

ASBS

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Society*



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Grant applications close: 14th Mar/Sep annually

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Loose leaf inclusions with this issue

- Nominations for ASBS Council
- ASBS Conference 2008 Circular

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From the President

On the fourth of March I was fortunate to be able to attend the opening of the new Australian Tropical Herbarium. For me it was a bitter sweet occasion. It sees the herbarium I set up 30 years ago in Mareeba (MBA) leave the Tablelands to be amalgamated with the CSIRO herbarium from Atherton (QRS) and elements of the James Cook University collection from Townsville. The combined collection is housed in a new purpose built building within the Australian Tropical Forest Institute (ATFI) on the Cairns campus of James Cook University. With no ready access to the MBA collection and the botanical library, the building seems empty and routine identification is already proving difficult in Mareeba. On the other hand, from an unashamedly parochial perspective, it is pleasing to see the QRS collection remain in Far North Queensland. There were fears at one stage that it might be moved to Canberra. I am looking forward to being a regular visitor to the new facility and I am told I will be made most welcome. I would like to take this opportunity to congratulate our Vice-president, Darren Crayn, on his appointment as foundation director of the new herbarium.

Later in March I co-signed a letter to the new Federal Minister for Environment, Water, Heritage and the Arts, the Hon Peter Garrett. In the lead up to the budget, the letter drew the minister's attention to the significant skills shortage in taxonomy and systematics in Australia and the woefully inadequate funding for research in this area. The letter, which is reproduced in full below, was co-signed by the presidents of several biological societies, conveners of ARC Networks and prominent academics. We can but wait and see what the budget will bring but it is important that the facts presented in the letter are kept before government at every opportunity. This must remain a function of Societies such as ours.

Some members may have heard of Taxonomy Australia (TaxA), a taxonomy peak body formed as an outcome of the National Taxonomy Forum

organised by ABRs in Sydney in October 2007. Brett Summerell, the convener of TaxA, has provided an outline of the group and what it hopes to achieve elsewhere in this Newsletter. ASBS has been invited to participate in the group and looks forward to playing an active role. One of the first tasks undertaken by TaxA has been to prepare a response to the Review of the National Innovation System on behalf of Australia taxonomic community. The review will determine how government funds science in the future and the priorities they set.

These two things got me thinking about commitment to training and employment. My best friend is a builder who has run a small Atherton Tablelands based building company for the past 28 years. His current workforce is about 10 people. He has just taken on his fiftieth apprentice. One of his early apprentices is now a managing partner in the business. At least six of his former apprentices are either owners or project managers of building companies operating in the Far North Queensland area. At least two have gone on to tertiary studies in engineering and are actively involved in the construction industry. It would be great if we saw this sort of commitment in botanical and faunal institutes across the country.

We will need a few replacements on Council this year. I have now served the maximum 6 terms allowable under the rules and am required to stand down. Two of my fellow councillors have indicated that they will not be nominating for further terms. Anna Monro is keen to continue her association with Council but would like to step down from the Treasurer's position to concentrate on a couple of projects which we have been hoping to get around to for a few years. Please consider nominating. If you would like further information contact me or one of the other Councillors. With modern communication you could be based anywhere and play an active part in Society business.

John Clarkson

Letter to Minister Garrett

In 2005 and again in 2007 ASBS teamed with several Australian biological societies to write to the Federal Minister for the Environment and Heritage to draw attention to the need for an enhanced training program for young taxonomists and systematists across a range of biological disciplines and for additional funding for the Australian Biological Resources Study (ABRS). The letters pointed out that, unless redressed, the

subsequent skills shortages could have serious implications for the conservation of Australia's biological diversity. Following last year's change of government, the societies felt that, in the lead up to the Labor government's first budget, it was important that this information should be placed before the new minister. The following is a transcript of the letter sent to the Hon. Peter Garrett dated 20 March 2008:

Dear Minister

Re: Australian Biological Resources Study

The task of identifying, naming and understanding the Australian biota is an immense and important one that is currently suffering from a significant skills shortage. This shortage is now becoming serious to the point where there are insufficient young scientists to meet the demand for positions in Australian research institutions, and this will jeopardise the conservation of Australia's biological diversity and key areas of several natural resource industries. We strongly believe that the solution to this impending crisis is best tackled through an enhanced training program and additional research funding to the Australian Biological Resources Study (ABRS) that will expedite the next generation of scientific expertise in this area and the delivery of critical taxonomic and associated biological information. Unfortunately, although the ABRS grants scheme has received minimal CPI funding increases in recent years, the current level of funding is significantly less (more than \$500,000) than 15 years ago (1993), even though the cost of doing this research has increased on average by 70%.

The science of taxonomy and systematics are interrelated biological disciplines. Taxonomy is the process of naming and describing new species. Systematics is the science of determining how these species are related to each other, where they occur in the landscape (i.e. their distribution) and, to some extent, their ecology. It is a modern science, informed by molecular analyses, sophisticated computer databases, and careful study of organisms in the field and in museum and herbarium collections. Thereby it enables rapid and predictive biological diagnostic work to be undertaken when needed by industry, public health, water resource organisations, quarantine, Landcare, marine science and conservation.

Australia's Biodiversity

Nearly 500,000 species are thought to exist in Australia, of which only a small fraction are currently named. The following table outlines our current estimates of the extent of most of the biota.

**Importance of Taxonomic/
Systematic Research**

There are numerous examples of enormous increases in previously unknown species that represent significant biological challenges. The discovery of 300 new species of Australian gum trees (eucalypts) in the last 20 years shows that even large organisms are still being found.

The discovery of large numbers of insects and other invertebrate animals living in underground caverns and water bodies in arid central Australia has astounded the biological community. This so-called 'stygo fauna' (organisms living in underground water) includes whole groups of blind beetles and small crustaceans that were completely unknown only a few years ago. Many of these species have very small natural distributions. The discovery of stygo fauna in areas of resource exploration and mining development has triggered a response from State and Federal agencies to ensure that no species is likely to become extinct as a result of any mining or related activity. In a similar way, the documentation of the Australian biota and the development of a sound taxonomic knowledge-base are of critical importance to identifying insect pests in agriculture, species that can contaminate food exports, identifying our marine resources, and recognising biosecurity threats to our continent. Taxonomic information is also crucial in understanding the processes that govern the sustainable use of Australia's water resources, and the effects of climate change on Australia's unique biota.

Essentially, all these areas form key components of the Australian Government's National Research Priority area – An Environmentally Sustainable Australia.

We believe that the increasing skills shortage and diminished research capacity in taxonomy can be solved at relatively modest cost by implementing or enhancing three critical programs.

1. New ABRS Postdoctoral and Senior Fellowship Scheme. This would be a new initiative modelled on the Australian Research Council fellowship scheme. It would fund four 3-year early-career postdoctoral fellows, selected on the basis of excellence. Each would be awarded approximately \$100,000 pa (salary, on-costs and research funding) to pursue taxonomic research in critical areas within a university or government research laboratory. These early career researchers would represent the next wave of systematist scientists ready to fill the skills shortage. In addition, two

	% described	% undescribed	Estimated no. spp.
Terrestrial vertebrates	98	2	2,500
Vascular plants	70	30	25,000
Marine invertebrates	30	70	80,000
Terrestrial arthropods	25	75	255,000
Other terrestrial invertebrates	15	85	60,000
Fungi	15	85	50,000
TOTAL			472,500

5-year Senior Fellowships (\$200,00 pa) would be awarded to distinguished taxonomic scientists who would undertake cutting edge research, as well as provide leadership and mentoring within the discipline.

TOTAL COST: \$2.2 million per annum.

