year as the ASBS awaits execution of the Estate of a benefactor.

Nearly 51 individual donations were received totalling \$1,640 by members in conjunction with membership payments. These funds are initially paid into the General Fund and will be transferred into the Hansjörg Eichler Research Fund in July 2012.

The Council awarded one Hansjörg Eichler Research Grant this year. The grant of \$2000 was awarded to David Meagher in the September 2011 round. This grant was initially paid from the General Fund so this amount will be transferred from the Eichler Fund back to the General Fund in July 2012.

Assets of the Research Fund increased during the period from \$451,818 in 2011 to \$468,414 in 2012.

5. Taxation

The ASBS continues with its tax-exempt status. Organisers of conferences are reminded that ASBS is not registered as a GST gathering organisation. Planners of large conferences need to obtain an ABN and the relevant status or work through a registered institution (such as a herbarium). Smaller conferences and workshops can be run through the Society as long as no GST is charged or recovered.

6. Summary

The Society remains in a strong financial position. In 2010/11 the General Fund had an operating deficit of \$-6,109 and accumulated

assets of \$111,358. After two years of poor performance, investments of the Hansjörg Eichler Research Fund have now returned two consecutive years of positive returns that, coupled with generous donations of members, saw the fund grow in value by \$16,596 to \$468,441.

Frank Zich
Treasurer
August 2012

**AUSTRALASIAN SYSTEMATIC BOTANY SOCIETY INCORPORATED
(An incorporated association)**

FINANCIAL REPORT FOR THE YEAR ENDED 30 JUNE 2012

AUSTRALASIAN SYSTEMATIC BOTANY SOCIETY INCORPORATED

COUNCIL MEMBERS' REPORT

Your Council members submit the financial statement of the Australasian Systematic Botany Society Incorporated for the year ended 30 June 2012.

Council Members

The names of the Council members who held office throughout the reporting period and at the date of this report are:

President	Peter Weston	Appointed December 2009
Vice President	Dale Dixon	Appointed December 2009
Secretary	John Clarkson	Appointed July 2011
Treasurer	Frank Zich	Appointed December 2010
Councillor (Assistant Secretary)	Ilse Breitwieser	Appointed July 2011
Councillor (Assistant Treasurer)	Pina Milne	Appointed December 2010

Principal Activities

The principal activities of the association during the reporting period were to promote systematic botany in Australia.

Significant Changes

No significant change in the nature of these activities occurred during the reporting period.

Operating Results

The operating results are as set out hereunder:

	Year ended June 2012	Year ended June 2011
	\$	\$
Research Fund	16,714	33,093
General Fund	-6,109	8,372
Total	10,605	41,465

Signed in accordance with a resolution of the members of the Council.

Peter Weston (President)

Frank Zich (Treasurer)
September 2012

AUSTRALASIAN SYSTEMATIC BOTANY SOCIETY INCORPORATED
INCOME STATEMENT
FOR THE YEAR ENDED 30 JUNE 2012

	Note	2012 \$	2011 \$
RESEARCH FUND			
Income			
Donations to Research Fund		-	20,561
Investment Income	2	15,074	22,562
General Fund Transfer (includes member donations and profits from fundraising book sale)		1,640	
Total Income		16,714	43,123
<i>Expenditure</i>			
Audit Certificate		-	30
Research Grants		-	10,000
Total Expenditure		-	10,030
Surplus	3	16,714	33,093
GENERAL FUND			
Income			
Sales – Books		39	84
Less Cost of Goods Sold			
Opening stock – Books		207	220
Closing stock – Books		-	- 207
Cost of Goods Sold/written off		207	13
Gross Revenue from Trading		- 168	70
Advertising		50	
Australian Conservation Taxonomy Award		10,000	
Investment Income	2	4,883	5,438
Subscriptions to ASBS Inc.		10,277	8,827
Donations to Eichler Fund		1,970	1,755
Other book sales		300	
Total Income		27,312	16,090
Expenditure			
Transfer to Eichler: member donations (+ extra)		1,640	
Eichler Award		2,000	
Australian Conservation Taxonomy Award		6,000	
Auditors' remuneration		1,980	1,870
Credit card charge facility		475	427
Conference expenses including Student Grants		10,800	2,303
Newsletter expenses		7,150	1,329
Registrar general returns		35	12
ASBS Council Travel (AGM, Special GM)		3,041	
Miscellaneous expenses (e.g. postage)		300	1,777
Total Expenditure		33,421	7,718
Surplus	3	- 6,109	8,372

The accompanying notes form part of these financial statements.

AUSTRALASIAN SYSTEMATIC BOTANY SOCIETY INCORPORATED
BALANCE SHEET
AS AT 30 JUNE 2012

	Note	2012	2011
		\$	\$
ASSETS			
Current Assets			
RESEARCH FUND			
Cash at Bank		19,952	19,501
Investments			
Colonial Managed Investment		70,645	71,958
Cash Management Fund (closed)		-	197,223
Commonwealth Term Deposit		210,000	-
Australian Bond Fund		96,505	90,427
Growth Fund		71,339	72,709
Total Current Assets Research Fund		468,441	451,818
GENERAL FUND			
Cheque Account		7,643	11,486
Savings Account		103,806	53,922
Cash Management Account (closed)		-	51,852
Inventories – Books		-	207
Total Current Assets General Fund		111,449	117,467
Total Current Assets		579,890	569,285
NET ASSETS		579,890	569,285
MEMBERS' FUNDS			
Accumulated surplus – opening	3	569,285	527,820
Surplus for the period	3	10,605	41,465
Total Members' Funds		579,890	569,285

The accompanying notes form part of these financial statements.

AUSTRALASIAN SYSTEMATIC BOTANY SOCIETY INCORPORATED
NOTES TO AND FORMING PART OF THE FINANCIAL STATEMENTS
FOR THE YEAR ENDED 30 JUNE 2012

Note 1: Statement of Significant Accounting Policies

The financial report is a special purpose financial report prepared in order to satisfy the financial reporting requirements of the members. The Council has determined that the Society is not a reporting entity.

The financial report has been prepared in accordance with the requirements of Australian Accounting Standard AASB 1031: Materiality. No other applicable Accounting Standards, Australian Accounting Interpretations or other authoritative pronouncements of the Australian Accounting Standards Board have been applied.

The financial report has been prepared on a cash basis.

The following specific accounting policies, which are consistent with the previous period unless otherwise stated, have been adopted in the preparation of this financial report.

(a) Membership

Membership is recorded on a cash basis.

(b) Income Tax

Under present legislation the Society is exempt from income tax and accordingly no provision has been made in the accounts.

(c) Comparative Figures

Where required by Accounting Standards comparative figures have been adjusted to conform with the changes in presentation for the current year.

The 2011 comparators have been updated to record the correct value at the 30 June 2011.

30 June 2011 values reported prior to revision :

Research Fund - Investment income	\$17,967 CR
General Fund - Investment income	\$22,562 CR

30 June 2011 values revised :

Research Fund - Investment income	\$4,902 CR
General Fund - Investment income	\$5,438 CR

(d) Members Funds

In accordance with the rules of the Society accumulated funds are not available for distribution to its members.

	2012	2011
	\$	\$

Note 2: **Investment Income**

	2012	2011
	\$	\$
RESEARCH FUND		
Interest Received		
Cheque Account	3	8
Distributions1*		
Term Deposit	10,987	
Colonial First State (Diversified Fund)	- 1313	4,256
Cash Management Trust (closed)	-	9,510
Australian Bond and Growth Fund	5,397	8,788
Total Investment Income	15,074	22,562
GENERAL FUND		
Interest Received		
Cheque Account		2
Savings Account	4,883	2,589
Distributions		
Cash Management Trust (CLOSED)	-	2,847
Total Investment Income	4,883	5,438

	2012	2011
	\$	\$
Note 3: Accumulated Funds		
RESEARCH FUND		
Accumulated Surplus – Opening	451,818	418,725
Surplus for the period	16,714	33,093
Accumulated Surplus – Closing	468,532	451,818
GENERAL FUND		
Accumulated Surplus – Opening	117,467	109,095
Surplus for the period	6,109	8,372
Accumulated Surplus – Closing	111,358	117,467
Total Surplus for the period	10,605	41,465
Total Accumulated Surplus	579,890	569,285

Note 4: Research Committee

The Australasian Systematic Botany Society is an approved research institute. The approved membership of the Research Committee comprises:

Dale Dixon (Chair)	
Bill Barker	
Betsy Jackes	Appointed July 2003
Greg Leach	
Kristina Lemson	Appointed Feb 2008
Chris Quinn	Appointed July 2003

AUSTRALASIAN SYSTEMATIC BOTANY SOCIETY INCORPORATED

STATEMENT BY THE MEMBERS OF THE COUNCIL

The Council has determined that the Society is not a reporting entity and that this special purpose financial report should be prepared in accordance with the accounting policies outlined in Note 1 to the financial statements.

In the opinion of the Council:

1. The financial report as set out on pages 1 to 7 presents a true and fair view of the Society’s financial position as at 30 June 2012 and its performance for the year ended on that date.
2. At the date of this statement, there are reasonable grounds to believe that the Society will be able to pay its debts as and when they fall due.

This statement is made in accordance with the resolution of the Council and is signed for and on behalf of the Council by:

President..... Peter Weston – President

Treasurer Frank Zich – Treasurer

Dated this day of SEPTEMBER 2012



DIRECTOR
Brian Woods, CPA

Independent auditor's report to the members of the Australasian Systematic Botany Society Inc.

Report on the financial report

We have audited the accompanying financial report, being a special purpose financial report, of the Australasian Systematic Botany Society Inc., which comprises the balance sheet as at 30 June 2011, council members' report, the income statement, notes to the financial statements, a summary of significant accounting policies, other explanatory notes and the statement by the members of the council, for the period ended 30 June 2011.

The responsibility of the members of the council for the financial report

The council members of the Society are responsible for the preparation and fair presentation of the financial report and have determined that the accounting policies described in Note 1 to the financial statements which form part of the financial report, are appropriate to meet the financial reporting requirements of the Incorporated Society and the needs of the members. The council members' responsibility also includes establishing and maintaining internal control relevant to the preparation and fair representation of the financial report that is free from material misstatement, whether due to fraud or error; selecting and applying appropriate accounting policies; and making accounting estimates that are reasonable in the circumstances.

Auditor's responsibility

Our responsibility is to express an opinion on the financial report based on our audit. No opinion is expressed as to whether the accounting policies used, as described in Note 1, are appropriate to meet the needs of the members. We conducted our audit in accordance with Australian Auditing Standards. These Auditing Standards require that we comply with relevant ethical requirements relating to audit engagements and plan and perform the audit to obtain reasonable assurance whether the financial report is free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial report. The procedures selected depend on the auditor's judgement, including the assessment of the risks of material misstatement of the financial report, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the Society's preparation and fair presentation of the financial report in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Society's internal control. An audit also includes evaluating the reasonableness of accounting estimates made by the council members, as well as evaluating the overall presentation of the financial report.

The financial report has been prepared for distribution to members for the purpose of fulfilling the council members' financial reporting responsibilities under the Incorporated Society's constitution. We disclaim any assumption of responsibility for any reliance on this audit report or on the financial report to which it relates to any person other than the members, or for any purpose other than that for which they were prepared. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.



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Independence

In conducting our audit, we have complied with the independence requirements of the Australian professional accounting bodies.

Matters relating to the electronic presentation of the audited financial report

The auditor's report relates to the financial report of the Australasian Systematic Botany Society Inc. for the year ended 30 June, 2011, included on the Australasian Systematic Botany Society website. The Society's council members are responsible for the integrity of the Australasian Systematic Botany Society website. We have not been engaged to report on the integrity of the Australasian Systematic Botany Society website. The auditor's report refers only to the statements named above. It does not provide an opinion on any other information which may have been hyperlinked to / from these statements. If users of this report are concerned with the inherent risks arising from electronic data communications they are advised to refer to the hard copy of the audited financial report to confirm the information included in the audited financial report presented on this website.

Qualification

Receipts from donations and membership subscriptions are a significant source of revenue for the Australasian Systematic Botany Society Inc. The Australasian Systematic Botany Society Inc. has determined that it is impractical to establish control over the collection of donations and other fundraising activity revenue prior to entry in its financial records. Accordingly, as the evidence available to us about revenue from these sources was limited, our audit procedures for donations and other fundraising activity revenue had to be restricted to the amounts recorded in the financial records. Therefore we are unable to express an opinion on whether donations and other fundraising activity revenue obtained by the Australasian Systematic Botany Society Inc. are complete.

Qualified Auditor's opinion

In our opinion (except for the effects on the financial report of such adjustments, if any, as might have been required had the limitation of our audit procedures referred to in the qualification paragraph not existed), the financial report presents fairly in accordance with the accounting policies described in Note 1 to the financial statement, the financial position of the Australasian Systematic Botany Society Inc. as of 30 June, 2011, and the results of its operations (and its cash flows) for the year then ended.

Signed on 22 November 2011

A handwritten signature in blue ink that reads 'B Woods'.

Brian Woods
DFK Kidsons
Certified Practising Accountant

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Attachment 3

Web Master's Report

The Society's webpage continues to be hosted by the Australian National Botanic Gardens server, and is continuing to be maintained by Murray Fagg following his retirement.

This year we added a new page 'ASBS Book Reviews' in conjunction with John Clarkson, where members can see books available for reviewing, and monitor the progress of those being reviewed.

Every now and again we are also updating the suite of banner images of Australian flora, now with their names for the curious.

To maintain comparable statistics we look at the month of June each year. Traffic to the website is higher this year, with an average of about 385 hits per day for June, (250 hits per day last year).

In June 2012 the ASBS home page received

2971 hits (i.e. 106/day) (cf. 50/day last year). Individual editions of the newsletter are the next highest accessed, in June this year, the March 2012 newsletter got 1273 hits; the highest hit rate for any single newsletter last year was 710 hits. With the newsletter index page only getting 348 hits for the month, it is obvious that most people are accessing these files directly, probably from search-engines such as Google.

In June this year the 'About ASBS', and 'Opportunities' pages all got around 180 hits, very similar to last year.

June traffic to the ASBS website is about 54% up on last year, with hits on the home page recording a 100% increase on last year. I'm afraid I cannot offer an explanation, but it is a nice result.

Murray Fagg

Attachment 4

Special Resolution

Results of the Special Resolution, tabulated below, were announced at the AGM.

Resolution: All questions resolved in the affirmative.

Note: One member voted twice. Second vote is invalid.

	Response	Postal ballot	Delivered to Secretary at AGM	In person at AGM	Totals
Question A	For	49	3	27	79
	Against	1	-	-	1
	Abstain	-	-	-	-
Question B	For	49	3	27	79
	Against	1	-	-	1
	Abstain	-	-	-	-
Question C	For	49	3	27	79
	Against	1	-	-	1
	Abstain	-	-	-	-
Question D	For	49	3	26	78
	Against	1	-	-	1
	Abstain	-	-	1	1
Question E	For	49	3	26	79
	Against	1	-	-	1
	Abstain	-	-	-	-
Additional vote (see note)		1	-	-	1
Total votes		51	3	27	81

Council meetings in Perth

The annual conference of the Society, at which we usually have our Annual General Meeting, sees the change to a new Council.

The outgoing Council traditionally has a final meeting of its year-long term immediately prior to the Annual General Meeting in order to wind up loose ends, ensure an effective meeting with membership, and to provide a transition to the soon- to-be-appointed new Council.

The meeting on 23rd September 2012 was held in Kings Park and Botanic Garden, Perth, on the Sunday that the conference began. We thank the Board of the KPBG for use of their room.

A near full attendance was on hand (Fig. 1a), with outgoing Vice-President Dale Dixon the only elected member absent. Also invited were the two new members of the incoming Council, Russell Barrett representing the Newsletter editorial team, and Public Officer Annette Wilson.

The new Council (Fig. 1b) held an advance meeting over dinner on the

night before the Annual General Meeting. When initially proposed it was aimed at setting our first year's agenda, but David Mabberley's opening conference address brought the sole focus to the one topic: whether and how to address the escalation in the chronic decline in government support for plant systematics. David, Kevin Thiele and outgoing President Peter Weston joined us. Our discussions led to that with Members at the Annual General Meeting on the following day (see p. 6).

Bill Barker



Fig. 1. Out with the old, in with the new – two ASBS councils. a (top), The outgoing Council at the meeting in Kings Park and Botanic Garden, Perth: Peter Weston, Pina Milne, John Clarkson, Frank Zich, Ilse Breitwieser (Vice-President Dale Dixon absent). b, The future Council outside the WA Herbarium on the last day of the conference: Bill Barker, Mike Bayly, Pina Milne, Frank Zich, Ilse Breitwieser, John Clarkson.

Ph. Russell Barrett

Australasian Systematic Botany Society Inc.