2. Expanded ABRs PhD Scholarship program.

The ABRs currently funds only one new PhD scholarship per year, each of which runs for three years, at a total cost of approximately \$85,000 per year. This program should be immediately expanded to fund four additional PhD students per year. These students would be based at universities around the country and sometimes affiliated with other key research organisations (e.g. State herbaria, museums, CSIRO).

TOTAL COST: \$500,000 per annum.

3. Enhanced ABRs Research Grants Scheme.

The ABRs Research Grants Scheme currently distributes about \$1.8 million pa towards the study of the systematics of the Australian biota. Some 30 new projects are funded each year on the basis of excellence and relevance to ABRs and National Research Priorities. An enhanced scheme should see a 2.5 times increase in available funds, most of which would restore funding to a level comparable the early 1990s.

TOTAL COST: \$4.5 million per annum.

The provision of the above training opportunities for postgraduates and early career researchers would significantly address the skills shortage that is so clearly evident in this area of biology. The requested additional funds are, in reality, modest, but would have an enormous effect on the capacity of the nation to deliver on government policy and

national need. However, without such increases, it is clear that the current limited administered funds for ABRs will soon start to fail in delivering on its core role as the provider of high-quality knowledge on the taxonomy of the Australian biota.

We thank you for your interest in this matter, and request that you meet with a small group of us to discuss this matter further as soon as possible. The point of contact for this group is Professor Andrew Austin at The University of Adelaide.

On behalf of the 2,600 members of our scientific societies/organisations,

Yours faithfully

The letter was signed by co-signed by Volker Framenau, President, Society of Australian Systematic Biologists, Jonathan Majer, President, Australian Entomological Society, Jeremy Timmis, President, Genetics Society of Australia, Andy Austin, Director, Australian Centre for Evolutionary Biology and Biodiversity, Bob Hill, Convener, ARC Environmental Future's Network, Mark Westoby, Convener, ARC Vegetation Function Network, Hugh Possingham, Convener, CERF Applied Environmental Decision Analysis, two Fellows of the Australian Academy of Science, Pauline Ladiges and Ross Crozier, Gerry Cassis from the School of Biological, Earth and Environmental Sciences at the University of New South Wales and myself on behalf of ASBS.

It was copied to Marilyn Sleigh, Chair, Australian Biological Resources Study Advisory Committee and Cameron Slatyer, Director, Australian Biological Resources Study.

John Clarkson

ASBS Inc. business

Hansjörg Eichler Research Fund report

Four applications were received in the March 2008 round following on from five and ten applications in the previous two rounds. The two successful applicants, awarded \$2000 each, and their project titles are:

- Andre Messina (LaTrobe University). A taxonomic assessment of *Olearia* sect. *Asterotriche* using morphological, molecular and chemical data.
- Robert Edwards (University of Queensland). Systematics of two closely related morpho-species of the broadleaf paperbark complex: *Melaleuca argentea* and *M. fluviatilis*.

The standard of applications from students remains uniformly high and the role of the reviewers in ranking them continues to increase in difficulty. In recent rounds there have been no clear standouts.

The composition of the committee has changed since the last round, with Tom May stepping down after four years of service. On behalf of Council and the Society I would like to thank Tom sincerely for his efforts over the last four years.

The vacant position has been taken up by Dr Kristina Lemson of Edith Cowan University, Perth. Kristina has considerable experience in teaching systematics and botany and has conducted taxonomic research on a range of plant groups, most notably the epacrid genera *Andersonia* and *Sphenotoma*. Kristina is warmly welcomed onto the Eichler Committee.

Australian Systematic Botany Society Inc.

Nominations for 2008–2009 ASBS Council

Nominations for all positions on the 2008–2009 Council are now called.
Nomination forms have been included as an insert in this Newsletter.

Please note:

- John Clarkson's three year term as President and his six-year term as a member of Council will expire at the 2008 AGM, so he will be unable to stand for re-election
- Darren Crayn's three-year term as Vice President will also expire at this AGM, and he will not be seeking another position on Council
- Our Treasurer Anna Monro is also not seeking re-election to that position, although she is also eligible to stand for another position on Council

Nominations must be in the hands of the Secretary by Friday, 18th July 2008.

As always, the expertise and enthusiasm of the other Eichler committee members (Barbara Briggs, Rod Henderson, Betsy Jackes, Chris Quinn) in reviewing grant proposals is greatly appreciated. Application guidelines and form are available from the Society's website (www.anbg.gov.au/asbs). The closing dates for applications remain March 14th and September 14th each year.

Darren Crayn

- Dr Régis Julien, Quatre Bornes, Mauritius.
- Mr Andre Messina, La Trobe University, Vic.
- Ms Olgney Pinto da Silva, University of New South Wales, Sydney, N.S.W.
- Ms Nan Thomas, University of New England, N.S.W.
- Mr Michael West, Caringbah, N.S.W.
- Mr Jim Williams, Jim's Seeds, Weeds & Trees Pty Ltd, Boulder, W.A.

New members

Council is pleased to welcome the following new members for 2008 to the Society:

- Miss Carol Austin, Deakin University, Vic.
- Dr Michelle Barthet, School of Biological Sciences, University of Sydney, N.S.W.
- Ms Gael Campbell-Young, Ecological Associates Pty Ltd, Netherby, S.A.
- Mr Endymion Cooper, University of Sydney & National Herbarium of New South Wales, Sydney, N.S.W.
- Mr Eric Hsu, School of Plant Science, University of Tasmania, Hobart, Tas.

2003 Nancy Burbidge lecture

Following a query re Bob Hill's 2003 Nancy Burbidge lecture *Fire, air, water and earth: elemental evolution of the Australian flora*, and just to keep the record straight, the content of the lecture can mostly be found in:

Hill, R.S. (2004). Origins of the southeastern Australian vegetation. *Philosophical Transactions of the Royal Society of London B* 359: 1537–1549.

Accessible via web site:
<http://digital.library.adelaide.edu.au/dspace/handle/2440/1924>

Australian Systematic Botany Society Inc.

Annual General Meeting 2008

The Annual General Meeting of the Australian Systematic Botany Society will be held in Adelaide during the ASBS Conference.

Venue: Bragg Lecture Theatre, University of Adelaide

Time: Tuesday 30 September, 4.30 pm

ASBS, CHAH and ABRS business

Taxonomy Australia: a new lobby group for systematics

Brett Summerell, Chairman CHAH
National Herbarium of New South Wales

In October 2007 ABRS co-hosted, with FASTS and the Australian Museum, a National Taxonomy Forum, gathering together all institutions in Australia involved in taxonomic research or use of this research. One of the major recommendations of the Forum was the formation of a peak advocacy body. This group, called Taxonomy Australia or TaxA, first met in Canberra in January 2008. The TaxA Terms of Reference are:

promotion and enhancement of the discovery, documentation and delivery of taxonomic and systematic knowledge and information relating to biodiversity in its broadest sense.

TaxA consists of the chairs of CHAH, CHAFC, CHAEC, representatives of the Australian Systematic Botany Society (ASBS), the Society for Australian Systematic Biologists (SASB), the Australian Microbial Resources Research Network (AMRRN), representatives from three universities, and invited collaborative participants representing member agencies on a needs-be-basis. The Department of Agriculture, Food and Fisheries, CSIRO and ABRS all have observer status with TaxA. The group is currently convened by Brett Summerell (Chair of CHAH) and a major objective at present is the preparation of response to the Federal Governments Review of Innovation currently underway. The Terms of Reference for TaxA are as follows.

Draft Terms of Reference

1. Name: Taxonomy Australia (short form TaxA)
2. Goal: Promotion and enhancement of research and education that relates to the discovery, documentation and delivery of taxonomic and systematic knowledge and information relating to biodiversity in its broadest sense.
3. Objective: increasing Australia's taxonomic capability by increasing resourcing for taxonomic research and by enhancing opportunities for the training and employment of taxonomists.
4. Membership:
Shall consist of one representative of the following groups:
 - Council of Heads of Australasian Herbaria (CHAH);
 - Council of Heads of Australian Faunal Collections (CHAFC);
 - Council of Heads of Australian Entomological Collections (CHAEC);
 - Australian Microbial Resources Research Network;
 - Society of Australian Systematic Biologists;
 - Australian Systematic Botany Society;

- Australian Society for Parasitology.

This is in addition to one University representative from each of the following taxonomic speciality areas: botany, zoology and micro-organisms.

The following to be invited as observers and to send representatives as necessary:

- Australian Biological Resources Study (DEWHA);
- CSIRO;
- Department of Agriculture, Fisheries and Forestry (DAFF);
- Australian Institute of Marine Science (AIMS)
- Atlas of Living Australia (ALA);
- A student representative involved in post-graduate research in taxonomy;
- Any other from organisations as invited from time to time, as appropriate.

All organisations are encouraged to send as their representatives members that are actively involved in taxonomic research and/or education.

Chair: the Chairperson will (ideally) be a person of prominent standing in the scientific and environmental community and be able to speak independently to represent TaxA. A convener will organise and run meetings and other related activities.

Length of term: TaxA is intended to exist for the length of time it takes for its objectives to be achieved, anticipated to be no longer than five years. Individual representation will be dependent on the organisation providing the representative.

Fees: there are no fees associated with membership of or representation to TaxA.

Reporting mechanisms: All members will communicate with their organisations through the regular meetings and/or communications that occur, and will solicit opinions from their constituent members for relay to TaxA. A website is to be developed to make information on TaxA's activities publicly available.

5. Core activities:

TaxA will serve as a focal point for the discipline of taxonomy through representation of its peak bodies, by:

- lobbying appropriate levels of government and agencies, higher education, business and allied industries for greater recognition and resourcing for taxonomic and systematics research and education;
- promoting research, information provision and education in all areas of the taxonomy and systematics of all forms of life in and around

- Australia;
 - advising and providing comments on policies relating to taxonomic and systematic research, education and information provision where appropriate.
6. When speaking on behalf of TaxA, members agree to a set of guiding principles so they are representing the broader interests of the group
7. Frequency and types of meetings: TaxA will meet quarterly or more frequently if it is needed, formally or via other communications methods (e.g. teleconferences).

Articles

Recent developments in plant DNA barcoding

Darren Crayn

Australian Tropical Herbarium, Cairn, Queensland

DNA Barcoding is rapidly developing cutting edge technology for identifying biological unknowns by short, species-specific DNA sequences (barcodes). It is potentially revolutionary because it works for minute, fragmentary samples, mixtures, and any life stage. Previously these may have been extremely difficult if not impossible to identify using the observable, tangible features of organisms such as size, shape, colour etc. Every museum and herbarium contains a proportion of specimens which cannot be accurately identified because the material is inadequate, being the wrong life stage, lacking reproductive structures, or being too fragmentary. DNA barcoding can potentially allow identification of even the tiniest, most difficult samples and so represents a powerful additional tool for identification and biodiversity research. Considerable global research activity on DNA barcoding is underway and significant and growing governmental and philanthropic funding has been achieved.

2nd International DNA Barcoding Conference

I was fortunate to be able to participate in the 2nd International DNA Barcoding Conference held 17-21 November 2007 at the Academia Sinica in Taipei, Taiwan. We were all fortunate that the conference wasn't cancelled at the last moment when a tropical cyclone threatened Taipei. As it turned out, it just glanced the northern tip of Taiwan bringing constant rain and high, but not dangerous winds. Shanghai bore the brunt a day or so later.

Various invited speakers reported on a diverse range of DNA barcoding projects. There was a general optimism, even excitement, that DNA barcoding can indeed live up to its promise of providing a rapid, cost effective, near universal identification system for biological material that is refractory to the traditional approach of comparing visible or microscopic features. Particularly encouraging were results of studies on mosquitos, moths and butterflies, and marine fish. In those groups DNA barcoding has enabled for the first time: 1. successful identification of cases of market substitution of commercially valuable fish species with less desirable bycatch; 2. linking of larval and adult stages of insects

where previously time consuming, expensive and failure prone hand rearing methods were required; and 3. unambiguous discrimination of disease vector species from their morphologically indistinguishable relatives. Other talks reported on technical developments relating to barcoding, such as progress toward a hand-held device for identifying unknowns in situ (e.g. at customs facilities, or in the field), methods for overcoming some of the impediments to universality of DNA barcoding, and tools for delivery of barcoding outputs to stakeholders. Full details of the program are available (Web ref. 1). The last day of the conference was devoted to a meeting/workshop of the Plant Working Group (PWG) of the Consortium for the Barcode of Life (CBOL). The PWG was convened to determine the most useful DNA region to use for DNA barcoding in plants that would be proposed as the official plant barcode. The region used for most other organisms (the cytochrome oxidase gene – CO1) doesn't work in plants. For the last two years the PWG partners have investigated seven alternative DNA regions. The results of these studies were presented and lively debate ensued as to the relative merits of the seven regions but the PWG failed to settle on a proposal. A synopsis of that meeting was published in *Science* (Web ref. 2). Further research is under way to address some minor outstanding questions and knowledge gaps, and a decision on the official plant barcode region is expected soon. It is likely the official plant barcode will comprise three regions including the plastid regions matK and the trnH-psbA spacer. Once the decision is made a number of plant barcoding projects that have been on hold pending the choice of barcode will be activated. Needless to say, other projects have proceeded regardless with some promising results that will feed back into the decision process, e.g. comparative work on barcoding a Mesoamerican and a South African flora which suggests matK is sufficient for a universal plant barcode (Lahaye et al. 2008).

Australian Barcode Network links with iBOL

On the 18th of February the Botanic Gardens Trust Sydney joined with the Australian Museum

and the NSW Department of Primary Industries (each a part of the Australian Barcode Network) in signing a Memorandum of Understanding with iBOL (the International Barcode of Life network) to act as a Regional Node within iBOL. This engages the parties in deploying significant resources toward iBOL goals, primarily the construction of a well-populated library of reference barcode sequences. Progress will be achieved through the collection and identification of specimens and through the interpretation and publication of results. The Australian Barcode Network comprises Andrew Lowe (South Australian Herbarium and University of Adelaide), Andrew Mitchell (NSW Dept. Primary Industries), Bob Ward and Steve Cameron (CSIRO), Brett Summerell (Botanic Gardens Trust Sydney), Cameron Slatyer (ABRS), Dan Faith and Les Christidis (Australian Museum), Darren Crayn (Australian Tropical Herbarium), and Janette Norman (Museum Victoria).

Launch of TreeBOL

One of the most interesting developments presented at the Taipei conference (see above) was a proposal for a plant barcode initiative

– TreeBOL – put forward by Dr Ken Cameron on behalf of the New York Botanical Garden. The ambitious long term goal of TreeBOL is to barcode the trees of the world. This proposal has now been funded by the Sloan Foundation, which supports CBOL and a number of barcoding projects. As Dr Cameron has now moved to the University of Wisconsin, TreeBOL will be coordinated primarily by Dr Damon Little (New York Botanical Garden). I have been invited to act as one of the TreeBOL coordinators for Australasia, along with Brett Summerell (Botanic Gardens Trust Sydney) and Andrew Lowe (South Australian Herbarium and University of Adelaide) and one or two others yet to be determined. Sloan funding will cover meeting and coordination costs only, but participation in this program should leverage significant external funding for the research.