Applications for research grants close on March 14th 2013

We invite applications for grants from:

- the Hansjörg Eichler Research Fund
- the Australian Conservation Taxonomy Award

For eligibility and other information see the ASBS website or contact Vice-President Mike Bayly (address inside front cover)

Presentation of the first Australian Conservation Taxonomy Award to Todd McLay

The Australian Conservation Taxonomy Award (funded by the Thomas Foundation through The Nature Conservancy's Australian office) is the newest, most generous award program administered by ABRIS for supporting the work of postgraduate research students. It provides \$6000 of research funding and also supports attendance by the successful applicant at two successive ASBS conferences. Applications for the inaugural award closed in March 2012 and were assessed the ASBS Research Committee, together with James Fitzsimons, representing The Nature Conservancy. They chose Todd McLay's proposal, "Classification, Phylogeny and Conservation of *Xanthorrhoea*

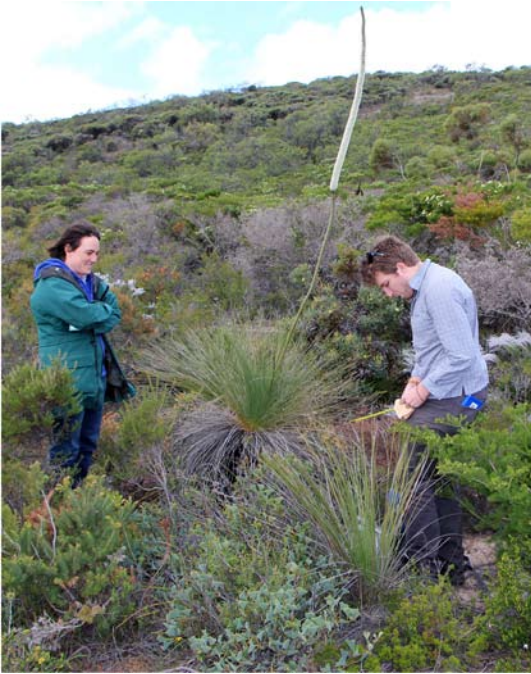
(*Xanthorrhoeaceae*) in Western Australia", as the winner. Todd is a Ph.D. student at the Botany Department, University of Melbourne, supervised by Mike Bayly. He gave a talk on his project at the ASBS conference in Perth and was formally presented with the award by James Fitzsimons on the last afternoon of the conference. We look forward to hearing about the results of Todd's research at the next ASBS conference in Sydney.

Peter Weston
Immediate past President

Appropriately Peter introduced James Fitzsimmons and ran the award ceremony at the Perth conference. He was instrumental in working with The Nature Conservancy to establish this award and its criteria for selection.
Ed.

Figs. Left, Juli Atkinson and Todd McLay at work with *Xanthorrhoea* sp. Mt Lesueur on the ASBS field trip following the Perth conference. Below, James Fitzsimons presenting Todd with his award at the conference.

Ph. Mike Bayly, Russell Barrett, resp.



Life Membership awarded to Bill Barker

At its meeting held on 23rd September 2012, ASBS Council unanimously agreed to award life membership to Bill Barker for his substantial and continuing contribution to the Society. Life membership may be conferred by Council on any member who has, in the opinion of Council, made a significant contribution to the Society. Such are the high standards

demanding of this award that, prior to this, the Society has honoured only 4 members in this way – Marlies Eichler in 1998, David Symon in 2000, Robyn Barker in 2006 and John Clarkson in 2010.

Bill is one of the Society's founding members, a stalwart of the Adelaide chapter and a person who has made significant contributions to the

functioning of the Society.

He served three terms as Vice-President between 1999 and 2002 and has been a member of the Society's Hansjoerg Eichler Research Committee since 2009. In 2012 he was nominated unopposed as President of the Society and took up that office at the Annual General Meeting held in September 2012.

He, in partnership with wife Robyn and, for a short time, daughter Jenny, served as Newsletter editor from issue 109 to 136. He and Robyn then returned as guest editors for two further issues, 149-150, when the incumbent editor was on extended leave overseas.

In 2002, together with Barry Conn, Bill undertook what has been the most detailed and extensive review of the Society's Rules, thus ensuring these were fully compliant with the rules governing societies incorporated in the Australian Capital Territory. In the process he published a history of the development of the Rules of the Society since they were first drawn up in 1973. This was published in *ASBS Newsletter* 114: 6-12.

At the chapter level, Bill has been part of the glue that has kept the Adelaide chapter functioning, even though its monthly meetings have been suspended since 2001 for lack of sufficient members to invite outside speakers. The chapter has hosted four conferences on behalf of the Society with Bill actively involved with three of these, and chairing the 1997 and 2008 organizing committees. The

3-day 1980 conference *Evolution of the Flora and Fauna of Arid Australia* grew out of the inability of ANZAAS to allow enough time to hold such a meeting under their auspices, and so it became the first independent thematic conference to be supported by ASBS members as well as other societies and organisations. The conference volume, edited by Bill and the late John Greenslade, was one of the first commercial publications of the Society and contributed positively to the society's coffers for some years. The 1997 Adelaide conference, *Systematics: advancing knowledge and conservation of Australia's biodiversity*, was the first joint conference with the Society of Australian Systematic Biologists, and was also the first to involve, with the help of HISCOM Committee members a "Software in systematics" component which enabled "hands on" experience in an internet café. The 2008 conference *Systematics in a changing environment* attempted more wide-ranging discussions on problems shared by systematists.

From the earliest days of the newsletter Bill has contributed articles, most notably of the earlier South Australian botanists, J.B. Cleland and J.M. Black, and in bringing together obituaries of colleagues. He has been a regular participant and contributor to ASBS conferences and made a substantial contribution to the index to issues 1-30 of the Newsletter.

Peter Weston

Hansjörg Eichler Research Fund September 2012 round

This round we had five applications. It was a competitive field, and grants were awarded to the following two students.

- Jessie Prebble, Massey University, A population genetic approach to species delimitation in the *Myosotis pygmaea* (Boraginaceae) species complex. \$2000.
- Charles Foster, The University of Sydney, Systematic relationships within *Logania* (Loganiaceae): how do they relate to the geological history of Australia? \$1950.

The award to Jessie Prebble is significant in that it is the first Eichler grant awarded to a New Zealand student. We hope this will encourage

other New Zealand students to consider both joining ASBS and applying for Eichler grants.

All unsuccessful applicants were provided with feedback on their applications and we have encouraged them to resubmit in future rounds.

The next round of applications will close on March 14th 2013.

Mike Bayly
Chair, Research Committee

The Burbidge Medal

Nancy Burbidge Medal presented to Bruce Maslin

It was with great pleasure that as incoming President I was able to present Bruce Maslin with the Nancy Burbidge Medal, the Society's most prestigious award (Figs. 1, 2). The medal is awarded on the recommendation of Council following nomination by any member(s).

Bruce Maslin's very appropriate nomination was made by members who under the protocols of the award remain anonymous. However, the text of the nomination is appended. An awardee is invited to deliver a Nancy Burbidge Memorial Lecture at the award of the medal at the first Society conference that follows. In this instance Bruce declined the invitation but has agreed to publishing his acceptance speech.

On behalf of many plant systematists of our region and overseas aware of Bruce's lifelong commitment to *Acacia*, I endorsed the previous Council's decision to award the medal to a traditional but progressive taxonomist who has been extraordinary in his resolve to improve on a broad front knowledge of Australia's largest flowering plant genus.

Bill Barker

Extract from the letter of nomination to the President of ASBS

"Re: Nomination for Nancy Burbidge Medal

Dear Peter,

We would like to nominate Bruce Maslin for the Nancy Burbidge Medal of the Australian Systematic Botany Society, to be awarded at the 2012 conference in Perth.

As the principal taxonomic expert in Australia's largest genus *Acacia*, we believe that Bruce has made an outstanding contribution to systematic botany in Australia and throughout the world. His long and productive career of more than 40 years has involved research on the taxonomy, nomenclature, phylogeny, biogeography, utilisation, phytochemistry, conservation biology, anatomy and botanical history of this iconic genus. He has described *c.* 350 new taxa, as well as revising and recircumscribing many others—work that has involved painstakingly confirming



Fig. 1 Presentation of the Nancy Burbidge Medal to Bruce Maslin by the ASBS President. Ph. Russell Barrett

or correcting the identity of a vast number of herbarium collections (>29,400 specimens at the Western Australian Herbarium alone). He has published more than 180 items, including more than 80 refereed papers and the *Flora of Australia* account of the genus. Few other botanists in Australia can claim such a record. He has also made a substantial contribution

to efforts to unravel the phylogenetic structure of the genus, work that resulted in the recognition that *Acacia*, as traditionally circumscribed, consists of five separate monophyletic groups, the largest of which is Australian. He was deeply involved in the process and negotiations which led to the name *Acacia* being conserved with an Australian type.

As well as this crucial work in providing foundation knowledge of this important genus, Bruce has been innovative and groundbreaking in making his knowledge available to a broader public through the World Wide Wattle website (www.worldwidewattle.com), which he established

and manages, and his superb interactive identification guides *WATTLE – Acacias of Australia* (2001) and *Wattles of the Pilbara* (2010).

His interests and contributions in *Acacia* have been wide-ranging, from alpha taxonomy and systematics to conservation, nomenclature and cultural and industrial uses of *Acacia* species in plantation forestry, reforestation and for firewood, food and chemical production. In this regard, Bruce has been exemplary in the extension of

taxonomic research into the government, public and corporate realms.

We believe that Bruce is one of the “unsung heroes” of taxonomy, and a worthy recipient of the Nancy Burbidge Medal.

A summary of Bruce’s contributions and achievements is given in the brief CV attached.

We hope the ASBS Council will look favourably upon this nomination. ...”

Nancy Burbidge memorial speech

Bruce Maslin, 23 September 2012

Mr President, members of the Society, colleagues and friends. I thank you very much indeed for the honour that has been bestowed upon me today.

However, this is an honour that must be shared with many other people without whose help and forbearance I would not be standing here now. So:

- I share this with the very many colleagues from a wide range of disciplines with whom I have collaborated and co-published over the past 45 years or so. Each collaboration brought with it a raft of new knowledge, experience and usually great camaraderie.
- I share this with friends who provided support and encouragement during times of particular stress. The most significant of these times related to the “Great Acacia Debate”, about which I will say a little more in a few moments.
- I share this with all those technicians, past and present, who provided me with crucial assistance in so very many ways. Their labours not only relieved me of much tedium but of course made specimens and information readily accessible for scrutiny.
- I share this with those individuals whose creativity has provided me with the tools that have greatly facilitated my work. I am thinking here particularly of the electronic identification systems DELTA and more particularly Lucid, which have enabled me to effectively ‘clone’ much of my taxonomic

knowledge. So thanks to Mike Dallwitz and especially Kevin Thiele.

I am afraid that time does not permit me to acknowledge the generosity, professionalism and assistance of very many other people who have played a role in my career. These include mentors (like Paul Wilson and Richard Cowan), thought provokers (like Steve Hopper), some managers, librarians, and many more.

I will speak a little about Richard shortly. But of Paul I really must not let this moment pass without saying a couple of words because quite frankly, I have no idea why I am standing here now instead of him. There is not one person who has worked at the WA Herbarium over the past 50 years who has not benefitted in one way or another from Paul’s incredible knowledge and from the sound advice that he has so generously and graciously provided. He has been a great friend to me all these year and I am very pleased at having this opportunity to thank him for that.

So, now that I have embarrassed Paul let me continue!

You know, in very many ways I have had a charmed professional life. I have had the utter privilege of being able to work, almost without interruption, on a single group of plants for most of my career. In some peoples eyes this may seem to have been an indulgence. It is certainly something that is very unlikely to happen in today’s climate of budgetary constraint and targeted taxonomy. However, for those who understand taxonomy, and who understand what taxonomists do, I hope that they consider that this has been a reasonable investment of time and money. I am sure that the taxonomists

¹ Bruce apologises for lack of references in this reproduction of his speech, only slightly adjusted for reading. Most sources should be cited on the WorldWideWattle website. *Ed.*

among you would share this same sentiment with respect to your own careers.

What I have just said about taxonomy of course begs questions such as:

- Well, what exactly do taxonomists do?
- Why do they seem to take so long to do it?
- Why are they always seemingly changing names?
- And most importantly, is it really worth paying for the products of their labour?

Clearly I do not have time to properly address these questions here. However, I would like to make a few terse observations about my personal view of taxonomy.

For me, the basic reason for undertaking taxonomic research is pretty simple, and is based on the following precepts:

- If an organism does not have a name then for all practical purposes it does not exist.
- It is the name, which the taxonomist provides, that enables information to be assembled and disseminated about organisms.
- Therefore, unless a named organism is properly circumscribed then the information that is communicated about it will be flawed, or at least it will be diminished.
- Finally, by hierarchically arranging named organisms into classification systems, taxonomists provide value-adding because they present hypotheses of relationships between those organisms.

You know, this notion of hypothesis generation is interesting because it lies at the very heart of what constitutes science. I had not appreciated until I was well into my career that whenever a taxonomist describes a new taxon that what they are actually doing is generating a hypothesis of relationships. In the case of species, for example, the hypothesis is that populations assigned to that species are more closely related to one another than they are to other populations. So, whenever people use the species names they are actually testing the taxonomic hypothesis. It might therefore be argued, as Steve Hopper once pointed out to me, that taxonomy is one of the most rigorously tested of all the sciences.

Acacia work

So, with those few thoughts in mind let me tell you a little bit about *Acacia*, my work with this genus and what have been some of the influences and drivers for me over the past 45 years.

First of all, for those of you who do not know much about *Acacia* let me give you a very few facts and figures.

- *Acacia* is the largest genus of vascular plants in Australia; it is more than twice the size of *Eucalyptus*.
- Currently there are just over 1000 formally recognized species in *Acacia*, representing around 1200 taxa.
- I would estimate that there must be at least 200 new taxa yet to be described; the majority of these occur in Western Australia.
- The primary centre of species richness for *Acacia* is the South West of WA where around 70% of the taxa are endemic. Other major centres of richness occur along the Great Divide in eastern Australia, the uplands of Central Australia and across the north of the continent, especially on areas where sandstone occurs.
- Species poor areas include Arid Zone lowlands, however, in these areas *Acacia* is often a very conspicuous element of the landscape. The most prominent of these species belong to the Mulga group about which I will say a little more shortly
- The principal mode of speciation in *Acacia* appears to be allopatric. However, Mulga is possibly an exception where sympatric speciation may be occurring.
- Until recently *Acacia* in the broad sense was regarded as a pantropical genus of about 1400 species. However, the genus has now been split and as currently defined comprises 5 genera:
 - There are 2 small genera endemic to the Americas (*Mariosousa* and *Acaciella*),
 - 2 moderately large genera that have pan-tropical distributions (*Vachellia* and *Senegalia*) and
 - the largest genus of all, *Acacia* in the strict sense, which is largely confined to Australia.
- There are about 20 species of the Australian

acacias that extend beyond our shores, most occurring in the asia-pacific region (to Hawaii), but one extends to Madagascar.

- Australian Acacias are extensively utilized abroad for a wide variety of purposes, but most particularly as a source of timber, pulp, tannin, fodder and for use in landscape amelioration projects. Currently, there are about 2 million ha of *Acacia* under cultivation outside this country.
- The phylogeny of the Australian *Acacia* flora is not yet fully resolved, but as you would have heard from Dan Murphy's talk yesterday this matter is currently being worked on. The molecular work so far has confirmed the existence of many groups that had previously been recognized by non-molecular studies.
- You will undoubtedly have heard something over the past few years of a little dispute over the name *Acacia*. I will say something on this matter shortly.

In the beginning it was hardly a conscious or deliberate decision on my part to become involved with *Acacia*. What happened was that I was introduced to the genus in my undergraduate years in Botany at UWA during the '60's. I then expanded this involvement in my Honours year by undertaking a project on a small group of bipinnate-leaved Wattles that included *Acacia pulchella*. So then, when I began work at the Herbarium in December 1967 the then Curator, Bob Royce, simply assumed that I would continue working on *Acacia*. So, that's just what I did.

Having Mr Royce as my first boss was unquestionably the first lucky break in my

career. I have great respect for this man and my hope is that one day the Reference Herbarium in this building will be named in his honour. I think that this would be a very fitting tribute to someone who did so much for botany in this State and for the Herbarium in particular, but whose achievements, until recently, have been largely overlooked.

Anyway, the good luck to which I just referred was short-lived because six months after starting work I was drafted into the Army, having won that infamous lottery. I therefore spent the next two years doing National Service, spending all of 1969 in Vietnam. I was discharged from the Army in early 1970, which is when my *Acacia* career really began in earnest.

Descriptive phase

I tend to think of the next 25 years or so as being the descriptive phase of my career. This was very much a story of head down and bottom up and getting on with the jobs that all taxonomists have to do. Firstly, familiarizing myself with character and taxon variation, assembling literature, accessing types, doing field work and of course, discriminating and describing taxa. At first I focused on WA but on account of my involvement with the

Flora of Australia project I was able to work nationally. I even managed a few trips abroad.

In 1975 during my first long service leave I did the usual herbarium-hop to many European and some American institutions and revisited many of these, plus more, in 1977-78 when I was ABLO at Kew.

When I first commenced working on *Acacia* there was Arthur Court, Mary Tindale and Les Pedley working on the eastern species. This of



Fig. 2. Bruce Maslin with the Burbidge Medal and an appropriate sprig of *Acacia*.
Ph. Russell Barrett

course is why I first focused on the Western Australian taxa.

It was in the middle of this pretty intense descriptive phase that I got my second lucky break. This occurred when Richard Cowan came and worked with me. Richard was a notable American botanist who had worked at the Smithsonian Institute in Washington. Most of you will recognize his name as the second author of that incredible bibliographic *magnum opus* called TL2.

Richard was extremely easy to work with. He had a wonderful, cheerful personality, possessed a fabulous work ethic, was a clear thinker, highly productive and was extremely well-versed in taxonomic theory and methodology. I learnt much from Richard and his assistance in describing new species and preparing Flora treatments was of immense value.

This first descriptive phase of my career ended with the completion of the *Flora of Australia* treatment of *Acacia* and the accompanying *WATTLE CD*. These two works which were published simultaneously in 2001 effectively summarized much of my knowledge of *Acacia* to that point in time.

Happily I am able to tell you today that both these works have now been revised and will appear shortly on the web.

My one big regret of this period is that I never had the time to produce a classification of the Australian *Acacia* flora.

Utilisation phase

As I was doing all that descriptive work I remember developing a sense of wanting to demonstrate to people that there was a very real practical utility to taxonomy. Thus began what I call the utilisation phase of my career, which commenced around the mid 90's.

My basic strategy was to try and demonstrate to non-taxonomic co-workers that they would derive better outcomes if they based their work on a sound taxonomy. I also tried to 'popularize' taxonomy in a number of ways. I therefore involved myself in all sorts of projects, for example:

- With colleagues from the Australian Tree Seed Centre in Canberra I co-authored a book on the use of *Acacia* as a human food and another on species that were commonly

utilized abroad;

- Together with Maurice McDonald I assessed the potential of *Acacia* as a woody crop plant for use in the southern agricultural areas of Australia as a means of helping ameliorate the affects of salinity. This assessment was published in 2006 by RIRDC in a volume titled *AcaciaSearch*.
- I also became involved with some community groups. The most significant of these was the Shire of Dalwallinu in the central wheatbelt region of WA. This involvement led to, among other things, the creation of the WorldWideWattle website.

So, at the end of the day did I convince people as to the worth of taxonomy? Well, maybe a few. However, what I came to realize was that it wasn't so much my co-workers or the general public that needed to be convinced. Its not that I consider their support to be of no value, quite the contrary. However, it is senior managers, key bureaucrats, legislators and major benefactors who need to understand and accept the relevance and significance of our science. It is only then that taxonomy will have any chance of receiving the appropriate levels of support that it deserves.

On Monday in his Keynote address, David Mabberley spoke very eloquently on this matter. In that address David raised one important point that I had not considered before now. What he said was that perhaps we taxonomists would have better success in attracting funds if we asked our user-community what it is that they want of us, rather than us telling them what we think they need.

These matters that I have just been talking about for the past couple of minutes are germane to the discussions held at the ASBS General Meeting last night.

Current phase

The current phase of my career commenced in earnest around 2004. It was essentially a return to taxonomy. An important characteristic of this period was that I received an adequate level of research funding. This was yet another lucky break for me and I am much indebted to Steve van Leeuwen for making this happen.

I guess that the two highlights of this period were the publication of the *WATTLES of the Pilbara CD* and the WA Mulga revision which

has just appeared in *Nuytsia*. Let me say a few words about the Mulga work.

As some of you will know Mulga is the name applied to a group of taxa related to *Acacia aneura* which dominate much of the Australian Arid zone. You might also know that Mulga is a notoriously variable and taxonomically complex group of plants.

The revision of WA Mulga that Jordan Reid and I produced took 4 year to complete and I have to admit that this probably ranks as the most challenging taxonomic group that I have ever tackled. Our publication is by no means the end of the Mulga story, but I would like to think that it represents a reasonably good new beginning.

I feel happy that Jordan and I have provided what we think is a good foundation for future studies. We recognized 12 species which are aggregated into three major groups. So a practical and conceptual framework for understanding Mulga has been established.

We also attempted a couple of new approaches when doing this work.

Firstly, we deliberately decided not to use line drawings to illustrate the species. We wanted to see if we could impart better information from using just photographs, many of which show critical morphological features shot down a microscope. Only time will tell whether people consider that we achieved our goal.

Secondly, we wanted the word 'aneura' incorporated into the epithet for each of our new species. The idea behind this was that the name itself would give people a clue as to species affinities. Full credit goes to Alex George for coming up with the species epithets *Acacia aptaneura*, *caesaneura*, *incurvaneura*, and so forth. I think Alex's *coup de gras* was *Acacia mulganeura* for one of the species.

However, as I have already suggested there is a lot more work needed to be done on Mulga, for example:

- For practical reasons our study was confined to WA, so there remains much unresolved variation east of the 129th parallel.
- Also, despite some genetic work having been done on Mulga we still know too little about the fundamental genetic drivers that create and maintain the incredible variation

in this group. I suspect that resolution of this matter will most likely have implications to other arid zone groups where polyploidy, hybridity, apomixis and so forth are common.

The Great *Acacia* Debate

Well I guess that there is no way that I can finish this talk today without saying something about the Great *Acacia* Debate! This issue has plagued me for more than half my working life.

Now don't worry, I am not going to trawl through all the gory details of this sorry saga.

However, I think that it is important to understand that this was a nomenclatural argument, not a taxonomic one. Therefore, the *Acacia* debate was fundamentally different from the one that happened over *Eucalyptus* vs *Corymbia* for example. There was no debate about whether or not *Acacia* comprised one or multiple genera; the genetic work by Joe Miller and a number of other people around the world has pretty clearly established that *Acacia sens. lat.* was polyphyletic and needed to be split into multiple genera. The contentious issue was this: which of the segregate genera would retain the name *Acacia*.

Anyway, as I have already said, I do not intend going into the details of what happened. But I would like to say a few words about one matter that lay at the very heart of this issue, namely, the emotional context of the debate.

Although it is an oversimplification, this debate was often characterized as a fight between Australia and Africa, because on both these continents there were people who held strong emotional connections to *Acacia*.

The Africans, for example, would argue things like:

- The original type of the genus was from Africa.
- Their iconic flat-topped species of the veldt as being so quintessentially African.

Australians on the other hand would point to the fact that *Acacia*:

- It is our National Floral Emblem;
- Our official Colours are those of the Wattle, green and gold.
- We have a special day set aside each year to commemorate Wattle;

- *Acacia* blossoms feature prominently on our Order of Australia medals and ribbons that recognize outstanding achievements by citizens;
- An *Acacia* was probably one of the first two plant species ever collected by Europeans from our shores (in fact, not too far from where we are sitting now).

So clearly, there was a strong emotional content on both sides of this argument. However, for the Committees who had the thankless task of adjudicating this matter, emotion was a no-go zone. They, quite rightly, had to judge the merits of the respective arguments on hard facts aligned against the underlying principle of 'what best served the interest of nomenclatural stability'. Therefore, things like total species numbers and the amount of economic impact and things like that were the main criteria that they used in coming to their decisions.

You know, one good thing to emerge from what has transpired over the past 25 years is this. If anyone in the future asks you the question: 'What's in a name' then you certainly can point to the Great Acacia Debate for the answer. If nothing else this issue clearly demonstrated, that in this case at least, there is far more to a name than simply being a label, or a way of defining phylogenetic relationships, or a node for accessing and disseminating information.

You may be wondering why, of all the things I could have spoken about here today concerning the *Acacia* name issue, I have chosen to dwell on matters relating to emotion.

Well, the reason is this. I would be less than human if I did not feel a very sincere sense of sorrow for the Africans (and others) that they no longer have the botanical name *Acacia* for

their indigenous species which are now called *Vachellia* and *Senegalia*. I would have felt devastated had things gone the other way round in Vienna (2005) and Melbourne (2011).

Nevertheless, emotion aside, from a purely practical viewpoint I strongly believe that the correct decision was made with respect to the re-typification of *Acacia*.

So, where to from here. Well hopefully, this matter is now at an end. The *Vachellia* combinations have already been made for all the American and Australian species; the outstanding African combinations are now in press, and I am currently working with colleagues on the Asian species. Once all combinations have been made it does not necessarily follow that all herbaria worldwide will immediately adopt them. In fact I doubt that they will. However, over time the new names will inexorably become so deeply entrenched in literature that there will be no option but for the universal adoption of the new nomenclature.

Conclusion

So in conclusion let me reiterate that without question *Acacia* has provided me with fabulous work and life opportunities. The group presented an enormous intellectual challenge and I have received very considerable job satisfaction from trying to address this. *Acacia* provided me with ample opportunity to publish and to travel, both nationally and internationally. Over my career I have been privileged to work and interact with many fascinating and stimulating people, some of whom have become life-long friends.

So I once again I thank the Society for bestowing this honour on me. Thank you!

Australasian Systematic Botany Society Inc.

Society for Australian Systematic Biologists

Invertebrate Biodiversity & Conservation

Combined Conference 2013

"Systematics without Borders"

Venue: University of Sydney

Dates: 1st-6th December 2013

For announcements see: www.systematics2013.org

Articles

Sustaining Australasian plant systematics at a time of major achievement

Bill Barker (bill.barker@sa.gov.au)

Kevin Thiele (Kevin.Thiele@dec.wa.gov.au)

Ilse Breitwieser (BreitwieserI@landcareresearch.co.nz)

Various reports in this and the last Newsletter have made the point that Australasian systematics is in a paradoxical state.

On the one hand we are standing on the cusp of a significantly enhanced ability to deal with the systematics and taxonomy of Australasian flora and fauna, borne of a three-way marriage of informatics combined with new morphological and molecular evidence. Growth in information technology over the last two decades and the development of very significant pieces of national infrastructure on both sides of the Tasman mean that we are achieving research outcomes and contributing to documentation of our biodiversity in ways we've never been able to do before. The National Species Lists, New Zealand Organism Register, Australia's Virtual Herbarium, New Zealand Virtual Herbarium, Biodiversity Heritage Library and Atlas of Living Australia are all striking achievements, and have the potential to revolutionise how we do taxonomy and systematics in Australia and New Zealand. And of course, the similarly extraordinary global growth and success of molecular tools has extended the scope and power of systematics enormously.

On the other hand, despite these successes, and despite the fact that taxonomic research in Australasia continues to be a vital activity (so many species still undescribed, so many relationships still obscure, and so many pressures on the environment and living world), taxonomy continues to face ongoing and growing pressures. Cutbacks to funding, retirements or redundancies of staff at our research institutions, and reduced teaching and learning opportunities at our universities, have been issues for many years and continue to limit the documentation of Australia's and New Zealand's biodiversity. However, it is surely many decades since our collective of taxonomic institutions have felt so substantial a shrinkage in staff numbers and budgets over

a few recent years. Unless this is addressed, some institutions will struggle to continue to provide meaningful taxonomic work for years, eroding their current or potential usefulness and the investment in them.

None of these are new issues, and they have been discussed at length many times before, though rarely in a positive way that seeks to redress them. However, there is particular irony at the moment in the fact that we have now such marvellous tools to do taxonomy, but such limited capacity to use them.

In this context, a proposal was discussed at the recent Perth meeting of the Australasian Systematic Botany Society and the Canberra meeting of the Council of Heads of Australasian Herbaria to conduct an International Peer Review of Australasian Plant Taxonomy¹. The aims of such a Review would be fourfold:

- To establish and demonstrate the standing of Australasian taxonomic research in an international context
- To review Australasia's taxonomic research infrastructure, highlighting strengths, weaknesses, gaps and synergies
- To identify opportunities for capitalising on the infrastructure we have built to take taxonomic research in Australasia to new levels of effectiveness and efficiency
- To develop a taxonomic investment plan for the next decade to take to government and other funding sources

The Council of the Australasian Systematic Botany Society gained endorsement from the last AGM to take a leading role in the scoping, establishment, and roll-out of such a review, with support and help where appropriate from key promoters of our science, including CHAH. While many details remain to be resolved, we believe that a Review such as this is timely and

¹ An important question still to be resolved is whether such a review should focus on plant taxonomy or on taxonomy in general.

important. Government and the community need direction and advice on these matters, and that direction and advice should come from us. Importantly, the Review needs to be forward-looking in scope and positive in outlook. There is much we can be proud of, and much we can look forward to in the coming decades. However, we need to establish and promote a professional business case for taxonomic research in Australasia. The trends currently are not good, but there is no reason why these

cannot be turned around.

The next steps involve the formation of a pro-active Steering Group representing key partners, members and other individuals. We are aware that the Review needs to be very open and transparent, and needs to have community buy-in to be successful. Please email any or all of us with your ideas and concerns during this process. And please watch this space.

Whither Australian plant systematics?

David Mabberley

Royal Botanic Gardens and Domain Trust, Sydney

¹Without wishing to prepare a survey of the earliest work on Australasian plant systematics and the wrangle over Dutch or British claims to be first, there is one obvious observation, namely that, as with North America and all of the tropics save southern India and eastern Indonesia, early work was done far away from where the plants grew, in our case, largely in the United Kingdom, but also in France and to a lesser extent the Austro-Hungarian Empire.

From the First Fleeters in Sydney, Surgeon White's plant collections went to Sir James Edward Smith who published desultorily on them with his *Specimen of the botany of New Holland* (1793). Despite the collections made by the Spanish Malaspina voyage of the late eighteenth century, largely spying in Australia, the first real push to gain knowledge of the region's plants came in the aftermath of Matthew Flinders's circumnavigation of Australia in the Investigator (1801-5), a journey coinciding with the voyage of Baudin in the Pacific for Napoleon's France (Mabberley 1985).

In the event, the work of Labillardière, who had sailed with Baudin and even met Robert Brown, Flinders's naturalist (that is to say botanist, zoologist and geologist), came out first as *Novae Hollandiae plantarum specimen* of 1804-6. In England there was a general agreement that the work of Sir Joseph Banks's protégé, Robert Brown, was not to be scooped by others, while the country waited

for the appearance of a magnificent work on Australia's flora (Mabberley 1985: 159). This was to be similar in style to that of Sibthorp's monumental *Flora graeca* (1806-40) then in production, both works being illustrated by no less an artist than the incomparable Ferdinand Bauer, who had been with both Sibthorp in the Mediterranean and Flinders in the Pacific.

As is well known this was not to be. Just as with Sibthorp's work, the full-scale Flora was to be preceded by a two-volume Prodrômus, that for *Flora graeca* was published by Smith (1806-13). By 1809 Brown realised the funding was running out and, in the end, despite all that had been expended on the voyage, there was a 'freezing indifference', to use Brown's words, to the continued funding of Brown's work on the Australian book. So in 1810 his extraordinary *Prodrômus*, only part done (only pp. 145 – 590 of the first volume appeared) – at his own expense. Badly printed on poor paper with, as Smith's *Prodrômus*, no illustrations, yet with the re-introduction of a natural system of classification to English readers, it was to be reckoned by Joseph Hooker in 1859 as the book that 'has for half a century maintained its reputation unimpugned, of being the greatest botanical work that has ever appeared'.

But we have to ask what this work was being done for, for whom and who was paying for it – and why, because this all has, I believe, some lessons for us two hundred years on.

The aim of Flinders's expedition was essentially colonial, part of the push to ascertain whether the new colony of New South Wales (then the whole of the eastern half of the continent) could

¹ The text of David's keynote talk to open the 2012 ASBS annual conference in Perth (Fig. 1), with minor changes and references added.

become less reliant on the public purse in Great Britain. Banks's instructions to his naturalist make this quite clear. Recently I have found that Brown took this more than seriously because in his hither-to neglected carpological collections and manuscripts in the Natural History Museum in London is evidence of the enormous effort he took to assess the possible economic value of, for example, nutmegs in tropical Australia and Tasmanian pepper from the then Van Diemen's land.

The Admiralty paid for the voyage, hurriedly despatched when it became known that Napoleon had already sent Baudin, though Napoleon's motives were certainly at least in part different – and included pandering to his wife's avariciousness with regard to Australian exotica! With Flinders's eventual incarceration by the French in Mauritius and the ignominious return of the patched-up, having been condemned, *Investigator* to Liverpool in 1805, Banks secured public funding to employ Brown to work up the botanical results. The geological ones which could have led to the opening up of iron-ore lodes and other mineral resources were essentially ignored (Mabberley 1985).

Although Brown's work on Australian plants, and to a very small extent New Zealand ones, seeped out in his later publications, nothing further of the grand plans, save fifteen privately published plates by Ferdinand Bauer, ever appeared. This had all been, in modern terms, a public-private partnership with Banks providing the herbarium and other infrastructure, the government the salary. It failed.

Only with the next generation was there a

Flora for New Zealand in J.D. Hooker's *Flora Novae-Zelandiae* (1852-5) followed by his *Florae Tasmaniae* of 1855-60), but the first complete compendium of the Australian flora was the magnificent *Flora australiensis* (1863-78) of George Bentham, still of course the only printed one of the continent's entire vascular flora. The motive this time was inventory of the colonies and was in the context of the other great Floras of the time consonant with the imperial aspirations of Kew under the Hookers (Mabberley 2011). The treatment of Ferdinand von Mueller by Kew was perhaps less than generous, it being agreed he send to London his collection section by section for Bentham to work on, though the British government noted that for paying for the project, 'adverting to the wealth of the several colonies....it may be left to the enterprise of the Colonies themselves'. And so it was, with each colony putting in 250 pounds per volume. Again then *Flora australiensis* was another public-private partnership, though heavily skewed to the private, with Bentham giving his own time, while still working with Hooker on *Genera plantarum* and a British flora.

Childless, Bentham had retired as a prosperous lawyer in 1833 to devote his life to botany, his own herbarium eventually to come to Kew, where he worked daily without sustenance in the herbarium (Jackson 1906). The colonies, through a grant, paid for the publication and Kew provided access to literature etc. in the Library, although in fact that and the herbarium there were still really the private collection of William Hooker, to be purchased for the nation only later. But the public-private partnership



Fig. 1. David Mabberley opening the Perth conference. Ph. Russell Barrett

worked.