References

Lahaye et al. 2008. DNA barcoding the floras of biodiversity hotspots. *Proc. Natl. Acad. Sci. USA* 105:2923-2928.)

Web ref. 1. www.dnabarcodes2007.org/

Web ref. 2. www.barcoding.si.edu/PDF/Pennisi%202007%20plant%20barcoding.pdf

What can you do with a claudius? The nonsense of taxonomic infra-ranks

Kevin Thiele

Western Australian Herbarium

The *International Code of Botanical Nomenclature* (Art. 3.1) specifies seven “principal ranks” – kingdom, division or phylum, class, order, family, genus, and species. In addition, it provides for secondary ranks such as tribe, section, variety etc within families, genera and species (Art. 4.1), and for subdivisions of all ranks (Art. 4.2), thus allowing subgenus, suborder, subsection etc.

To add further to this set, Article 4.3 allows for the open-ended creation of intermediates between these, “provided that confusion or error is not thereby introduced”. The only stipulation is that the ranks must be maintained in a fixed sequence.

In an article in *Wikipedia* on Linnaean Taxonomy (Web ref. 1) a zealous contributor has listed 75 used ranks (across both the botanical and zoological codes), including such fantastical creations as microphyla, infracohorts, sublegions, gigaorders and epifamilies. Luckily, these follow a defined sequence, so presumably that means there’s no confusion! Another article, on Taxonomic Rank (Web ref. 2), lists no fewer than 117 ranks through the inclusion of the claudius, falanx, synklepton and natio among others. Such a rich vein for a taxonomic Edward Lear!

Historically, the seven “principal ranks” are based on a minor modification of the five Linnaean

ranks (class, order, genus, species, and variety). The remainder have been added since Linnaeus’ time. A reasonable question, certainly one that I suspect would be asked by any layman, is why do we have all the others, and what’s their use?

The answer lies in the history and evolution of taxonomic nomenclature. When Linnaeus started it all, only a handful of ranks were sufficient to arrange all known organisms into a hierarchy that was meaningful enough for the purpose. After Linnaeus, more and more organisms gradually became known and described and taxonomy gradually encompassed Darwin’s dangerous idea of an evolutionary process, with its implication of a conceptual Tree of Life.

Taxonomists had no option but to express their growing ideas and inferences about the pattern of life using a ranked hierarchy. More and more ranks were intercalated in an attempt to capture more and more data on that pattern. But the Tree of Life is a big and complex tree, and even synkleptons are surely not up to the task of capturing it.

When phylogenetics became rigorous in the middle of the 20th Century, another option became available – capturing the Tree of Life in diagrams rather than ranks. This has clearly been successful, as witnessed by the growing number

of papers and seminar presentations built around tree diagrams, and the dwindling number that enumerate lists of ranked taxa.

Partly as a result of this new option, we now have two opposing strands of thought – one (based on the license allowed by Art. 4.3 of the *Code*) has been busy creating ranks and trying to chop the tree into them, while the other has proposed (perhaps not surprisingly) throwing the baby out with the bathwater and starting again with a rankless (phylocode) nomenclature.

It seems to me that both the *Phylocode* and hyperanks – doing away with all ranks and proliferating them into nonsense – are bad ideas. The *Code* provides a middle way – let's simply dispose of all ranks other than the seven "principals" (perhaps with subspecies instead of or in addition to variety, as it's so obviously useful and widely used). We don't actually need to do anything radical like amend the *Code* or create a new one – we can merely stop using them, as the *Code* allows. Let them fall into disuse. We retract back to a simple, effective system, using the only ranks that most people know about and use anyway. Species would belong to genera, genera to families, families to orders etc, and these would be formally named and ranked.

For everything else, I propose we use phylogenies and informal groupings. If someone really needs to know which taxa go with which others in any sense beyond the core set of formal, ranked taxa they should, if possible, consult a tree if there is

one. My sense is that at this level of detail it's primarily specialists who really want to know, and they're usually pretty adept at reading trees. When there is a need – and there often is – to name a group in order to talk about it, then it can be named informally – the such-and-such species group, the so-and-so group of genera, this clade or that. This is pretty much an emerging trend anyway – what are the ranks of the core eudicots or the rosids? The fact that they don't have one hasn't stopped them being used widely and effectively.

Such a system, I suggest, would be both practical and effective, would provide a useful way out of the mess of an indefinite number of increasingly nonsensical ranks, and, best of all, can be adopted immediately. We simply need to protect ourselves from the taxonomists curse – the compulsion to formally name everything. If you can resolve a group of species, call it a species group. Simple, but effective.

Failing this, I propose to use (the *Code* allows me to) a new rank – the *nero* – which is one step down from a *claudius*. I just need to sit down and try to work out what its proper termination should be. Now where's that damned fiddle...

References

Web ref. 1. http://en.wikipedia.org/wiki/Linnaean_taxonomy

Web ref. 2. http://en.wikipedia.org/wiki/Taxonomic_rank

On correcting epithets such as "gillivraei" and alternative spellings for substantive epithets such as "solandri" and "solanderi"

Philip Short

Northern Territory Herbarium

When I first visited north Queensland some years ago I came across a leafless, small tree in full bloom, its bright yellow flowers highlighted against a blue sky. I took many photographs and subsequently worked out that I'd been looking at *Cochlospermum gillivraei*, the name used in *Flora of Australia* [8: 86 (1982)] and one which is found in various other botanical works, including different editions of checklists of plants for both Queensland and the Northern Territory and both APNI and IPNI. And contrary to the note in APNI it isn't "spelt 'gillivrayi' in *Index Kewensis*" – at least not in the hardcopy of volume 1. The species was described by Bentham [*Fl. austral.* 1: 106 (1863)] who listed the following syntypes "Lizard Island, off the N.E. coast, *McGillivray*; Burdekin [R]iver, *F. Mueller*; Port Denison, Fitzalan." While Bentham didn't state that he was naming the species after him, I don't think there can be any doubt that it was after one of the aforementioned collectors, John MacGillivray – with the "Mac" deleted.

Recently, when carrying out a preliminary edit of the genus *Cochlospermum* for the *Flora of the Northern Territory* I found myself questioning the spelling of the epithet "gillivraei". It is the original spelling but surely it isn't consistent with Articles of the *International Code of Botanical Nomenclature* which deal with the orthography and gender of names.

Article 60.1 makes it clear that

"The original spelling of a name or epithet is to be retained, except for the correction of typographical or orthographical errors and the standardizations imposed by Art. 60.5 ... 60.6 ... 60.8 ... 60.9 ... 60.10 ... 60.11 (terminations; ..."

Article 60.11 states that

"The use of a termination (for example *-i*, *-ii*, *-ae*, *-iae*, *-anus*, or *-ianus*) contrary to Rec. 60C.1 is treated as an error to be corrected (see also Art. 32.7). However, terminations of epithets formed in accordance with Rec. 60C.2 are not to be corrected."

Recommendation 60C.1 is the one that outlines how “personal names are given Latin terminations in order to form specific and infraspecific epithets” and among other things it is stated that

“If the personal name ends with a vowel or *er*, substantival epithets are formed by adding the genitive inflection appropriate to the sex and number of the person(s) honoured (e.g. *scopoli-i* for Scopoli (m) ... *gray-i* for Gray (m) ...”.

As will be evident the letter “y” is treated as a vowel.

All of which has led me to conclude that the correct spelling for the species in question is *Cochlospermum gillivrayi*.