All of this was inventory but, stepping back to Brown in 1810, he found, at the death of Jonas Dryander, new employment directly working for Banks, so that he was able to produce his penetrating essay on the plant geography of Australia (Brown 1814) in Flinders's account of the *Investigator* voyage in 1814 (see Mabberley 1985). Brown increasingly moved away from Flora-writing and inventory to such analyses, later of tropical Africa and later still the Arctic, but then moving on to cell biology and the nature of fertilisation, palaeontology and other so-called 'philosophical' matters. He was a key figure in the professionalisation of science in Britain and the putting of the Royal Society of London on a 'scientist' rather than 'gentleman' footing. Much of what he stood for was consonant with the secularisation of the universities and the rise of experimental sciences, though he declined chairs in both Scotland and England. He was also an internationalist with a vast correspondence and conference-going habits, foreshadowing today's pattern of working.

But it was to inventory that Kew and the colonies clung (Thisleton-Dyer 1905). Mueller (1882) at the botanic garden in Melbourne produced his *Systematic Census of Australian Plants*, of which, in thanking the author for a copy, Bentham wrote in 1883,

'with regard to science, it grieves me that you should have devoted so much time to a work which, botanically speaking, is not only absolutely useless, but worse than useless',

encouraging Mueller to desist in the

'vain endeavour to attach the initials 'F. v. M.' to so many specific names good or bad as possible and to devote your energies, your great abilities, and the splendid materials at your disposal to the completion of such classical works as your *Eucalyptus* and similar monographs'.

Many of von Mueller's publications are actually concerned with the practical applications of botanical work and, indeed, those based in botanic gardens were deeply involved in demonstrating the value of their by now publicly-paid work in this way. It was inevitable that with the ups and downs of colonial and later state finances after 1901, there would be mixed fortunes for plant

systematics and indeed serious study of plants in Australia. For example, in New South Wales, Joseph Maiden's successor Darnell-Smith at what is now the Royal Botanic Garden Sydney, wrote to his predecessor in 1925 that:

'the Government does not seem to realise the value of what has been accomplished [by Maiden]....[but] I hope that you will live to see the result of your life's work steadily progressing in scientific value and in economic usefulness'.

Sadly Maiden died within the next few months.

After *Flora Australiensis* came a series of State Floras except for Western Australia, prepared by botanists employed by the States, though amateur taxonomists, notably the retired journalist, J.M. Black set to work in South Australia, with the first edition of his State Flora appearing 1922-9. It had been Maiden in 1907 who had perhaps been the first to moot a new Flora for the nation but despite their efforts it was not until Hansjoerg Eichler (d. 1992) in South Australia encouraged his staff to work across the country in terms of revisions that would be materials towards a Flora of Australia, the subsequent history of which has been set out by Alex George and others in the preface to the second edition of the first volume, with the funding coming from the federal government in the main.

In the early 1990s a global group of systematists of all kinds set goals for the discipline, eventually expressed as the *Systematics Agenda 2000*. Progress since then was evaluated 2009-10 in a series of workshops sponsored by the US National Science Foundation. This review re-iterated that the three cardinal purposes of the Strategy, namely

- the discovery, description and inventory of diversity ('what'),
- the analysis and synthesis of information derived from this into a predictive classification system reflecting evolution, and
- the organisation of this information in a way best suited to the needs of science and society,

remain the core activities of the discipline (Daly & al. 2012). However, although there had been a major advance in activity in phylogenetic

work in almost all groups, the first activity – the gruntwork of systematics was still not really keeping up. Making the information available to users through comprehensive joined-up databases had not achieved as much as had been hoped. There was a call for ‘updated credit models’ rewarding more than just peer-reviewed publications, a line which it must be said has already been crossed in China at least.

The review of the Systematics Agenda (Daly & al. 2012), however, moved to add a new Systematics Agenda 2020 mission, namely ‘to understand evolutionary mechanisms that explain the origin, maintenance, and loss of biodiversity’, i.e. process rather than just pattern. This is an attempt to square the circle in that it smacks of attempting to combine some kind of scientific respectability according to the physics-envy model with apparently practical outcomes. Nonetheless, they also add, apparently rather loftily,

‘Given that phylogenetically based investigation of biological process seems to have eclipsed the importance of classification as a motivating theme in systematics, the role of classification in the future of our science merits further consideration in the systematics community’.

But what are the really big questions in plant systematics? I am reminded of a paper written on a related field some years ago by Dan Janzen (1986) on ‘The future of tropical ecology’. He wrote,

‘Whether there is a future for tropical ecology, and of what it will consist, does not lie in the unveiling of yet another intricate plant-animal interaction, in the application of technological marvels, or in the discovery of a crop plant that can be grown with high yield on rainforest soils. The answer does not lie in meticulous analysis of what we know to date. Yes, we need these things. But the real future of tropical ecology lies in whether, within our generation, the academic, social and commercial sectors can collaboratively preserve even small portions of tropical wildlands to be studied and used for understanding, for material gain, and for the intellectual development of the society in which the wildland is embedded’.

At the same time, then, for plants we have the Global Strategy for Plant Conservation

(Secretariat of the Convention on Biological Diversity [2011]; Sharrock 2012) – with a goal of an online Flora of all plants and knowledge of the conservation status of all known plant species. For this we need to understand species circumscriptions, which in the main still rely on the ‘eye’ of the taxonomist and are therefore seen to be subjective. However, many papers in this symposium address this topic. What is also clear from this symposium is that in certain parts of our region the Flora is rather well known and some groups are being ‘reploughed’ whereas a ‘gap analysis’ of the very basic needs for conservation work have not been documented in other parts. In Western Australia alone 1150 new vascular plant species have been recognised since 1999 with over another 1500 ‘informally’ named – in 20 years the number of species recorded from the Kimberley has increased by 50% (ASBS Perth Conference Committee 2012). Intensive Flora work often reveals undescribed species represented by specimens long-slumbering in herbaria (Mabberley 1991), in the case of the *Flora Mesoamericana* and *Flora of Tropical east Africa* some 15-20% of taxa now recognised.

At the same time there is a demand for practical information on economic plants and their diseases, most recently perhaps myrtle rust, but also huanglongbing, which infects *Citrus*. So, if our international obligations on conservation issues and economic ones are like this, what **are** the big questions? How are we addressing them at an Australian or Australasian level?

Is what we are doing what the people of the Asia-Pacific Region want? Do we know what they really want? Have we really asked? Have we yet truly moved beyond the ‘cabinet of curiosities’ or in more esoteric endeavours ‘counting how many angels stand on the head of a pin’?

If we have not asked, is it surprising that we find ourselves whinging that plant systematics is not adequately supported? That we are losing taxonomic positions in universities? That research institutes are squeezed or closing down? That botanic gardens are being squeezed or pushed into being theme-parks?

Are the ‘big questions’ really those concerned with our obsessions with that slippery subject,

biogeography? What are the big questions that should be tackled in say botanic gardens, where increasingly world-wide taxonomic expertise is being concentrated (albeit as relict populations) on the one hand and the impact-factor chasing culture that is universities?

In the past gentleman naturalists could do as they wished. We have seen how the public-private partnerships of the past went, but it seems clear that the ideology of doing your own thing – at the public expense – is no longer an option.

Two hundred years ago, the imperative was the economy. I do not think – as Bill Clinton so memorably put it in his own words – that that has changed. What have we got to offer and is it good value? Philanthropists give more money to art galleries than they do to biology departments (not many botany ones left) or botanic gardens: why is this? Why do they not appreciate our ‘big questions’, our ‘why’ and ‘how’ questions? Why do they not understand that even the ‘what’, ‘what is where’ and ‘what is it related to’ questions have not been dealt with? Because we have not explained ourselves adequately.

As it stands, botanic gardens, as the longest-surviving of all scientific institutions, have the opportunity to take the long view: universities cannot, or at least do not, though I think we could learn something from our arts and humanities colleagues even there. Even so, there are concerns that already skill-bases are being lost, particularly in large genera such as *Acacia* and *Eucalyptus*, but also grasses, leave alone mycology. It may well be that the ‘what’ questions can *only* be dealt with in botanic gardens and that, in terms of the nation’s domestic and international agendas in that sphere, these investigations will inevitably be concentrated there, while universities can only deal with the ‘how’ and ‘why’, albeit in three-year chunks so as to be able to compete internationally with similarly constrained workers in other countries in an effort to show we are ‘good’ at science.

But is this really what the world wants? I believe that what the nation needs is a strategy that meshes with the global responsibilities of Australia and New Zealand, in our case at the moment the Conservation agenda. But I have

concentrated so far on Australasian plants. But we are part of the Asia-Pacific, so it is good to see some papers in this Symposium concerning plants in the greater region.

However, only by coming together and presenting a united front, when we know what the people want, can we sway governments to support our endeavours. I suspect that what people want is to maintain some wild vegetation and to know something of what’s in it (some people – a small minority wanting to know a great deal about this), to have pleasant green cities and private gardens, but what they are much more concerned about, as can be seen by national and state finances for areas of expenditure allied to ours, is health, food and water security. For us, this probably translates to crop wild relatives, garden plants and a knowledge of species for restoration of degraded landscapes, plants that can de-toxify and remediate air, earth and water, biofuels and medicines. Are we really addressing these things?

In other countries, moves have been made in these directions but those are mainly countries with miserable depauperate floras like the United Kingdom, where all the ‘what’ questions have been answered decades ago. A number of reports have been prepared and the significance of the non-university sector has been stressed over and over again. Particularly striking is the importance placed on so-called ‘volunteer scientists’ – one has to think of J.M. Black or even George Bentham in this context. Effectively what is being mooted is the exploitation of people’s hobbies, suggesting that the work people like Robert Brown did in professionalising plant systematics is now disintegrating. In the UK it has now been proposed that there be a Taxonomy Co-ordination Committee (which has a slight French Revolution Reign of Terror ring to it I fear) (Natural Environment Research Council 2012) to come up with a national strategy.

The idea is to define the nation’s capability in terms of systematics and the country’s contribution to the global exercise. It is argued forcibly that systematics is critical to UK environmental sciences and there is pressure on the equivalent of ARC to support PhD training. Although I am loath to admit this, in

following the UK, I think this is probably what we have to do here, though I would counsel against diluting plant science and mycology with animal matter.

Such a committee could build on what we have got, but provide some strategic planning in the light of market research and our obligations to both neighbouring countries and international conventions. I am aware that in some senses we have been here before - and we have the almost intractable problem of the states to contend with, but without pushing the agenda at the national and international level, we are I believe, lost. As a first initiative for the Committee I would commend the International Peer Review mechanism, which we have successfully used to benchmark and modernise the Royal Botanic Gardens and Domain Trust in Sydney. Findings of such external scrutiny carry far more weight than internal protestations.

But combined with this, we need advocates in government and in the rest of our region. Two hundred and more years ago it was Sir Joseph Banks with his fingers in every kind of government pie, yet a competent botanist, who championed the cause. He was also a great delegator: who is our champion today?

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KeyBase – teaching old keys new tricks

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KeyBase (<http://www.rbg.vic.gov.au/keybase/index.php/key>) is a new, web-based system for managing and deploying interactive, dichotomous keys. Based loosely on ideas first developed for the Lucid Phoenix project at the University of Queensland¹, the core of KeyBase is a relational database of key couplets. Keys contributed to KeyBase are broken into their elements (couplet number, lead text and goto/taxon name) and loaded to a set of related tables. Handled in this way, keys in KeyBase can be deployed using a variety of traditional and non-traditional styles, filtered, combined, and linked into superkeys.

Keys in KeyBase are arranged into projects. To date, the largest of these is a project to collate and create a set of keys to all taxa of flowering plants in Australia. Other projects underway are collating keys to the plants of Queensland, Western Australia and Sri Lanka. New projects can be easily created by registered KeyBase users.

Keys may be contributed to KeyBase in a variety of formats. The simplest of these are text files with the three elements of a lead separated by tabs or as comma-separated values (csv). A simple key may be represented thus:

- | | | |
|---|--------------------------------|------------------------------|
| 1 | Leaves opposite | 2 |
| 1 | Leaves alternate | <i>Nielsia oppositifolia</i> |
| 2 | Flowers blue, ± 5 mm diam. | |
| | <i>Nielsia caerulea</i> | |
| 2 | Flowers yellow, 10–15 mm diam. | |
| | <i>Nielsia lutea</i> | |

or

- 1,"Leaves alternate", 2

¹ see <http://www.lucidcentral.com/en-us/software/lucidphoenix.aspx>

- 2," Flowers blue, c. 5 mm diam.", "Nielsia caerulea"
2," Flowers yellow, 10-15 mm diam.", "Nielsia lutea"
1,"Leaves opposite", "Nielsia oppositifolia"²

Keys may also be uploaded as Lucid Phoenix .lpxk xml files (produced by deploying a key using the Phoenix Builder). Note that key couplets do not need to be kept together in either format (cf. couplet 1 in the csv representation above). The usual rules of dichotomous keys must be maintained (every lead must go somewhere; every couplet must be led to; cycles and loops are not permitted). Keys do not need to be strictly dichotomous – couplets may comprise more than 2 leads.

Keys in KeyBase may be displayed as coupleted keys, as indented keys, or using the KeyBase Player (Fig. 1). The Player has several advantages over traditional formats for keys: at all stages of the identification, taxa that are still in play and taxa that have been discarded are displayed in lists, the steps (history) of the identification are maintained, and steps can be readily retraced. The Player also provides for illustrations to be attached to key leads.

When keys are contributed to KeyBase, the contributor is required to provide a small set of metadata describing the key, such as source and attribution, and geographic and taxonomic scope. Taxon scope is used to link keys together: a contributed key to species of a genus will be automatically linked to instances of that genus in other keys. Users of KeyBase can use the forward links after taxon names to

² In csv format, elements with internal commas must be enclosed by quotes; quotes are optional for strings without internal commas

Flowering plants of Australia: Genera of Caesalpiniaceae

Key detail

Key player

Bracketed key

Indented key

[start over](#) | [back one step](#)

Current node

Leaves imparipinnate, digitate or unifoliolate



Leaves paripinnate



Path

1. Leaves compound, rarely unifoliolate and then usually pungent-pointed apically
2. Leaves simply pinnate, rarely unifoliolate
3. Pending question

Remaining entities (16)

Cassia ▶
 Ceratonia siliqua
 Chamaecrista ▶
 Crudia ▶
 Cynometra iripa
 Gleditsia triacanthos
 Haematoxylum campechianum
 Intsia bijuga
 Labichea ▶
 Maniltoa lenticellata
 Parkinsonia aculeata
 Petalostylis ▶
 Senna ▶
 Sindora supa
 Storckliella australiensis
 Tamarindus indica

Discarded entities (6)

Barklya syringifolia
 Bauhinia ▶
 Caesalpinia ▶
 Delonix regia
 Erythrophleum chlorostachys
 Peltophorum pterocarpum

Fig. 1. A page from KeyBase showing the Key Player function

move from one key to another.

Filtered keys

An advantage of storing keys in a relational table structure such as KeyBase is that it allows keys to be manipulated in ways that add power and convenience to an identification. In particular, a key may be filtered to produce a subkey for a reduced subset of taxa.

The greatest power comes from geographically filtering keys. When keys to large, widespread genera such as *Acacia* or *Eremophila* are used traditionally to identify a specimen collected from a known locality, many couplets need to be addressed and choices made to exclude taxa that are probably geographically out of contention for the specimen anyway. If a specimen was collected in the south-west of Western Australia, it is unlikely that it will key to a taxon endemic to north-east Queensland. In large genera, this problem makes identifications

laborious, and increases the chance of an error being made (possibly through sheer exhaustion).

KeyBase solves this problem by allowing keys to be geographically filtered¹. The steps are as follows:

A user specifies a geographic locality for their identification. KeyBase calls a web service (provided e.g. by the Atlas of Living Australia or Australia's Virtual Herbarium), to return a list of potential taxa occurring at or near the specified locality

KeyBase marks the potential taxa in the key, and removes all others

The key couplets are collapsed so that only couplets that discriminate the remaining taxa are kept

¹ Note that at the time of writing, the geographic filter in KeyBase is still under development.

A filtered key, to only the subset of taxa occurring at the locality, is provided

Experience with a proof-of-concept filtering system in Western Australia has shown that filtered keys are much more accurate and effective for identification, as the chances for error are substantially reduced.

Two caveats are important. Firstly, a filtered key will clearly only be as good as the service that provides the list of likely taxa. Taxa collected outside their normal range or that have not yet been collected near the target locality may be excluded before the key is produced, leading to an invalid key. This problem could be partially overcome by using a modelling service to return a list of taxa likely to occur at the locality. In cases where a user suspects that a filtered key is not working, it will be important to try the identification on the full key, to be safe.

The second caveat is that a subkey that has been filtered from a larger key may in some circumstances not be a very good key. For example, a large key may separate two groups of taxa at an early couplet using an inconvenient character such as ovule number. A filtered key to two taxa, one in each group, would then use ovule number to separate the taxa; the taxa may, however, be readily and conveniently separable on the basis of simpler characters such as flower colour or leaf shape. In general, filtered keys are likely on average to be inferior to bespoke keys for small subsets of taxa. However, the convenience of being able to produce filtered keys on the fly for any locality is likely in many circumstances to make filtered keys worthwhile despite this limitation.

The Flowering Plants of Australia project

An early goal for KeyBase is to collate a full set of keys to all taxa of flowering plants in Australia, providing a convenient one-stop shop for identification. The project is proceeding in the following stages:

1. Upload to KeyBase the key to families of flowering plants from Edition 2 of Volume 1 of the *Flora of Australia*
2. Upload all keys to genera within families, and species within genera, from the published volumes of the *Flora*
3. Upload all available keys from unpublished Flora treatments held by ABRS or by

treatment authors

4. For families not yet covered by either published or unpublished Flora treatments, upload keys to genera from *Flowering Plants in Australia* (Morley & Toelken, 1983) or, where available, from treatments in Kubitzki's *Families and Genera of Vascular Plants*.
5. Upload keys from revisionary treatments in the Australian herbarium house journals, *Australian Systematic Botany* and other appropriate journals
6. Where appropriate, upload keys from State floras (this will be appropriate in cases where all genera in a family or species in a genus occur in the State)
7. Create and upload keys to all taxa for which there are no available keys.
8. Check, edit and update all existing keys, to (a) incorporate new taxa published since the key was written, (b) update and resolve taxonomies to match the Australian Plant Census and (c) correct any known errors.

At the time of writing, steps 1 and 2 have been completed. Discussions are underway with ABRS and treatment authors for access to keys from unpublished Flora accounts (step 3). All suitable keys from *Flowering Plants in Australia* have been uploaded (step 4). Several journals (*Austrobaileya*, *Journal of the Adelaide Botanic Gardens*, *Telopea*, *Nuytsia*, *Australian Systematic Botany*) have been trawled for available keys from revisionary treatments (step 5), while others are in progress. Steps 6-8 have not yet commenced.

The *Flowering Plants of Australia* project currently comprises 948 keys (the Families key, 170 keys to genera within families, and 777 keys to species), covering nearly 10,000 species in 1230 genera. We believe it is achievable, with help from the botanical community, to achieve a complete key to the vast majority of Australian species within 18 months.

Why bother with dichotomous keys?

A frequently asked question when dealing with new ways of handling dichotomous keys is – why bother? Why not just throw away dichotomous keys and concentrate instead on matrix-based (so-called interactive) keys?

The answer is two-fold. Firstly, there are many

more working dichotomous keys already available than matrix-based keys. This is partly because the amount of work required to complete a workable matrix-based key is usually several orders of magnitude greater than that needed to write a workable dichotomous key. Despite easy access to matrix-based key systems, botanists continue to write and to use dichotomous keys for the simple reason that they still work well.

Secondly, both matrix-based keys and dichotomous keys have advantages and disadvantages. The obvious disadvantage of dichotomous keys is the unanswerable-couplet problem. However, with a good key and answerable couplets, dichotomous keys in many groups provide on average more accurate identifications than matrix-based keys, because they are less prone to errors caused by false coding. More subtly, good dichotomous keys are better learning devices, providing a window into an understanding of critical characters in a group.

Given that dichotomous keys and matrix-based keys are both valuable identification tools, a good outcome would be to have parallel systems – a (relatively easily achievable) complete set of dichotomous keys to flowering plants, while at the same time building (a longer goal) a complete matrix-based key. A future *ASBS Newsletter* article will concentrate on the second part of this, based around the ALA-funded IdentifyLife system and a new approach to developing an maintaining matrix-based keys.

KeyBase and other Australian taxonomic e-infrastructure

KeyBase has the promise to become an important part of Australia's taxonomic infrastructure. A complete key to all taxa would be a useful addition to our other resources – APNI, the APC, AVH, ALA, BHL¹, online *Flora of Australia* etc. Importantly, these resources are increasingly becoming linked through web services. An example of this is described above, with KeyBase using ALA and AVH services to geographically filter keys. A future enhancement of KeyBase will provide

on-the-fly listings of taxa in the APC that are not represented in any given key, and taxa in the key that are not accepted by the APC (both good pointers to edits that need to be made).

Conversely, we see KeyBase as an important resource for other projects. KeyBase can be used as a specialised, centralised service for serving identification keys to, for example, the ALA and national and State Flora projects. Supporting a single, community-edited and managed repository of keys provided by a specialised service is likely to be considerably less work than supporting multiple, independent and isolated local systems.

How to get involved

The goal of the *Flowering Plants of Australia* project in KeyBase – a complete key to all Australian taxa – can only be realized with community support and involvement. At the moment, in order to provide an early critical mass of keys, most editing and uploading has been done by a small group of people. More are needed.

Anyone can register to become a KeyBase contributor. Once registered, it's easy to contribute keys, whether published keys that have not yet been uploaded, or unpublished keys you've had sitting in your bottom draw for years.

Two particular tasks will need involvement from a wide variety of taxonomic experts. The first is to check the *Families of Flowering Plants* key for errors, as this is an important root key for the entire project. To that end, KeyBase has been used to produce a series of small keylets, one for each family, that list the couplets that lead to that family in the key. These provide a convenient way to trace through the key to check that all representatives of a family will key out and that unusual or variant characters or taxa are not neglected.

The second task is to check existing KeyBase keys to ensure that all accepted taxa in the APC are covered, and to fix errors caused by changes from older to new circumscriptions. KeyBase keys can be easily checked out by registered users, edited, then checked back in. KeyBase logs all changes and edits made by registered users, so contributions can be tracked and acknowledged.

¹ Australian Plant Name Index, Australian Plant Census, Australia's Virtual Herbarium, Atlas of Living Australia, Biodiversity Heritage Library

And of course, a significant contribution will be to use KeyBase for identifications, and to report or fix any errors found.

Planning and management of the Flowering Plants of Australia project is being coordinated through a TRIN Wiki page. To read more about how you can best contribute to the goal of a complete key for all flowering plants in Australia, please go to <http://wiki.trin.org.au/KeysToTheFloweringPlantsOfAustralia> and get involved.

The future

Many improvements and extensions to the KeyBase infrastructure are planned, and will be developed as time permits. Future possibilities,

in addition to the geographic filtering and links with APC discussed above, include creating a KeyBase key building editor (to allow keys to be conveniently authored or edited natively in KeyBase), a wider set of download formats (allowing, for example, keys to be downloaded in the formats required by different journals), automatic linking of key terminology to online glossaries, and provision of rich illustrations to enable easier use of KeyBase keys.

Note in proof:

At the time of writing a small problem has been identified for some keys uploaded to KeyBase, which has resulted in some leads being truncated when an en-dash is encountered. This problem will be fixed in the near future

A post-Entwisle view from Kew¹

As I write, I'm not quite departed from Royal Botanic Gardens Kew, but you could say I'm in the lounge, a rather busy room with all the comings and goings. Richard Deverell has been Director for over two months, replacing Steve Hopper after his productive six-year stint. While not a scientist, Richard was a Trustee of Kew for six years and ran a large slab of a similarly complex and iconic UK organisation, the BBC.

Richard has been a pleasure to work with, and I'm still thoroughly enjoying Kew – and London. So why then am I heading back to Australia to be Director and Chief Executive of Royal Botanic Gardens Melbourne? Firstly the chance to be head of Royal Botanic Gardens Melbourne doesn't come up that often: Phil Moors, as you know, was there for 20 years. The impeccably landscaped garden in South Yarra, now coupled with the inspirational Australian Garden at Cranbourne, is a potent mix. Add to this the rich botanical collections and wonderful staff, and it's hard to resist returning to my home State.

Secondly, I have missed being head of a botanic garden. While I have a great job here at Kew looking after more than half of the world's most

famous botanic garden, I want to get back to being captain of the ship. I enjoy the hustle and bustle, the politics, and the media side. Finally, there is the coffee... As I'm fond of saying (particularly in London) Melbourne's coffee is the second best in the world, after Italy.

My departure from Kew has allowed (or at least made it easier for) Richard to make a few changes to his executive group. A Director of Science position will be advertised next week. This newly created role will look after the Herbarium, Library, Art and Archives; Jodrell Laboratory; and (extracted from my Conservation, Living Collections and Estates directorate) the Seed Conservation Department/Millennium Seed Bank.

Early next year Kew will advertise for a Chief Operation Officer/Director of Corporate Services and a Director of Kew Gardens' Horticulture. The latter role is an expanded Curator of Kew Gardens, including more landscape planning and project management. This role is currently within CLCE, as is the Head of Wakehurst Place, also to be part of the new executive group. Finally, Estates will move to Corporate Services.

For those of you interested in herbarium matters, the Keeper of the Herbarium position has been filled on a temporary basis, by Dave Simpson. It won't be filled permanently until the Director of Science is in position.

So that's the view from the arrivals/departure

¹ A postscript to my post-Olympic piece in the last issue. If you are interested in further musings on my transition from Sydney to Kew to Melbourne, see my later blog posting 'A year (or two) at Kew' (30 Jan 2013) at talkingplants.blogspot.com.au/

lounge. From my office I'm watching the Palm House fade into late autumn gloom (it's after midday after all) and leafless trees etch themselves into the grey sky. There is a lot to like about Kew, including the oddly attractive

winter garden. I expect I'll miss the climate, but not the weather.

Tim Entwisle
in transit, 26th November 2012

Obituary

Elizabeth A George – 'The turner of hearts' to the genus *Verticordia*

Hazel Dempster¹

Elizabeth George, and her desire to know and understand the genus *Verticordia* so she would be able to grow them successfully in her new garden in Lesmurdie in WA, unknowingly set up what must be one of the most remarkable voluntary community research programmes carried out on any genus in the history of the Western Australian flora.

the western region of the Australian Society for Growing Australian Plants (ASGAP). She met up with Les Norton who introduced her to the WA's wonderful bushland and its flora and his special interest in *Verticordia*. This led Elizabeth to become fascinated with their beauty and diversity as well as their ability to thrive in harsh conditions.

Elizabeth Anne Sykes was born in Tasmania on February 15th 1935. Her interest in the bush began as a child during holidays spent in the country with her relatives, further increased by country areas experienced in her places of employment.



Fig. 1. Elizabeth and her favourite *Verticordia*, *V. oculata*.

Ph. Hazel Dempster

In 1970 with husband Ian Berndt and two young sons Stephen and Tim, Elizabeth moved to WA from Victoria when Ian was appointed manager of Myers in WA.

She soon started to develop a wildflower garden at their new home in Lesmurdie and in 1973 joined the Darling Range Branch of the Wildflower Society of WA (WSWA) which was

An idea sparked within her when she became frustrated with the shortage of information about the genus available to interested amateur botanists and enthusiasts. Her lack of understanding of the botanical terms encountered added to the difficulty of identification. On being advised that a

basic botany course would help, Elizabeth ventured to undertake studies to assist with her newfound interest. With much trepidation she undertook the Certificate of Horticulture at Bentley Technical College which in those days concentrated on knowledge on the WA flora and its role in horticulture. Botanist Eleanor Bennett was the first-year lecturer and encouraged the idea formulated by Elizabeth to make a small personal reference collection of

² Wildflower friend and Life Member of Wildflower Society of Western Australia

Verticordia species to learn more about them. She advised that a flora licence would be needed to collect specimens, and descriptions could be obtained from botanist Alex George at the WA Herbarium who was interested in the genus.

After visiting Alex at the WA Herbarium to only explain the planned project, Elizabeth somehow left his office persuaded to embark on a much larger, statewide collection of specimens which would be of great benefit to others and would assist his proposed review of the genus. Alex agreed to provide the botanical descriptions and verify the identification of all specimens collected. She was also introduced to the specimens of *Verticordia* in the Herbarium's fledgling Reference Collection.

"I walked out of the office shell-shocked. What had I agreed to? Where to start?" were her thoughts.

Alex had suggested that Wildflower Society members might assist. This discussion was the starting point to gathering information on how the specimens would be collected and presented. Les Norton immediately pledged to collect for her. Her first appeal, to the Darling Range Branch of the WSWA, resulted in Myra Hamilton offering to assist with collection and identification from the local Kalamunda district. Myra became Elizabeth's firm friend, assisting the setting up of the programme and subsequent specimen preparation, and was her early travelling companion as they crisscrossed the State following up sightings.

A request from Elizabeth Berndt appeared in the WSWA Newsletter vol. 17 (3), 1979, page 34:

"I am attempting to compile descriptions of each *Verticordia* species including locality, habitat, colour of flower, plus a photograph. I will require collections from a particular area not cultivated over a 12 month period. One piece, sufficient to show any variation of leaves and flowers, should be pressed by enclosing the specimen in a double sheet of newspaper between sheets of corrugated cardboard. Several of these can be pressed by a medium weight. Each specimen should have a number, date, collector's name, species name (if known), approximate locality, height and width of plant, colour of flower and soil type. Would any member or branch (including from other states) contact me to enable co-ordination of collection."



Fig. 2. Elizabeth George on her travels with ASGAP
Ph. Hazel Dempster

After her visits to country branches and centres at the end of 1979, some 32 people had registered and through further word of mouth and coercion, some 250 participants, all voluntary, became directly involved in what was now called the *Verticordia* Reference Collection (VRC). All collectors were covered by a licence granted for this specific purpose.

As Elizabeth's original thoughts were the growing of *Verticordia*, the *Verticordia* Growing Group (VGG) was formed amongst interested WSWA growers to run in conjunction with the collection programme to propagate the species as they were found. Jeff Mountstephen

was group leader and, along with Norm and Pat Moyle, eventually established large *Verticordia* gardens, and many other in the group grew *Verticordia* successfully. Some of the resulting plants were distributed to country participants to trial in different soils.

Valuable information from these efforts was given freely with the hope that the nursery industry could develop them further for cultivation. This work continued throughout the period of the project as new species were brought to notice. By 1988 Norm and Pat Moyle had more than 56 taxa in cultivation.

The Association for Societies for Growing Australia Plants (ASGAP) *Verticordia* Study Group was formed in Sydney in 1983 by Max Hewitt, with many growers in eastern Australia joining the study and growing the genus.

During Elizabeth's numerous ASGAP National Conference visits to other states she was able to determine the success of *Verticordia* growing in many differing situations. She was often very pleasantly surprised at the successes, though sometimes a bit put out that they were growing so well away from their natural habitats and WA gardens. Elizabeth made many friends and gained great respect for her work during these visits as was obvious by their response to her passing.

Kings Park and Botanic Gardens participated in the exchange of cutting material and the research in growing methods of the more difficult species. This included new and rediscovered species, some rare or threatened. *Verticordia* is well represented in the Botanic Gardens today with a memorial garden to Norm and Pat Moyle for their participation in the *Verticordia* Growing Programme. Many species are now available at the Friends of Kings Park plant sales.

In the midst of this mammoth project, Elizabeth's happy personal life was shattered when her beloved husband Ian died suddenly in 1983 leaving her with their two young sons. With many friends and volunteers rallying around her, the project proceeded.

After the arrival of specimens from collectors, follow up visits to verify species and confirm sites were carried out by Elizabeth with other supporting fellow WSWA travellers such as Myra Hamilton, botanist Alex George, growers

Norm and Pat Moyle, botanical artist Margaret Pieroni and Brian Moyle, to collect specimens for the VRC and the main Herbarium collections as well as material for the growing group. Many ongoing country friendships were formed among the VRC collectors during these visits.

Elizabeth felt that detailed paintings of all species would serve as an easy method of identification and could also be used in a book, and asked Margaret Pieroni to take on this task (Fig. 3). Each painting was purchased by Elizabeth as completed. The originally known 55 species grew to a total of 100 by the time the project was finished. These paintings today are housed with Elizabeth's family. They became the centre piece of her book in 2002 which at the time was seen as an unlikely dream.

With the collection of specimens and data growing rapidly, decisions had to be made about housing the material. This led to setting up the reference collection for lodgment in the WA Herbarium. The specimens were mounted on herbarium-sized sheets and put into heavy duty plastic sleeves inside some 25 large binders. Eventually, almost 700 pressed specimens and two large albums of photographs were included in the VRC. In addition, some 1,400 specimens of *Verticordia* were lodged in the WA Herbarium's main collection.

Most expenses for the project were covered privately by Elizabeth and her husband Ian and friend Myra Hamilton. The WSWA donated \$500 towards a wooden cabinet to house them. The completed collection was presented to Dr Syd Shea, Executive Director of Conservation and Land Management, who accepted it on behalf of the people of WA, in a ceremony at the WA Herbarium on 6th December 1988. Today in the new WA Herbarium the collection is included within the Reference Herbarium available to all interested visitors. Some 1,400 pressed specimens of *Verticordia* from the project were lodged and now are housed in the WA Herbarium main vaults.

Alex George participated in many of the species collection with Elizabeth and much time was spent studying the species with all the required information to determine their identification. In 1985 Elizabeth and Alex married and lived in Canberra where Alex was editor of the *Flora*



Fig. 3. Margaret Pieroni and Elizabeth George discussing artwork for the *Verticordia* book, Canberra, 1988.

Ph. Alex George

of Australia, and Elizabeth conducted the final part of the VRC from there. This included studying type and other material of all taxa, some on loan and some seen during visits to herbaria such as Berlin and Munich.

During the project about 25 new taxa were discovered and several not seen since their first collection in the 19th century were relocated. Innovative thinking by collectors Mary and Basil Smith of Manmanning led to the rediscovery of *Verticordia hughanii*. After much searching on the ground they made aerial surveys in their small plane and spotted a small patch of red near a salt lake, a most unexpected place to find *Verticordia*. More patches were found nearby when explored on foot. An unnamed species of unknown locality, sent to the Herbarium in the 1960s, was spotted near Eneabba by Elizabeth and Myra in the early 1980s after having driven passed it many times thinking it was a pink waxy-looking *Scholtzia* common in the area. With scented flowers it was named *Verticordia fragrans*.

In 1990 Allan Rose, from CALM in Albany, collected the delicate pink *Verticordia carinata* with unevenly shaped flowers mimicking nearby pea flowers, in a non-frequented area of the Stirling Range. It was the first recorded sighting since Drummond's collection in the 1840s.

Perhaps the most exciting and last find, by Jan Rowley, was a new species with large spectacular red flowers in the Gibson Desert. It was named *Verticordia mirabilis* in reference to the wonder and astonishment of finding a *Verticordia* species so far removed from their previously known occurrence.