Checking of this name led me to look more widely at the spelling of epithets honouring MacGillivray (“gillivraei” and “macgillivraei”) coined by Bentham, and also at the long list of all epithets coined by Bentham. I did this by searching both APNI and IPNI.

I found that Bentham (*Fl. austral.* 3: 409) also coined the name *Gardenia macgillivraei*, a name now placed in synonymy under *Kailarsenia ochreatea* (F.Muell.) Puttock. I further noted that in regard to the name *Nothopanax macgillivrayi* Seem. (*Fl. vit.* 114), Bentham (*Fl. austral.* 3: 382) changed the spelling of the epithet to “*macgillivraei*”, indicating that he had a definite procedure for dealing with names ending in “y”. (In this case, the original spelling is adopted in APNI.)

Assuming he did have some rule in dealing with such epithets, Bentham wasn’t consistent in its application. For example, he used the spelling *Prostanthera caleyi* (after George Caley) in 1834, *Acacia harveyi* (after W.H. Harvey) in 1864, and *Panicum baileyi* (after F.M. Bailey) in 1878 – all in accordance with today’s Recommendations – but interspersed with these we have not just “gillivraei” and “macgillivraei”, but also in 1868, the name *Solanum dallachii* Benth. [*Fl. austral.* 4: 456 (1868)] which honours John Dallachy, one time Superintendent of the Melbourne Botanic Gardens and important collector of Australian plants. Again, following Article 60.11 of the *Code* this should be corrected to *Solanum dallachyi*. (Similarly, names such as Ferdinand Mueller’s *Casearia dallachii* and *Jasminum dallachii* need modification.)

When checking Bentham’s long list of names I also came across *Acacia solandri*. Go to IPNI and you will find quite a few binomials terminating in this epithet, which qualifies – under Recommendation 60C.2 – as “possessing a well-established latinized form”.

There is at least one Australian species in which the epithet “solandri” – not “solandri” – is used

to commemorate Daniel Solander, the species being *Geranium solandri* Carolin. In this case the spelling of the epithet is in accordance with Recommendation 60C.1(a) and there is nothing wrong with its use. Recommendation 60C.3 does indicate that “New epithets based on personal names that have a well-established latinized form *should* [my emphasis] maintain the traditional use of that latinized form”. However, it is only a Recommendation. Thus, it is permissible to have substantival epithets derived from the same surname but spelt in different ways.

It’s difficult at the best of times to get non-taxonomists used to scientific names and when we dish up alternative substantival epithets for the same person then I’m a trifle bemused.

As taxonomists have been coining epithets for more than 250 years and because naming practices under the *Code* are frequently only Recommendations it is unsurprising that there are many real and perceived inconsistencies to be found in their spellings. Normally I just accept this as being part of the rich tapestry of life, but there are times when I wonder whether more rigorous standardization is desirable. This time, I’m obviously wondering whether the use of both latinized and non-latinized substantival epithets formed from the surname of the same person should remain permissible and if a formal change to the *Code* to eliminate the use of alternatives should be proposed.

If a proposal to change the wording of appropriate Articles was to be made to allow only one spelling what should be suggested? I’d simply invoke priority, i.e. choose the spelling first in use, something that can now be readily checked with a high level of confidence through the use of IPNI and associated databases. I suspect that this would invariably, or almost invariably, mean that the latinized substantival epithets would have to be adopted (as for example *solandri* over *solandri*). I also doubt that this approach would result in numerous changes to such epithets. And if this is indeed the case, then isn’t such a change desirable? It would be a small step towards the deletion of some of the inconsistencies found in checklists and other taxonomic publications.

Apology from the Editors: GrassWorld article correction

The reference to a GrassWorld powerpoint being available on the Kew website in Bryan Simon’s article in the last newsletter was incorrect.

The mistake was not Bryan’s but a glitch in the editing of the Newsletter for which we apologise.

The misapplication of the name *Verbena bonariensis* L. and the status of *V. incompta* P.W.Michael

P.W. Michael

Honorary Research Associate, National Herbarium of New South Wales

The attempt by Yeo (1990, p.102) 'to promote correct use of the name *V. bonariensis*' appears to have failed in the treatments of Munir (2002) and O'Leary et al. (2007) as has my attempt to introduce the new name *V. incompta* for another species with stem-clasping leaves which Yeo and I (Michael 1995) believed was hidden under the inappropriate name *V. bonariensis*.

The typification of *V. bonariensis* L. was accredited to Yeo (1990, p. 109) by Munir (2002, p. 31). Yeo (loc. cit.) refers to two specimens, one in the Linnean Herbarium of London (LINN), the other in the Clifford Herbarium (BM) and to the engraving in Dillenius (1732), all showing the same plant. Yeo (1990) chose as lectotype the specimen no.11 under genus 35 in the Linnean Herbarium (refer Jarvis 2006 for image of Herb. Linn. No. 35.11, LINN). Dillenius's *Hortus Elthamensis* is held in NSW and MEL, with a microfiche copy in BRI. The excellent engraving of *V. bonariensis* is reproduced in Burkart (1957) and it is appropriate to use this to match any plants considered to be *V. bonariensis* L. *sensu stricto*. The detailed photograph of the inflorescence of *V. bonariensis* in Richardson et al. (2006) is a fine illustration of this species.

Shimizu et al. (2001) have presented good photographs of *V. bonariensis* (p. 264) and of *V. incompta* (as '*V. brasiliensis*') on page 265. A number of Australian illustrations purporting to be *V. bonariensis*, including the photographs in Lamp and Collet (1976) and Auld and Medd (1987), fit *V. incompta*. In addition to the photographs mentioned here it is helpful to refer to the detailed drawings of *V. bonariensis* in Yeo loc. cit. Figure 2 and of *V. incompta* in both Munir loc. cit. Figure 1 (p. 32) (as '*V. bonariensis* var. *bonariensis*') and Chaw (1986) (as '*V. bonariensis*').

It is appropriate then to reserve the name *V. bonariensis* for those plants with corollas prominently exerted from the calyces giving the flowering spikes their horticultural attractiveness. This is not to say that the flower length is not variable but the floral tube can be up to 7 mm long in live material. *V. bonariensis* var. *conglomerata* Briq. is, I believe, *V. bonariensis* L. *sensu stricto* with inflorescences at an early stage of development. Yeo loc.cit. did not differentiate between this variety and *V. bonariensis*. *V. bonariensis* L. *sensu stricto* has inflorescences with acutely tipped bracts mostly shorter than the calyces. The bracts, calyces and peduncles are generously sprinkled with stalked glands. In dried

specimens floral tubes are usually between 3.5 and 5 mm long. Mature nutlets are between 1.5 and 2.1 mm long.

If *V. bonariensis* L. *sensu stricto* replaces *V. bonariensis* var. *conglomerata* in the treatments of Munir (2002) and O'Leary et al. (2007) what then happens to *V. incompta*? Is it to become a variety of *V. bonariensis* or some other species or is it to retain its specific status? I think it is sufficiently distinct from my concept of *V. bonariensis* to be considered as a separate species. It has inflorescences with acutely tipped bracts mostly longer than the calyces and is most often without stalked glands in the floral parts. The upper anthers are affixed well into the upper half of the corolla, not near the middle as in *V. bonariensis*. The flowers are much shorter – in dried specimens the floral tube is from 2.5 to 3.5 mm long – and do not obviously overtop the inflorescence. The mature nutlets vary from 1.2 to 1.5 mm long.

I believe that the name *V. bonariensis* has been used more often than not to include *V. incompta*, sometimes to the exclusion of *V. bonariensis* L. *sensu stricto*, and that the use of *V. bonariensis* var. *bonariensis* and *V. bonariensis* var. *conglomerata* by Munir and O'Leary et al. has unfortunately confused things further. It is simpler and more appropriate to give *V. bonariensis* var. *conglomerata* its correct status as *V. bonariensis sensu stricto* and to use *V. incompta* for most of the plants which are covered by both Munir and O'Leary et al. under the name *V. bonariensis* var. *bonariensis*.