Elizabeth herself participated in collecting the type specimens of 37 new taxa.

Though parted, Elizabeth and Alex were co-authors in describing five new *Verticordias* discovered during this time.

With Elizabeth's in-depth knowledge of the genus she was asked by the WA Herbarium to assist with the determination of incoming

Verticordia specimens. She continued to carry out this activity until her illness prevailed.

When asked how she felt about current research into the generic status of *Verticordia*, Elizabeth wrote "Whatever the future holds for the current status of *Verticordia* is beyond my capabilities."

With all the *Verticordias* named and revised, Elizabeth turned her thoughts to the book which she thought would never eventuate. This had been an incredible journey of discovery. All the information gained from these adventures and various other sources formed the basic research material from which *Verticordia - The Turner of Hearts*, supported by the botanical art of Margaret Pieroni, was eventually produced. Elizabeth wanted the whole story, in her meticulous way. Her favourite, *Verticordia oculata*, features on the front cover. She was adamant that all the relevant information be included in the book so it would be a working book despite its coffee-table appearance. She wanted scholars from all areas to be able to learn and enjoy all the attributes that *Verticordia* could offer. All those volunteers who were with her on the journey are acknowledged in the book.¹

Aware of the need to conserve the flora, for 20 years Elizabeth supported Bush Heritage and its concept. Having been involved in intensive plant survey with the WAWS at Eurardy Station (north of Geraldton), she recommended to them that the station become a part of their programme. With support from many quarters including the Nature Conservancy, the Eurardy Reserve was acquired by Bush Heritage in 2005.

She also participated in WAWS plant surveys of Charles Darwin Reserve and the other survey programmes around the SW of WA conducted by the Society. Many surveys resulted in reference herbaria for each project, prepared by members. Elizabeth's botanical skills were now recognized and welcomed within the survey programmes.

For her work with the *Verticordia* Reference Collection she was awarded the Australian Society of Growing Australian Plants (ASGAP) prestigious Australian Plants Award for the Amateur Section in 1991.

Life Membership of the Wildflower Society of Western Australian for support of the Society's activities and Branch work was bestowed on her in 2011. Elizabeth was a very active Society member and held committee positions at branch and state level (particularly the garden committee) and was Secretary to the national body of ASGAP (now Australian Native Plant Society, Australia or ANSPA) for two years.

It is fitting that such a beautiful genus was selected by Elizabeth and I believe no one else could have carried out such a detailed study and presentation of *Verticordia* as she did. Her dedication to detail and insistence that everything be carried out in the correct manner or procedure has led to a wonderful legacy for this State.

Though Elizabeth's interests were dominated by her love for the WA flora and her wildflower garden she enjoyed visits to the theatre, her appreciation of the arts, travel with friends, and spent many years learning and practicing the art of Ikebana, using WA flora as a specialty.

She passed peacefully away in November 2012 after a brave fight with cancer. At her funeral, colourful displays of *Verticordia* from plants and gardens developed from the *Verticordia* Growing Group commemorated her interest. Each person who attended was able to experience the beauty of these plants by taking sprigs home. Sons Stephen and Tim and their families with four grandchildren and three great-grandchildren and brother Bill celebrated Elizabeth's life.

Eulogies were presented by Eddy Wajon of the WAWS, Digby Grown from the Botanic Gardens, Kings Park, and Kevin Thiele on behalf of the WA Herbarium, all expressing thanks for the important contribution that Elizabeth had made to each during her life.

'Elizabeth never believed that she had done anything out of the ordinary during that time and I was pleased when she finally acknowledge to herself that all her hard work and the resulting book was a real achievement and felt quite proud of it and accepted the importance of her actions in the history of the state's flora.' (Eulogy, Hazel Dempster)

WAWS Members continue growing today. The Northern Suburbs Branch of the Society and their propagation group, where Elizabeth spent many happy hours propagating her *Verticordia* plants, plan to continue the 'Elizabeth A George

¹ Steve Hopper praised the book in launching it (his speech is in the *ASBS Newsletter* 112 (2002) 23–24). *Ed.*

Living *Verticordia* Collection', with many species available to the public.

Maybe one day she will be honoured botanically for the research and information she gathered for the genus *Verticordia* and its appropriate meaning of The Turner of Hearts, with a species bearing her name, something she may not have wished while she was alive, always being a lady and very humble about her abilities.

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Deaths

Don McGillivray (1935–2012)

D.J. (Don) McGillivray, botanist at the Royal Botanic Gardens, Sydney from 1964 to 1985, passed away on 17th August 2012 after a 30 year battle with Parkinson's Disease. Don was best known for his work on *Grevillea*, and authored (1993) the first taxonomic revision of the whole genus since Meisner's. Don was the inaugural secretary of our Society.

He is survived by wife June, children Andrew and Leanne, and grandchildren.

A full obituary will appear in the next issue of the Newsletter.

Bob Makinson, National Herbarium of NSW

Bob Anderson (1952–2012)

Dr Robert John (Bob) Anderson was a University of Adelaide Honours graduate (1976) who undertook a doctorate on the chemotaxonomy of *Correa* (Rutaceae) at La Trobe University under the supervision of Trevor Whiffin. Herbarium specimen vouchers are currently in the La Trobe University herbarium. He joined the now University of Ballarat as a lecturer but the failing health of his parents drew him back to Adelaide where he based himself for the remainder of his life. He joined Kinhill (now KBR) in Adelaide in 1990 and undertook environmental work with them for many years. He was particularly proud

of his vegetation work with the Department of Defence across the many hectares of land they manage. At his funeral on 31st July 2012 his colleagues expressed appreciation of his mentoring in science methodology and publication.

Despite years away from practicing plant systematics he retained an active interest in botany and his membership of ASBS.

Greg Leach, Greening Australia, Darwin, NT

Bob Johnson

Robert William (Bob) Johnson, former head of the Queensland Herbarium, passed away on 13th August 2012 soon after being diagnosed with leukaemia.

Bob was active throughout retirement in a taxonomic revision of Australian Convolvulaceae. He was an early player in the digitisation of Australian herbarium data, was the recognised authority on the ecology and control of brigalow (*Acacia harpophylla*) and was a talented manager of research institutions and scientific staff, reflected by his position on many scientific and advisory committees in Queensland and Australia.

An obituary will be published in the next issue of the ASBS Newsletter.

Bryan Simon
Queensland Herbarium

CHAH report

It's been 12 months now since I took up the chair at CHAH, and I must say I continue to be astonished and impressed by the work done at our Australian and New Zealand herbaria. Despite significant and growing pressures, a lot of marvellous and important work is being done by many marvellous and hard-working people.

For many years now, CHAH has had its two important subcommittees, HISCOM dealing with information technology matters, and MAHC dealing with herbarium management issues. I'd like to acknowledge that increasingly much of the real work of CHAH is done by these two groups. Long gone are the days when CHAH was a relatively straightforward forum for discussion, information-sharing and exchange of views. With CHAH's increasing role in project management of significant and complex projects comes a need for greater accountability, coordination and clear goal-setting. It's fortunate that CHAH is supported so well by HISCOM and MAHC in doing this.

Significantly, a number of major CHAH projects including Australia's Virtual Herbarium and the Australian Plant Census have reached or are nearing maturity, and are transitioning from development projects to ongoing maintenance mode.

Significant issues and initiatives over the last year have been:

1. The roll-out of the Global Plants Initiative (GPI). This project, once completed, will see all Australian and New Zealand types imaged and available to the world's taxonomists. This will be an enormous help as we continue to transition into more virtual and electronic work models. The involvement of all CHAH member herbaria in this international project is welcome; each herbarium has had its fair share of problem-solving in getting their GPI work plan operational, but 2013 will see images coming on-line in earnest.

2. The completion of Phase 1 of the Atlas of Living Australia (ALA) project. The ALA has achieved high recognition and accolades both within and outside Australia as a world-leading informatics initiative, integrating data from

a wide variety of sources into a sophisticated and flexible set of web applications and data repositories. Significant challenges – particularly the need for ongoing infrastructure maintenance funding rather than short-term project funding – are recognised. While these are difficult years for the ALA until a new funding model is locked in, and there is considerable uncertainty for the future, CHAH has continued to support and demonstrate the need for the ALA and for continued development and integration of the ALA into all aspects of Australasian e-taxonomy.

3. The powering-up of Australia's Virtual Herbarium (AVH) using the ALA engine and resources. Nearly two years ago an offer was made by the ALA to create an AVH Hub, effectively integrating AVH with the ALA stable of projects and powering AVH using the ALA informatics backbone rather than continuing with a stand-alone application. CHAH at the time gratefully accepted this offer of support, while retaining the option to continue with AVH as a stand-alone application if the hub didn't meet expectations. I think it's fair to say that the hub model has met and exceeded expectations, and AVH has come a long way with the help and power of the ALA behind it. The new AVH (and similarly ALA-powered OZCAM) were formally launched at CHAH's November meeting in Canberra by Peter Cochrane (Director National Parks with the Department of Sustainability, Environment, Water, Population and Communities, Chair of the AVH Trust and long-time supporter of the AVH through its many guises). Further developments are planned, particularly in developing further functionality in the new AVH to support curation teams at each of our herbaria. The ALA and all its users depend critically on effective quality control of data supplied to it, and AVH is an important tool in allowing us all to maintain the already high levels of quality and authoritativeness we provide.

I'd like to particularly acknowledge and thank the work of the ALA development team and of the matching HISCOM members who have together made this happen. It's been an

enormous amount of work, and is a remarkable achievement and success. A side-benefit of this work has been greater coordination and communication between these two important informatics groups; this tighter integration will stand us in good stead in the next development phases.

4. The near-completion of the Australian Plant Census and other National Species Lists, and of the New Zealand Organism Register.

A milestone coming up during the next 12 months will be the completion of the first pass of the APC, providing for the first time an agreed national checklist of all Australian vascular plants. Once the orchids have been dealt with, all involved in this project will breathe a huge sigh of relief (then buckle down to continue updating and maintaining the currency of the APC in the face of ever-growing taxonomic knowledge). The NZOR has the same role of providing an accurate, authoritative, comprehensive and continuously updated catalogue of all of New Zealand's biota.

These projects have been outstanding successes, entirely thanks to the efforts of the APC core team at CANB, the APC Working Group

members throughout the Australian taxonomic community, and the many contributors to the NZOR.

Reporting on these successes and achievements highlights for me the fact that we're standing on the cusp of an entirely new phase in Australasian taxonomy. We have completed or are nearing completion of some enormously significant pieces of taxonomic infrastructure, pieces of an exciting jig-saw puzzle that will change the way we do virtually all our work. The APC, APNI, NSL and NZOR, AVH and NZVH, ALA, GPI and Biodiversity Heritage Library (BHL) – so many acronyms – put Australia and New Zealand at the forefront of the new taxonomy. We will add more pieces of infrastructure to this jigsaw puzzle in the next few years, then will look back in amazement that we managed to achieve so much taxonomy in the years before they came along!

Thank-you to all who have carried or supported these projects over the last twelve months, and congratulations on many significant achievements.

Kevin Thiele, Chair
Western Australian Herbarium
31 December 2012

ABRS report

Flora of Australia

Flora of Australia Volume 26 is at press, having been sent to CSIRO Publishing in December. It describes 3 families of plants, Meliaceae, Rutaceae and Zygophyllaceae, with 61 genera and 588 species. Thirty three authors, illustrators and photographers contributed to the volume. A retail price has not yet been set, but I will be able to provide full details in the next newsletter, when I hope that I will be announcing the book's publication date as well.

Editing is well underway with Volume 38B, Asteraceae p.p.

Grants

The ABRS Advisory Committee met in a teleconference in December to assess the Research Grants for 2013–14. Their recommendations are awaiting approval from

the Minister and we hope to notify applicants in February.

Bush Blitz

In November, Bush Blitz conducted a survey at Hiltaba Station in the Gawler Ranges, South Australia. Over 220 plant species were collected, including *Stenanthemum arens* (Rhamnaceae), which is known only from Hiltaba.

Staff

Not strictly ABRS staffing, but congratulations to Anna Monro, a former editor with ABRS, on her appointment as the new Botanical Information Manager at the Australian National Botanic Gardens.

Annette Wilson
Editor, *Flora of Australia*
January 2013

Conference report

ASBS field trip report.

Michael Bayly
University of Melbourne

The ASBS Perth conference was followed by a two day field trip on Thurs/Fri Sept 27–28th.

The morning started, overcast and drizzly, with minibuses doing the rounds of Perth collecting participants from their accommodation. After a rendezvous at King's Park, where there was a reshuffle of people and gear, we headed, in a small convoy of vehicles, on our journey toward the northern sand plains. The weather could not dampen the enthusiasm of our intrepid group, even for those of us feeling the effects of a late night on the town, and we had been sternly warned by Kevin Thiele the previous day that no grumbling about the much-needed rain would be tolerated.

The field trip leaders, Peter Jobson and Kristina Lemson had organised an action-packed schedule, visiting a range of sites of botanical interest, and well-punctuated with necessary loo stops and refreshment breaks.

The first botanical stop of the day, about two

hours down the road, was at Yandan Hill – a laterite breakaway overlooking the northern sandplains. It was still somewhat cool, with a blustery breeze and occasional drizzle, but botanists erupted from the buses with gusto and swarmed across the landscape inspecting, photographing, discussing and cogitating over the unsuspecting plants. This was to become a familiar pattern for the next two days.

At this first site we also had the first hint of the bounty of food carried in the support vehicles. There was a great supply of fruit, muesli bars, pre-made rolls and drinks of various kinds that we would feast on for the next two days.

The remaining sites for the day were all in the diverse vegetation of Lesueur National Park. We stopped just inside the park entrance at the southern end of the Scenic Drive at a site that had been recently burnt and had a good number of plants in flower, including large swathes of *Anigozanthos manglesii*. The next



Fig. 1. The field trip posse at the rotunda at Pioneer Park, Dandaragan, where "lunch was a splendid affair".
Ph. Niall Sheehy for Russell Barrett

stop, including lunch, was at the start of the Gardner and Lesueur walking trails. A good proportion of the party opted to climb Mt Lesueur. The walk was not long, and the pace was not blistering, but those of us compulsively photographing plants along the way didn't stand a chance of keeping up - there were just too many things to see! The last stop of the day was at the picnic area on Cockleshell Gully, a drainage line from the Mt Lesueur hill system.

We spent the night in Green Head. A small splinter group stayed at the caravan park, but most stayed in rooms at "Centreak Beach Stay" where we had a very pleasant dinner and breakfast in the morning. At one stage during dinner, amid the din of noisy conversation, Kevin Thiele, after wrangling our attention,

engaged us in social experiment: if we all talked normally (quietly) among ourselves, could we reduce the overall noise level in the room? The answer was a resounding no - after a small lull there was the seemingly inevitable escalation of noise and we were all back to having half-shouted conversations in no time at all.

The second day of the trip included three stops before lunch. The first, along the Coorow-Green Head Road included two adjacent pant communities: *Eucalyptus erythrocorys* (unfortunately not in flower) woodland on deep sand and low coastal heath on outcropping limestone. The second, along Marchagee Track, opposite the Coomallo Telephone exchange, was low proteaceous heath on shallow sand over laterite. The third, was at Vern



Fig. 2. Clockwise from above: a, Exploring for plants on the Marchagee Track, north of Badgingarra. b, Lalita Simpson, Dagmar Timmel (standing) and an echidna. c, A job for a tour guide – Peter Jobson in the *Phytophthora* control ritual, brushing down Annette Wilson's shoes.

Ph. (a, b) Russell Barrett, (c) Mike Bayly.



Fig. 3. Above, north of Badgingarra (same stop as Fig. 2a), (from left) Franck Stefani, Ryonen Butcher, Austin Brown and Kevin Thiele. applying the hands-off, feet-on approach to discovering *Banksia subulata*. Right, the Society's bush logo, with graphic designer Wayne Gebert. Ph. Russell Barrett, Mike Bayly, resp.



Westbrook Reserve, 6 km west of Badgingarra, where most of our time was spent looking at a winter wet sumpland on clay soil, abutting riverine *Eucalyptus loxophleba* woodland. Coincidentally there was also a large group of locals at this site who were there for the opening of a new loop walk, complete with signage, and the odd sculpture, prepared by local artists and school children.

Lunch that day was a splendid affair. Tables of food were laid out in the rotunda at Pioneer Park, Dandaragan. There was an abundance of tasty goods and multiple helpings seemed the order of the day.

After lunch a few more stops were planned, including near Gilligarra, the Wannamal School site and Julimar Conservation Reserve, south of Bindoon (Marri-Jarrah woodland with an open heathy understory on laterite). I was kindly driven back to Perth directly after lunch in one of the support vehicles, to catch an early

flight back to Melbourne, so I can't report on the afternoon's proceedings, but they were, no doubt, as interesting as the rest of the trip.

The trip was a great success - interesting and very well organised. It was a great way to cap off a very enjoyable conference. On behalf of the participants I'd like to thank all of those involved with the planning and running of the trip, including Peter Jobson, Kristina Lemson, Russell Barrett, Ryonen Butcher, Juliet Wege, Kelly Shepherd and Kevin Thiele. Your efforts, at the end of a hectic week were very much appreciated!

Book reviews

A welcome guide to Victorian high country plants

Neville Walsh

National Herbarium of Victoria, South Yarra, Victoria

**Plants of the Victorian High Country:
A Field Guide for Walkers.**

By John Murphy and Bill Dowling.

CSIRO Publishing, Melbourne, 2012.

152 pp. ISBN: 9780643104631. RRP

AU \$29.95 (paperback).

[http://www.publish.csiro.au/nid/21/](http://www.publish.csiro.au/nid/21/pid/6831.htm)

[pid/6831.htm](http://www.publish.csiro.au/nid/21/pid/6831.htm). An eBook version is available from eBooks.com

‘Our aim is to allow walkers with little botanical knowledge to identify the plants they are most likely to encounter’.

These are the first words of this visually appealing book. True to the authors’ intent, the book offers unpretentious, simple descriptions, accompanied by at least one photograph of 119 plants or, sometimes forgiveably, sometimes curiously, plant groups (e.g. *Brachyscome* spp., *Celmisia* spp., *Chionogentias* (sic, for *Gentianella*) spp., *Senecio* spp.).

The book’s compact size (A5) and weight render it small enough to be included in a well-stuffed day pack or even a long-haul pack. The text is structured into sections ‘herbs, other than daisies’, ‘daisy herbs’, ‘low shrubs’, ‘tall shrubs’ and ‘trees’. Within each of these groups (other than the herbaceous daisies), plants are arranged alphabetically by family. Eight species of *Eucalyptus* are treated separately at the end (*E. bicostata* (sic, for *E. globulus* ssp. *bicostata*), *E. radiata*, *E. dives*, *E. delegatensis*, *E. pauciflora*, *E. rubida*, *E. viminalis*, *E. obliqua*), without illustration, but with a simple

key (the only group that is provided with a key). Surprisingly though, only one species of *Acacia* (*A. alpina*), is included, where one might have expected other common mountain species (e.g. *A. dealbata*, *A. obliquinervia* etc.).

‘The Environment’ is a one-pager describing the zones that one might encounter along popular walking tracks through the Victorian high country. The montane zone (900-1400m)

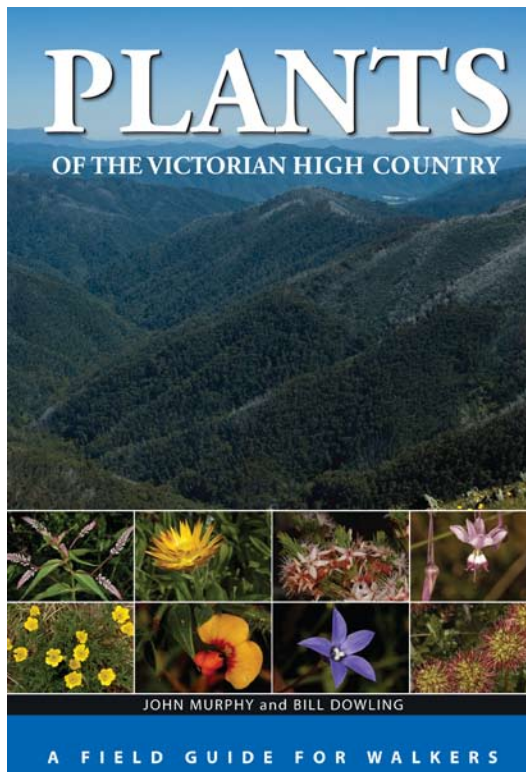
– tall forests generally with *Eucalyptus delegatensis* dominating the upper part of this zone; the sub-alpine zone (1400-1700m) – defined by the presence of *Eucalyptus pauciflora*; and the treeless alpine zone (1700 m upward) where plant growth is constrained and ‘water is frozen for more than four months of the year’. This simple description of the region is obviously generalized and perhaps contestable, but is overall reasonable.

A three page (with a loose leaf correction sheet) section on ‘flower types’ describes, through good illustrations, (asteroid) daisy flowers, pea flowers, orchid

flowers, ‘tubed flowers’, actinomorphic and zygomorphic flowers.

Following the plant descriptions, there is a short glossary of botanical terms that are used (sparingly) in the plant descriptions.

As I write this, my wife and daughter are walking the Alpine Walking Track, from Walhalla, Victoria, to Tharwa, ACT (a mere 700 km or so). I’m not, but they are carrying a copy of this book. I receive occasional snippets



of botanical encounters along the way, all or mostly I assume to be accurate. They are at least credible. I think these two women are fair targets of this book. So, it would seem, the book works!!!

I could leave it at that, and, it's true, many mountain ramblers will unfailingly identify many plants that occur along their path and undoubtedly have their experience enriched as a result, but some closer scrutiny is offered for those of a critical bent.

The choice of species chosen for description is somewhat eclectic. Clearly, lines need to be drawn on what species are to be included, but there are some surprising inclusions and exclusions. There seems to be a distinct bias toward the (admittedly frequently tramped) north-eastern ranges (e.g. Mt Hotham and Falls Creek areas). The absence of *Eucalyptus regnans* for example indicates that the approach to the high country is from the north, rather than the south of the Divide. That's fine of course, but the 'key to eucalypts' will be severely tested, and will fail for many species encountered outside of the north-east ranges.

The images are of variable quality. Many are very good, some are excellent. Some are of vegetative features only and some are insufficient for much more than a reasonable stab to match against a plant encountered along the track. Again, that's acceptable, but weakens what might have been better. There is rather a lot of white paper on many of the pages. With one page allotted to each species, up to 1/3 of each page is blank for some species. Better design could have resulted in an even more compact book or allowed expansion of information content on the species.

The native *Microseris lanceolata* is photographed, unfortunately, with the nearly ubiquitous exotic *Hypochaeris radicata*, a species it is sometimes mistaken for. This is alluded to in the text, but there is no indication that *Hypochaeris* appears in the photograph. For those groups that are identified just to genus there is often no good reason. In most, if not all cases, the species should have been retrievable – e.g. *Chionogentias* (which is now generally regarded as synonymous with *Gentianella*), *Caladenia* species (for what seems clearly to be *C. alpina*), *Craspedia* sp. (for what appears to be *C. coolaminica*), *Diuris* sp. (for *D. sulphurea*),

Ranunculus (for *R. eichlerianus*), *Brachyscome* sp. (for *B. decipiens*). A comment is offered for the broad treatment of *Brachyscome* – 'the species are particularly difficult to distinguish' – a fairly rash statement (at least for the upland species). The opportunity could have been taken to demystify these to some extent. *B. decipiens*, *B. nivalis*, *B. rigidula*, *B. spathulata* in particular are often encountered and readily distinguished.

In general, plants are identified to species only, even though the alpine/subalpine infraspecific taxa are often very different from their lowland counterparts (e.g. *Pimelea axiflora* ssp. *alpina*).

The descriptions of both *Geranium antrorsum* and *Pelargonium australe* make reference to a similarity with *Geranium solanderi*. This might or might not be useful information, but that species is not covered, so the comparison rather begs the question. The only other member of the family treated is *Geranium potentilloides* – which is very like *G. solanderi*, but no mention is made of similarity in this case.

The leaves and flowers of *Stellaria pungens* are said to have 'a pungent smell'. This misinterpretation of the epithet of this sharp-leaved species suggests properties not apparent to most inhalers of a not-particularly-odorous herb. *Leucochrysum albicans* is said to previously have been a *Helichrysum*. While this is technically true, it has not been so for more than 150 years. Living persons who may have known its earlier names are likely to recall *Helipterum albicans*.

Daisy flowers are described sometimes as having ray florets, sometimes as having strap petals. This is a confusing false distinction in a group novices already find difficult. It's even more perplexing that this occurs when there is a quite good explanation of a generalized daisy capitulum in the introductory notes.

These criticisms might dissuade potential users of this overtly 'popular' botanical guide. This is not my intention. I actually like this book quite a lot and acknowledge the role it plays in offering an introduction into an often-visited flora, but one where good Victorian guides are not readily available. It's not, and doesn't attempt to be a bible, but it's at least a genesis, and very good value at that.

A fusion of art and science

Peter B. Adams

School of Botany, University of Melbourne, Melbourne, Australia

Two with Nature. By Ellen Hickman

and John Ryan

Fremantle Press, Fremantle. 2012.

104 pp. ISBN: 9781922089120.

AU\$35.00 (hardback).

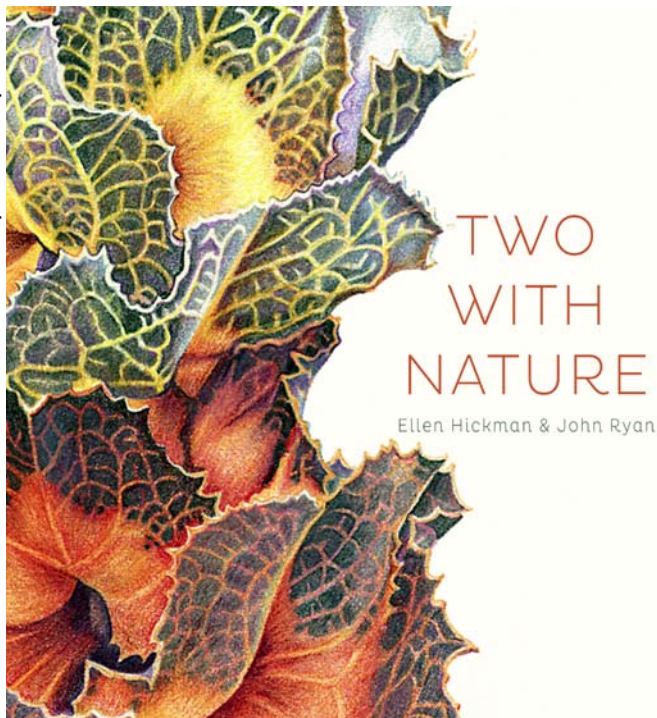
[http://www.fremantlepress.com.au/books/poetry/1333?keywords=Two with nature&x=9&y=10](http://www.fremantlepress.com.au/books/poetry/1333?keywords=Two%20with%20nature&x=9&y=10)

Illustrated botanical poetry is an unusual finding in a long tradition of Australian nature writing. In this collaboration, the hotspot of diversity in south-west Australia has inspired a novel approach through illustration and poetic enquiry, used as a specific research method to understand the botanical world.

Ellen Hickman emigrated from England to Western Australia in 1971 and grew up in Perth.

Trained in botany and visual arts, she has illustrated botanical and children's books, and has won several prestigious awards. She lives in Albany and works as a consultant and artist.

John Ryan is an essayist, ecological poet and philosopher. He is from New Jersey, USA, with degrees in philosophy and environment, English and environmental design. In between several different professions he has walked vast distances in North America in different seasons with a diary for poetry and reflection on the mystery of plants, places, human-plant interactions and philosophy. Personal history suggests he has become strongly connected to the Western Australian environment. John recently completed a PhD at Edith Cowan



University and appears to have taken firm root in Western Australia as a post doctoral research fellow working on 'Cultures of Western Australian Biodiversity'. He has won several awards for poetry.

This book has more than 70 full page illustrations using aquarelle (watercolour pencil) and 20 poems. Each contributor presents a foreword, setting the background and approach to these fruits of long and intensely personal journeys. The technical aspects of illustration are well described for those inspired to follow Hickman's path. She admits to an admiration of Ferdinand Bauer's classic style with dissected plant parts. These bring

a depth of details, especially to the orchids *Thelymitra*, *Pterostylis*, *Cryptostylis* and *Eriochilus*; and to *Swainsona*, *Callistemon*, *Pimelea*, *Anigozanthus* and *Eremaea*. There are also black and white and monotone illustrations of eucalypt fruits, more stylized portraits of *Pyrorchis* (Red Beaks), *Caladenia* and *Eriochilus*, and some fine birds and animals.

Ryan's poems are evocative and deeply involved with flowers, bark, roots, trees and shrubs, ecology, and the perceptual responses they elicit. They are preceded by short quotations, often from botanists and naturalists of historical note such as John Lindley, Robert Brown, and Emily Pelloe. He regards the poems

as an integral part of research, invoking the writer-as-botanist tradition of David Thoreau, John Clare and Pablo Neruda, to create a poetic interpretation of flora.

Australian poets have devoted much attention to place and animals, with only occasional botanical forays. Noted in the foreword for Western Australian plants are John O'Brien's *Around the Boree Log*, *The Mountain Bells* (O.D. Watson) and more recently, poems on *Nuytsia floribunda* (Alec Choate) and *Rhizanthella gardneri* (John Kinsella). David Campbell (orchids) and Les Murray's *Strangler Fig and Cockspur Bush* captured the essence of some Australian plants. Few Australian botanists have written poetry. Jean Galbraith in Gippsland and H.M.R. Rupp in New South Wales wrote a little in the course of their work. The best example of an illustrated poetry volume is the iconic *Sun Orchid and Other Poems* by Douglas Stewart (1952), with pen illustrations by Norman Lindsay. Edwin Wilson (Royal Botanic Gardens, Sydney) wrote the poetry collections *Songs of the Forest* (1990) and *The Botanic Verses and Other Poems* (1993), both illustrated with pencil drawings by Elizabeth McAlpine.

In general, poetry is presented without annotation or illustration, on the premise that these can reduce the wide range of perceptions provoked in the reader. Writing concerning lesser known species presents the problem of turning readers off at the start, if they have no connection at all with the subject. This book solves the dilemma by separating illustrations and poems for the most part, so that readers may appreciate each in their own right. The contents page and index to species allow cross-referencing. An occasional page combines a piece with a shadowy black and white image to the side, not too distracting.

A few examples will serve to illustrate the major themes and hopefully make further reading imperative.

'maybe it's my quest for kinship here, but
I quite like caravanning across town
to a rendezvous with a quandong tree'
(Western Quandong, p.68)

'I could also inhabit this arboreal world'
(*Corymbia calophylla*, p.69)

On human-plant interactions:

'a hundred slits of eyes
hanker in the tree
a hundred slits of eyes
beckoning to me'

(re. *Acacia murrayana*, p.76)

'Waratah Banksia, scarlet striped with pale
perianths
how long they linger, the flower and the
tourist'

(The Rites of Spring, p.95)

'to touch this serrate queen
all the fluids of me
would sizzle and steam'

(A Colony of Royal Hakea, p.77)

On exploration, history:

'through the knee-high scrub
Eyre still curses his way
to an upland of Royal Hakea'

(A Colony of Royal Hakea, p.77)

On descriptive characters:

'these forests are seldom lines or strict
geometries
but tufts & leans, high cumulus-shaped
canopies
& cavities cleft in pachydermal trunks &
burls
wart-like & chelonian ...'

(Tree Top Walk *Eucalyptus jacksonii*, p.34)

And occasionally a message:

'sometimes it works well
to hammer your dulcet tone
into the throat of the wind'

(Orchid Anima, p.42)

It is for the reader to assess whether poetry is a technique to investigate botanical science. Reference to Ryan's published works, which are accessible on-line, would be of help here, and widen the horizons of botanists who find, as I did, the juxtaposition of poetry, illustration and philosophy to be provoking and intriguing. The appreciation of art and poetry is subjective, so looking at and reading this book is the way to gain from the experience, passion and achievement of the authors. If only more publishers would follow the example of Freemantle Press in producing volumes of quality artwork and poetry, either separately or together.

Re-release of Australian tropical plants CD

John Conran

School of Earth & Environmental Sciences, University of Adelaide, Adelaide, Australia

Australian Tropical Plants, Version 4.1.

Zodiac Publications, Dec 2011.

DVD-ROM. ISBN 978-0-9581933-3-7.

AU\$60.00 plus postage.

Windows 95/98/2000/XP/Vista/

Windows 7.

zodpub@westnet.com.au;

sales@rainforestmagic.com.au

So you want to grow a rainforest? This new release in the *Australian Tropical Plants* CD-ROM series represents a major increase in the number of species, providing data for 2050

species of Australian native tropical trees, shrubs and vines, including ferns (235 spp.) and orchids (85 spp.). It also includes over 12,000 stunning, high resolution colour pictures showing habit, flowers, fruits and other important features. This version includes all the images so, once it is installed on your hard disk, the DVD is no longer required. However, the program uses about 3.9 GB and can be slow to install in the first instance.

Once up and running, the easy to use interactive format allows selection of taxa on a wide range of botanical, horticultural and utilitarian features including scientific name (default), common name, family, form, height, flower colour or scent. If only a genus or family is selected, all the species in that taxon are listed allowing browsing. Similarly, the database allows searching for plants that are suitable for a specific area within Australia (including a survival rating) as well as for amenity characteristics such as shade trees, ground covers or vines/climbers. You can also find species useful for attracting native birds or butterflies and the multiple criterion options

allow for searches that combine a range of these features to tailor your specific needs.

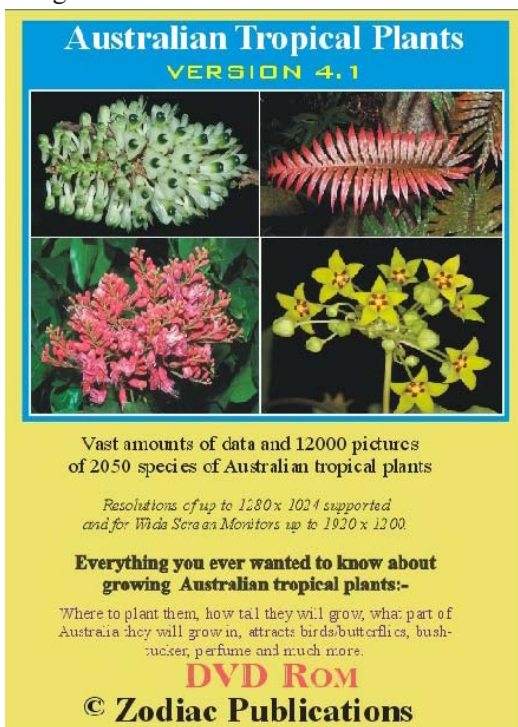
Once a search has provided you with a species, the information is conveniently displayed all on the one screen (with the option to zoom in on specific images), or if there are several species chosen, then up to four can be viewed on the one screen, with zooming by drag and click. There is also the option see native distribution maps and to print the complete data sheet for each species, including the pictures. You can also create slide shows via a number of options.