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This article was written in response to the recent O'Leary (2007) paper and some questions within the Australian Plant Census Working Group. Eds.

The Australian Tropical Herbarium – open for business!

Darren Crayn

Australian Tropical Herbarium

Launch

The Sir Robert Norman Building which houses Australian Tropical Forest Institute (ATFI) and the Australian Tropical Herbarium (ATH) was officially opened on March 4th. Prior to the ceremony, the ATH Board seized the opportunity to meet, for the first time on ATH premises! Among the decisions undertaken at this meeting was to adopt CNS as the Index Herbariorum code for the ATH, and an application toward this end will shortly be made to Index Herbariorum. Collections previously accessioned as QRS, MBA or JCU will retain those codes. New accessions will use the code CNS.

At approximately 11am, in a sweltering room packed with possibly every suit in north Queensland, the Hon. Anna Bligh, Premier of Queensland, declared the Sir Robert Norman Building open. In attendance were the Hon. Desley Boyle (Member for Cairns and Minister

for Tourism, Regional Development and Industry), John Grey AC (JCU Chancellor), Professor Sandra Harding (JCU Vice-Chancellor), Dr Geoff Garrett (CEO of CSIRO), and the family of Sir Robert Norman.

After the ceremony the Premier toured the new building, already nearly fully occupied. In the ATH, Bligh delighted in the displays of the Qld EPA's vegetation mapping program (part of which is now housed at ATH) and in ATH's three Banks and Solander specimens collected during Cook's forced layover on the Endeavour River in 1770 and repatriated from the British Museum in 1988. The *Timonius timon* (Rubiaceae) specimen compared very favourably in terms of preservation of detail with a fresh specimen collected that morning. The opportunity for some shameless lobbying was not lost and I hammered home unobtrusive point #1, that if archived properly herbarium specimens retain their scientific, cultural and historical value



The Sir Robert Norman Building, which houses the Australian Tropical Herbarium and other programs in tropical terrestrial biology.

Ph. Chris Quinn.

almost indefinitely. The corollary (explicitly put!) is that herbaria that are well managed and well resourced in perpetuity are resources of inestimable worth. Specimens of *Gossia* were also on display with intent to prompt unsubtle point #2, that sympathetic Queensland Premiers can be rewarded with nomenclatural honours. However, Bligh was prematurely whisked off to her next appointment and the point was left unmade.

During the day lots of visitors circulated through the ATH and a great deal of positive PR was generated. There was however one unfortunate incident whereby a specimen on display was defaced by an unknown graffitist – the determinavit slip bearing the name *Corymbia ptychocarpa* was crossed out in red ink! It is disturbing to realise that the perpetrator must have been taxonomically trained to have known the significance of “annotating” the det slip and not the sheet label. Several card-carrying Corymbiaphobes are being waterboarded and we expect to learn the identity of the fiend soon.



Poring over the display case which houses the Banks and Solander collections are (left to right) Darren Crayn, Premier Bligh, Desley Boyle (Member for Cairns and Minister for Tourism, Regional Development and Industry), Steve Wettenhall (Member for Barron River) and in the distance, Prof. Steve Turton (Executive Director Tropical Landscapes Joint Venture). Ph. Sue Wellwood.

While on the subject of water, Cairns celebrated the event with the finest tropical downpour seen in a long time. Things were wet, very wet. Stoney Creek near the units where Chris Quinn and I were staying roared for the entire four days I was there. The rain intensified on the Tuesday night after the launch while ATH staff were clinking glasses at a northern beaches restaurant. On Wednesday morning I bade Chris and his bowl of All Bran farewell leaving myself plenty of time to make my morning flight. I returned in five minutes – the road was underwater and impassable. Fortunately by mid afternoon floodwaters had subsided sufficiently for me to wade through with a change of clothes in a garbage bag to be picked up on the other side and driven to the airport in time for a

4pm flight. I suppose this is what one might call a proper tropical welcome. Hertz got their hire car back a couple of days later courtesy of Chris who had stayed on for a few more days.



Wading through floodwaters to get home.

Ph. Chris Quinn.

Current staff

At time of writing the ATH comprised the following staff:

- Darren Crayn, director, Tel 07 4042 1859, darren.crayn@jcu.edu.au
- Frank Zich, curator, 07 4059 5014 or 07 4042 1818, frank.zich@csiro.au
- Eda Addicott, leader, vegetation mapping program, 07 4042 1807, eda.addicott@epa.qld.gov.au
- Peter Bannink, GIS specialist, 07 4042 1813, peter.bannink@epa.qld.gov.au
- Mark Newton, veg. mapping, 07 4042 1814, mark.newton@epa.qld.gov.au
- Gerry Turpin, veg. mapping, ethnobotany, 07 4042 1809, Gerry.Turpin@epa.qld.gov.au
- Gary Wilson, veg. mapping, 07 4042 1808, gary.wilson@epa.qld.gov.au
- Michelle Migdale, admin., Tel 07 4042 1837, Fax 07 4042 1842, michelle.migdale@jcu.edu.au

Future staff

In the near future we will make at least four new appointments to the ATH:

- Two Research Scientists (postdoctoral level) – one of these will be a CSIRO appointment, the other a JCU appointment;
- Molecular Technician – JCU appointment;
- Personal Assistant to Director – JCU appointment. Michelle Migdale has been contracted to provide admin services to ATH until this position is created and filled.

Of the many immediate challenges in growing the ATH perhaps one of the most important, beyond the new appointments listed above will be to build a public reference collection (PRC). CSIRO Sustainable Ecosystems at Atherton has retained the QRS PRC to support ongoing programs at that centre and plant identification services for the local public, so there is a pressing

need to develop a new one for CNS. Other short-term priorities include developing a branding scheme, fitting out the molecular lab, developing the taxonomic research programs, building synergies and collaborations and attracting students. Work on expanding the Rainforest Key to include the ferns, palms, pandans, orchids and understorey herbs is proceeding well, especially the fern module thanks to contractor Ashley Field.

About the ATH

The Australian Tropical Herbarium (ATH) boasts an unsurpassed representative collection of north Queensland's flora, a state-of-the-art molecular bioscience laboratory and contributes to Qld EPA's vegetation mapping program. It's scientists undertake leading edge plant biodiversity research and provide botanical information from the collection, associated databases and field research to partners, clients, scientists and the public. The ATH's collection comprises more than 160,000 plant specimens, bringing together collections from the Australian National Herbarium (Atherton, QRS), the Queensland Herbarium (Mareeba, MBA) and part of the JCU Herbarium collection. This unique synergy of an outstanding tropical specimen collection, molecular laboratory

Australian Systematic Botany Society Inc.

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and vegetation mapping program position the ATH as a developing knowledge bank of tropical Australian plant and fungal diversity, with the potential to guide biodiversity research in South East Asia and the South Pacific regions. Research at ATH will focus on the following themes:

- tropical plant systematic, evolutionary and biogeographical studies;
- tropical ethnobotany;
- impacts of fragmentation, degradation, weeds and threatening processes on tropical flora;
- impacts of climate change on tropical plant diversity and distribution;
- innovative utilisation of tropical plant and fungal resources;
- biodiversity and ecosystem management.



Staff of the Australian Tropical Herbarium, front (l-r) Mark Newton, Peter Bannink, Gary Wilson; rear (l-r) Michelle Migdale, Eda Addicott, Frank Zich, Gerry Turpin, Darren Crayn, Ph. Robyn Wilson.

News

People movements

Darren Crayn's move to Cairns

For those of you who remain unaware Darren Crayn has moved to Cairns as the inaugural Director of the Australian Tropical Herbarium. Even though the move only happened over Easter Darren has still managed to find time to write an item on the opening of the herbarium, one on happenings in the barcoding world and also to report on the Eichler awards for this newsletter. His new details are included on the inside front cover as well as with each of the items.

WA welcomes Michael Moody

Dr Michael Moody has joined the Australian plant systematics community in a newly created position co-sponsored by the University of Western Australia (UWA) and the Department of Environment and Conservation (DEC). Michael is a lecturer at UWA teaching a revamped Plant Diversity and Systematics course. He will be conducting research as part of the growing group of botanists in the DEC Science Division/WA Herbarium.

Michael recently completed an NSF Postdoctoral Research Fellowship at Indiana University in collaboration with Dr Loren Rieseberg entitled, *Development of a Universal Approach Using Linkage Disequilibrium and Phylogenetic Incongruence to Identify Ancient Hybridization*. He completed his Ph.D. in Ecology and Evolutionary Biology at the University of Connecticut, in 2004 with the thesis, *Systematics of the Angiosperm Family Haloragaceae R. Br. Emphasizing the Aquatic Genus Myriophyllum: Phylogeny, Hybridization and Character Evolution*.

He has been involved in phylogenetic studies of many plant groups both terrestrial and aquatic. Many recent studies have emphasized members of the Australian Flora (e.g. *Aponogeton*, *Vallisneria*, *Zostera*, and Haloragaceae). His latest research has examined a variety of topics including hybridization, invasive species, aquatic plant diversity and species hypothesis testing. Michael is enthusiastic to continue to investigate these topics and play a part in describing and understanding the incredible diversity of the Western Australia flora.

Another WA gain

Having enjoyed the life of a poor country gentleman in the New England region of New South Wales for the past 2 years, I have decided to sell my soul and work for an environmental

consultancy based in Perth. Most of the contracts are vegetation surveys for mining companies and many of the regions they visit are under collected. My primary role will be as an identification botanist, but there is the opportunity for some field work. My new work details from 4th March are:

Peter Jobson
Ecologia
1025 Wellington Street
West Perth WA 6005
08- 9322 1944
peter.jobson@ecologia.com.au

As one botanist at UNE recently stated: Does Western Australia know what they are getting?? I suggest the eastern states send comfort parcels to PERTH & NSW can send commiserations.

Peter Jobson

Australia Day honours

Congratulation to ASBS member Alex Floyd who was awarded a Medal of the Order of Australia in the last Australia Day Honours list for his services to botany, "particularly through research and identification of sub-tropical rainforest plants and through support for the North Coast Regional Botanic Gardens, and to conservation and environmental education."

Another systematics position gone?

A recent advertisement for a lectureship at La Trobe University advertises for an ecologist to teach systematics.

Web site: <http://seek.com.au/users/apply/index.ascx?JobID=12395289&cid=jobmail>

Papua New Guinea's first census of vascular plant names

Barry Conn has let us know that the first attempt at a PNG census of Vascular plants names is now available (Web ref. 1). It is largely based on the plant names included in the *PNGplants* database at the same site with links to the *International Plant Names Index (IPNI)* providing the primary source of the publication details for each scientific name. It should be considered as a draft list that will become more complete as more of the collections held at the Papua New Guinea National Herbarium (LAE) are fully data-based.

Web ref. 1. www.pngplants.org

Hotel proposed for Lae Botanical Garden

Those of you familiar with Lae, Papua New Guinea, of the past will have been familiar with the Herbarium and its associated Botanic Gardens. The once magnificent gardens were reported by the *PNG Post Courier* to have become run down in mid February 2008 and there was an order by the Forests Minister, Belden Namah, that they be rehabilitated (*PNG Post Courier* 19th Feb. 2008) with the work to be outsourced. The private sector, environmentalists and provincial authorities in Lae have opposed the outsourcing suggesting that if there is money available then the work could be carried out by the garden's staff.

Presumably as a result of the call, PNG Gardener Ltd managing director Justin Tkatchenko has resubmitted a proposal first made five years ago, to build a five star hotel in the gardens. This too has been opposed since it is thought that such a hotel would alienate most of the land that the gardens occupy. Mr Tkatchenko will be familiar to those in the orchid world as the president of the PNG orchid society and a former curator of the Port Moresby botanical garden, but is now more often described as a businessman and television personality.

Saddening also to learn from another recent report in the *Post Courier* (20th March) that the University of Technology (Unitech) in Lae is also under threat of collapse.

ABRS Eureka Prize for Outstanding Taxonomic Research

Unfortunately by the time you get this it will probably be too late to apply but it is good to see ABRS offering a Eureka Prize for outstanding taxonomic research i.e. "for outstanding research in naming, identifying, classifying or describing Australia's fauna and flora that has provided, or has the potential to provide, innovative or positive outcomes for industry or the environment." For more information see www.australianmuseum.net.au/eureka and next year remember the closing date of 2nd May.

New journal for teaching evolutionary theory

Presently the first two issues of a new journal *Evolution: Education and Outreach* from Springer, can be read for free. This is a new journal for promoting the understanding of and the teaching of evolutionary theory for a wide audience. Examples of items in the 2nd issue of the journal (April 2008) are *Understanding*

Evolutionary Trees and Philosophical Challenges in Teaching Evolution.

The journal is seeking contributions of peer reviewed evolutionary science; peer-reviewed educational papers on curricula and experiences in the classroom and "reports" and "reflections" style pieces from qualified professionals.

Springer will be offering four \$2,500 awards: two for Best Original Paper; and two for Best Classroom Application. The Best Original Paper will concern papers with topics within evolutionary biology, papers on the nature of science, and all other original research, including educational and cognitive research. The Best Classroom Application concerns papers on lesson plans, curricula, activities (including Powerpoint, and electronic interactive, Web 2.0, and other applications such as internet usage that directly impacts evolution education). More information can be found at their website below. Deadline for Consideration is August 15th Both of the Editors-in-Chief are from New York: Dr Niles Eldredge of the American Museum of Natural History and Gregory Eldredge of the John F. Kennedy High School in the Bronx.

Source: www.springerlink.com/content/1936-6434,
courtesy Juergen Kelleman

International Biogeography Society

A relatively new society on the scene but one that is growing rapidly. They will hold their 4th International Conference from 8-12 January, 2009 in Mérida, México.

Web site: www.biogeography.org/index.htm

ARC Fellowships to become more international

Senator Kim Carr, Minister for Innovation, Industry, Science and Research has indicated that Australian Research Council (ARC) fellowships will be progressively opened to greater international competition, including the new *Future Fellowships* scheme.

Opening ARC fellowships to the best Australian and international researchers was part of a suite of improvements to ARC funding schemes to create and enhance international collaboration opportunities for the Australian research community.

Other changes announced include:

- Allowing Australian Postgraduate Awards (Industry), available under the ARC Linkage scheme, to be awarded to the highest calibre postgraduate students irrespective of nationality;
- Removing restrictions on the use of ARC funds for travel for international collaborators; and
- Making enhanced international collaboration a

priority for all ARC fellowship schemes. This will bring ARC schemes into line with those of overseas counterpart agencies.

Web site: www.minister.industry.gov.au/senatorthehonkimcarr/pages/arcfellowshiptobecomemoreinternational.aspx

Media release
Senator Kim Carr
26 March 2008

Have your say on scientific matters

ScienceAlert is being promoted as the main opinion site for debate on Australian Science and Technology issues and policy. An invitation has been issued by Julian Cribb to members of FASTS member organisations and learned societies to contribute an opinion, either on an issue of particular interest and concern to them, or else to comment constructively on views expressed by others.