There are also PDF articles on planning/establishing rainforest gardens, as well as using native fruits for jams.

This program complements the free online CSIRO computer key to *Australian Tropical Rainforest Plants v. 6* but has the advantage of providing additional images, as well as horticultural and amenity data unlike the more taxo-nomically-oriented CSIRO database. The *Australian Tropical Plants* CD-ROM is highly recommended for plant systematists as an add-on to the CSIRO key, as well as an essential tool for

horticulturalists and landscape designers. It will allow for much better amenity-driven native plantings and help to reduce inappropriate plantings of plants which look pretty, but will not grow in many parts of Australia by allowing their replacement with ones that still meet the desired characteristics, but are better suited to local conditions.

For simplicity of use, flexibility of options and information provided this CD-ROM is hard to beat for anyone interested in Australian rainforest plants.



An approachable Latin primer for gardeners

Murray Dawson

Allan Herbarium, Landcare Research, Lincoln, New Zealand

Latin for Gardeners: Over 3,000 Plant Names Explained and Explored.

By Lorraine Harrison. *Crows Nest Books* (an imprint of *Allen & Unwin*), Australia. 2012.

224 pp. 173 × 235 mm. ISBN 978-1-74331-275-9. RRP: AU \$35, NZ \$40 (hardback, colour illustrations)

You would expect this dictionary-like book of botanical Latin to be about as appealing as reading a phone book. However, author Lorraine Harrison has exceeded these expectations and crafted a beautifully presented and engaging work. There are nice touches throughout, starting from the textured and durable hardcover with a nostalgic design that invites the reader in. Within the covers there is a bookmark ribbon, excellent and clear layout, muted colour tones and liberal use of botanical paintings.

The introductory pages (Preface, How to use this book, A short history of botanical Latin, Botanical Latin for beginners, An introduction to the A–Z listings; pp. 6–13) are brief and well-pitched at the target audience of gardeners and horticulturists. The writing is at this level rather than that of a botanical textbook. However, as a career botanist, I too found plenty of interest.

As the title indicates, more than 3,000 Latinised plant names are listed in alphabetic order (from *abbreviatus* to *zonatus*; pp. 14–221), along with their pronunciation spelt out phonetically,

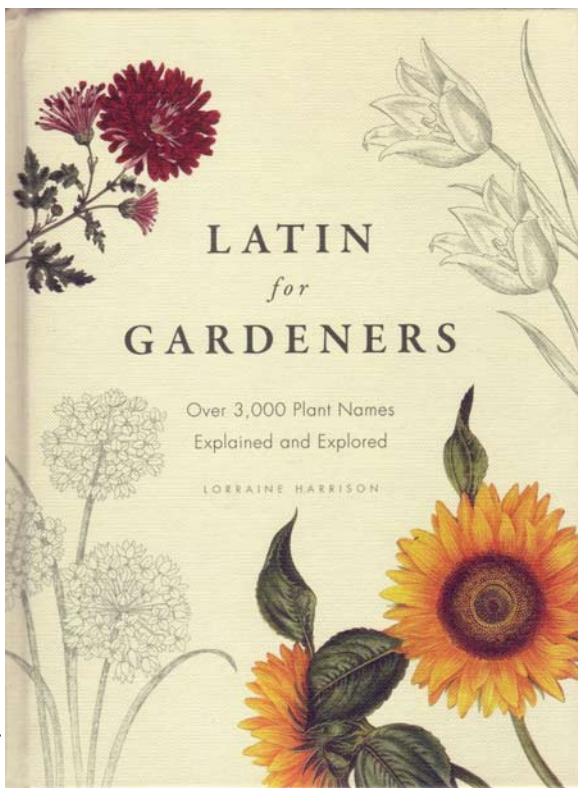
gender variants, meaning, an example of a binomial that uses that name and any variations in spellings.

Botanical illustrations are captioned with their scientific and common names and intermingled throughout. Narrative on these illustrations appears in a box entitled ‘Latin in action’. Botanical illustrations are appropriately placed near to their Latin names (usually the species epithet) in the A–Z listing. Most of the examples named and illustrated have a Euro-centric bias as this book was written and released in the UK

under the title *RHS Latin for Gardeners*. Nevertheless, most of the species mentioned are also to be found in Australasia, as garden subjects or as weeds.

To maintain the reader’s interest, there are tales of botanists and plants interspersed with the A–Z definitions of botanical Latin. These special interest features are presented on pastel green pages to set them apart from the alphabetic listings that are on a cream background. They include plant profile pages (20 featured plants, from *Acanthus* to *Vaccinium*), plant hunter pages (summary biographies

of the travels and discoveries of 15 botanical collectors, including Alexander von Humboldt, Sir Joseph Banks, Carl Linnaeus and Sir Joseph Hooker) and plant themes (7 themes: Where Plants Come From; Plants: Their Shape and Form; The Colour of Plants; The Qualities of Plants; Plants: Their Fragrance and Taste; Numbers and Plants; Plants and Animals). The plant profiles and themes explore the meanings



of the Latinised names that may allude to the plant origins and characters.

The book oft-repeats the important message that much can be learned of a plant by understanding the meaning of the Latin names applied to it. It was good to also read a few cautions on inferring too much from plant names. For example, the orchid *Dendrobium anosmum* has a strong fragrance despite the name 'anosmum' meaning to lack scent (p. 144). Because of enlarged circumscriptions, synonymy and taxonomic vagaries, the meaning of Latinised names used in a binomial can be misleading and may not always be an accurate reflection of the characters of a species to which they seem applied. I think that this warning could have been made up-front in the introductory pages.

Latin for Gardeners concludes with a short glossary (of just 34 terms; p. 222), a well chosen (albeit UK-weighted) bibliography (p. 223) and image credits (p. 224). We are told that illustrations are sourced mainly from the RHS Lindley Library but I would have liked to

have seen the original botanical artists credited here if known.

This book is certainly more lightweight compared to William Stearn's authoritative *Botanical Latin*, or of more direct relevance *Stearn's Dictionary of Plant Names for Gardeners* which gives the meaning and origin of some 6,000 botanical names encountered by gardeners and horticulturists. *Latin for Gardeners* is not intended to be as heavy-duty as Stearn's reference works and succeeds admirably in providing a concise and approachable primer that should meet most people's needs.

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Dick Burns's book of names

Gary Nelson

School of Botany, University of Melbourne, Melbourne, Victoria

Pathfinders in Tasmanian Botany: An Honour Roll of People Connected Through Naming Tasmanian Plants.

By Dick Burns

*Tasmanian Arboretum Inc., Devonport.
2012.*

*260 pp. ISBN 9780646580388. RRP AU
\$40.00 (paperback).*

*[http://www.tasmanianarboretum.org.au/
merchandise.shtml](http://www.tasmanianarboretum.org.au/merchandise.shtml)*

Plants are the most accessible of nature's wonders. This attractive book is about plants of Tasmania, about their names and the humans who found them, collected them, described them, named them, and illustrated them; and other humans and institutions that supported the enterprise. It is described (back cover) as:

"Fully illustrated and written for the curious non-botanist, *Pathfinders in Tasmanian Botany* reveals the stories, interactions and commitment of the range of people involved in Tasmanian botany."

The idea behind the book came from Peter

French of the Tasmanian Arboretum, a 59 ha site established at Eunganana, near Devonport, in northwest Tasmania in 1984. He set out to inform visitors to the Arboretum about people honoured in Tasmanian plant names. The idea was implemented in a series of interpretive panels located adjacent to plants whose botanical names honour some person. These provided information on that person's life and why they were recognized. The information that could sensibly be present on a display panel had to be kept to a few sentences. However, the plantspeople featured on the panels have histories that deserved more than a few sentences. Hence this book.

The book begins with a chapter on "Understanding botanical names", continues with a chapter on "The pathfinders" with six subsections: "Three influential scientists" (Linnaeus, Banks, Darwin), "Botanists" (Persoon, Dickson, Correia da Serra, Labillardière, Riche, Smith, Brown, Hooker (father and son), von Mueller, Rodway, Curtis

and Morris), “Collectors” (Dampier, Nelson, Borone, first fleet collectors, Paterson, Cunningham, Lawrence, Gunn, Milligan, Archer, Moscal), “Botanical artists” (Bauer, Gould, Stones), “Supporters” (von Hake, Franklin, Perrin), and a list of other Tasmanian plant names honouring people. Next, a series of eight Appendices including an honour roll (current vascular Tasmanian plants recognizing 32 people profiled in this book). There are a few primary references for each major entry. I found one particularly appealing (p. 15) - a volume entitled *The Science Class you Wish you Had*. The book ends with a three indexes Biographical (about 550 persons), Books (75) and Botanical names (about 575). The book is abundantly illustrated, virtually on every page. Featured are color photos by the author of some 100 plants, most in blossom, images of 30 people, most from historical sources, and various landscapes.

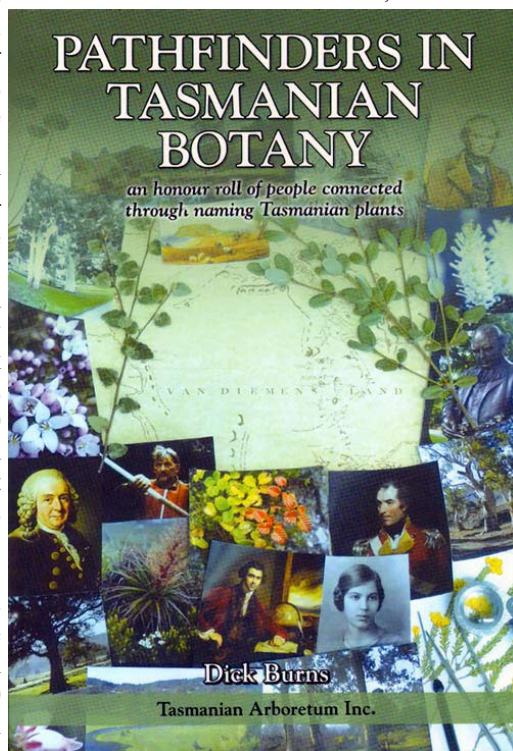
The book begins with the statement (p. 1),

“This is a book about searchers. Some looked for new plants in the Tasmanian bush, others elsewhere. Some found names for these new plants. Others sought new ways of describing these discoveries or developed explanations for why plants from new lands were different. But whichever type of pathway each chose to follow, some taking just a few steps, some making major advances, they set the way for later people to follow.”

The author, an intrepid searcher himself, has extensive experience in bushwalking, collecting and photographing native flora, teaching and curating. The back cover states that:

“Sales of this book will support the Tasmanian Arboretum, a beautiful botanical haven at Eugenana, northern Tasmania, run and maintained by volunteers.”

Everyone can learn something from Burns’s book and it is well worth its price.



A plant names reference for botanists and gardeners

Rod Seppelt

Australian Antarctic Division, Kingston, Tasmania

The A to Z of Plant Names: A Quick Reference Guide to 4000 Garden Plants.

By Allen J. Coombes.

Timber Press, Portland, Oregon, USA.

2012. 312 pp. ISBN: 9781604691962.

RRP AU\$24.99 (hard cover).

http://www.timberpress.com/books/z_plant_names/coombes/9781604691962.

Available in Australia from Capricorn Link (<http://warehouse.capricornlink.com.au/>)

This is not the first publication dealing with the derivation of plant names and it may not be the last. Some are available as hard copy, others on the world wide web. What is useful in this publication is that authorities are given for the genera and species included. There is an indication of the origin of the word – classically, but not always, from Latin and Greek – a guide to pronunciation, the meaning of the name, and geographic range. It is a pleasant surprise to find the authorities for names and, for genera, the families to which the plants belong.

To be picky, the book is not printed on acid free paper, and, although 4000 names are included and the book titled *The A to Z of Plant Names*, it is certainly not all inclusive. Most genera are flowering plants, but there is a smattering of conifers, cycads, ferns and fern allies. The book is perhaps geared more towards the serious gardener than to botanists, but the information provided is, never the less, all good.

In a 12 page introductory section there is a brief, but very readable, introduction to the need for plant names culminating in the advent of the Linnaean system of binomial nomenclature which rationalized the identification and recognition of components of the rapidly expanding world's flora. In the introductory section, one is led through what constitutes a scientific plant name (including the format for cultivar names), the origin and meaning of names, name changes (difficult enough these days for the taxonomist, let alone the gardener), and the author's views on pronunciation – which may well differ from the reader's concept.

To the purist, perhaps the statement:

“Scientific names have the advantage over common names in that they have the same meaning in any part of the world. In addition, they are documented, and it is always possible to go back to the original to discover exactly what the author meant, something that is not always possible with common names”

could have done with greater prominence. There seems to be a general aversion to learning scientific names or, to put it another

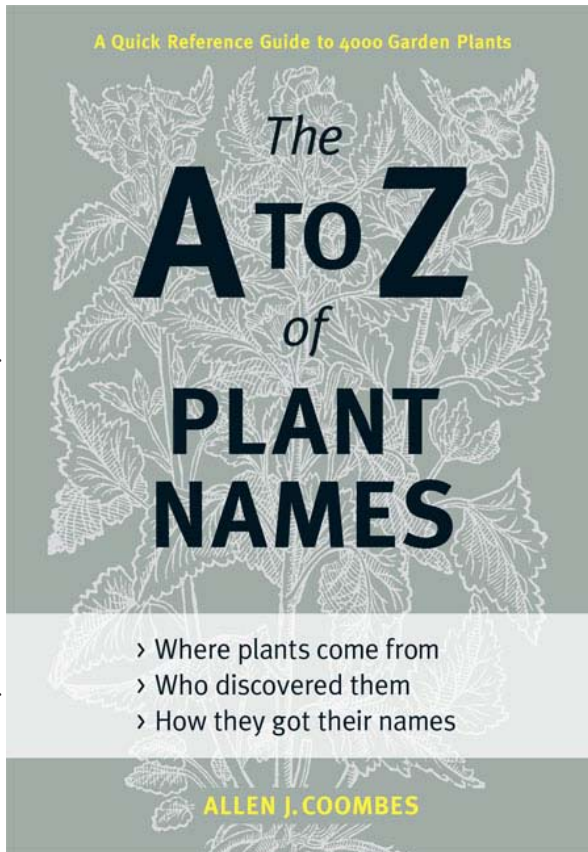
way, there seems to be an unfortunate desire to create common names for organisms - names which often do not make a lot of sense.

A short section in the introduction deals with “Words commonly used as cultivar epithets” and gives the masculine, feminine and neuter gender equivalents of the words. I would contend that this section is of relevance way beyond just cultivars and should be included in any introductory course in plant systematics.

So, to the bulk of the text. Some common names are included and this is a useful lead in if only a common name is known. For example: “Aaron's beard” indicates one should look under *Hypericum calycinum*. If you only know them as “living stones”, you are led to *Lithops*. Similarly, “Manuka” leads you to *Leptospermum scoparium*. I found it somewhat irritating to have species names under a generic name given in the same bold text. Perhaps a larger font size for the generic names would have made information

retrieval easier. A check of a number of the generic names, and families to which they are attributed, failed to show errors but keeping up with familial placements of genera and generic placements for species is not an easy task in this day and age when molecular genetic analyses are resulting in many reshuffles.

In short, this is a very useful reference book for gardeners and botanists and one that is very reasonably priced.



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ASBS Publications

Australasian Systematic Botany Society Newsletter

Back issues

Back issues of the Newsletter are available from Number 27 (May 1981) onwards, excluding Numbers 29, 31, 60, 84–86, 89–91, 99, 100, 103, 137–139, 144–. Here is the chance to complete your set.

Australian Systematic Botany Society Newsletter No. 53

Systematic Status of Large Flowering Plant Genera

Edited by Helen Hewson, 1987

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*.

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Evolution of the Flora and Fauna of Arid Australia (book)

Edited by W.R. Barker & P.J.M. Greenslade. Peacock Publications, ASBS & ANZAAS, 1982

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.

Cost: \$20, plus \$10 postage (in Australia).

This book is almost out of print. There are a few remaining copies.

To order a copy of this book email Bill Barker at bill.barker@sa.gov.au

History of Systematic Botany in Australia (book)

Edited by P.S. Short. A4, case bound, 326 pp. ASBS, 1990

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

Cost: \$10, plus \$10 postage (in Australia)

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Only a few copies left!

To order a copy of this book email Frank Udovicic at Frank.Udovicic@rbg.vic.gov.au

AUSTRALASIAN SYSTEMATIC BOTANY SOCIETY INCORPORATED

The Society

The Australasian 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, available on the Society website, and forwarding it, with the appropriate subscription, to the Treasurer. Subscriptions become due on 1 January each year.

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

The Newsletter

The Newsletter is sent quarterly to members and appears simultaneously on the ASBS Website. 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 *Australas. Syst. Bot. Soc. Newslett.*

Contributions

Send copy to the Editor preferably by email attachment 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.

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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). Send images individually, not arranged in composites, with captions in accompanying email. 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. Authors alone are responsible for the views expressed, and statements made by the authors do not necessarily represent the views of the Australasian Systematic Botany Society Inc.

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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 flyer. Contact the Newsletter Editors for further information.

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