Opinion articles: 800 words and with a strong personal point of view. Comment: as short or long as you like. Send them to editor@sciencealert.com.au

With c. 10,000 individual visitors a day, interest in S&T news, views and issues is strong. This is a good opportunity to get well-informed FASTS and learned society views before a wider audience.

Web site: www.sciencealert.com.au/opinions/index.php

Adj. Prof. Julian Cribb FTSE
02 6242 8770 or 0418 639 245

Another challenge to Australian systematists

Just as Leon Costermans (Costermans 2006) called for systematists to more publicly justify their changes of plant names, Tony Cavanagh (2008) has now also made a call to systematists to explain what they are doing. Writing in an article entitled *So Dryandra becomes Banksia*, originally published in the *Dryandra Study Group newsletter*, he says

I would be delighted to be shown to be wrong but at the moment it appears that much of this molecular work is "science for science's sake" with little concern for practical considerations. Sure, we want things to be "right" but how far do we go in pushing the technology? I guess that my challenge to the "new" taxonomists is to EXPLAIN to us in layman's terms just what they are doing, why they are doing it and why molecular systematics is seemingly the only answer. ...I think that it is high time that there was a lot more dialogue between the taxonomists and other professionals in the horticultural, nursery and Australian plants businesses. Wanting to find the truth is one thing, but "science for science's sake" and hang the practical consequences, is something else again.

References

Cavanagh, T. (2008). *So Dryandra becomes Banksia*. *Growing Australian Plants* 25: 44.

Costermans, L. (2006). CD-ROM *Supplement to Native Trees and Shrubs of South-Eastern Australia*. (Costermans Publishing: Frankston, Victoria).

Mast, A.R. & Thiele, K. (2007). The transfer of *Dryandra* R.Br. to *Banksia* L.f. (Proteaceae), *Australian Systematic Botany* 20: 63-71.

Kevin Thiele accepted Tony Cavanagh's invitation/challenge and provided an article for the *Dryandra Newsletter* and also for *Western Wildlife*. Eds.

Utrecht Herbarium under threat of closure

On 26th March 2008 the University Board of Utrecht University, The Netherlands, informed the employees of the Utrecht Herbarium that as of 1 June 2008 the Herbarium is to be closed and, with immediate effect, access to the collections, from national as well as international workers, is to cease.

This must not be allowed!

Closure of the Herbarium is a disaster for current national and international research! Closure of the Herbarium is a disaster for any future research! Closure of the Herbarium contradicts the Biodiversity Covenant signed by the Netherlands which ensures the accessibility of data relating to biodiversity (either under Dutch ownership or under Dutch guardianship). Closure of the Herbarium is a disaster for all the botanical and ecological research taking place in South America, especially Suriname, Guyana, French Guyana and the Amazonian basin. Closure of the Herbarium is in effect a denial of the cultural-historical value of this Herbarium to The Netherlands. Closure of the Herbarium is the start of scientific deterioration and wrecks the near-finalized plans for the creation of one Dutch Centre for Biodiversity (NCB).

You can visit the website cited below and sign a petition to save the herbarium.

Web site: www.nationaalherbarium.nl/

Gerard Thijssse
Chief Collections Manager
Nationaal Herbarium Nederland

European consensus census

Work on a European consensus database for biological organisms begins in May 2008. Asking for advice on setting this database up and pitfalls to look out for prompted a great deal of debate.

Source: Taxacom Archive, March 2008

Web site: <http://eu-nomen.eu/pesi/s>

Sapotaceae meeting in Geneva

The 2nd International Meeting of Sapotaceae Researchers will take place on Thursday 2nd and Friday 3rd, October 2008 at the Conservatoire et Jardin botaniques de la Ville de Genève, Switzerland. The number of participants will be

limited to 30. If you intend to participate and would like to receive further announcements, please send an email to the address below with:

- Full name, position, postal and email addresses
- If you plan to give a talk at the meeting please provide: title, 150 word abstract, audio-visual requirements
- Would you like to facilitate a discussion or workshop at the meeting? If so, on what topic?
- Would you like to visit the herbarium while in Geneva?
- Are you interested in joining the excursion in the Swiss Alps?

Dr Laurent Gautier
Conservatoire et Jardin botaniques de la Ville de
Genève
Laurent.Gautier@ville-ge.ch

Arctic seed vault open for storage of crop plant diversity

The Svalbard Global Seed Vault, built near the village of Longyearbyen on the remote island of Spitsbergen in Norway, opened on 26 February 2008. The inaugural deposit of 268,000 distinct samples of seeds, originating from over 100 countries, included unique varieties of major food staples such as maize, rice, wheat, cowpea, sorghum, eggplant, lettuce, barley, and potato.

The opening of the seed vault is part of an effort to protect the planet's rapidly diminishing crop diversity. As well as protecting against this daily loss, the vault could be valuable for restarting agricultural production at the regional or global level in the wake of a natural or man-made disaster. Contingencies for climate change have been worked into the plan. Even in the worst-case scenarios of global warming, the vault rooms will remain naturally frozen for up to 200 years.

The Svalbard Global Seed Vault (Web ref. 1) was funded and established by Norway as a service to the world. The Global Crop Diversity Trust (Web ref. 2) is providing support for the ongoing operations of the seed vault, as well as organizing and funding the preparation and shipment of seeds from developing countries to the facility. NordGen will manage the facility and maintain a public on-line database of samples stored in the seed vault, which has the capacity to house 4.5 million samples.

The vault consists of three highly secure rooms sitting at the end of a 125-metre tunnel blasted out of a mountain on Norway's Svalbard archipelago.

The seeds will be stored at minus 18 degrees Celsius (minus 0.4 degrees Fahrenheit) and sealed in specially-designed four-ply foil packages. The

packages are sealed inside boxes and stored on shelves inside the vault.

Each vault is surrounded by frozen arctic permafrost, ensuring the continued viability of the seeds should the electricity supply fail. If properly stored and maintained at minus 20 degrees Celsius (about minus 4 degrees Fahrenheit), some seeds in the vault will be viable for a millennium or more. For example, barley can last 2000 years, wheat 1700 years, and sorghum almost 20,000 years.

Web ref. 1. www.seedvault.no

Web ref. 2. www.croprotrust.org

Hold on loans and images from BM until December 2009

The Department of Botany at the Natural History Museum (BM) is currently preparing to relocate all of its flowering plant collections to a new building. This is expected to take several months and cause inevitable disruption to services. We therefore advise that from 1st June 2008 until December 2009 we will regrettably be unable to honour loan or imaging requests for flowering plant specimens (those for ferns, bryophytes, diatoms and lichens remain unaffected). If these restrictions are likely to cause you particular problems we may be able to offer a limited service for small, very urgent loans or images; our ability to help with such requests, however, will be very much dependent on circumstances at the time. Until November 2008 the flowering plant herbaria will remain open to visitors; if you wish to visit, please therefore feel free to contact us and arrange an appointment in the usual way. We apologise for any inconvenience and thank you for your patience.

Dr Peter Stafford,
E-mail: P.Stafford@nhm.ac.uk

Gamba Grass ban extends to Queensland

Following on from the announcement in December 2007 that Gamba grass was prohibited in Western Australia, the Queensland Government has followed suit.

Primary Industries Minister, Tim Mulherin, announced on 3rd April that gamba grass had been declared a class II weed. This means that it cannot be sold, landholders have to control it and Local governments are required to include it in their pest management plans for all areas.

Web sites:
www.abc.net.au/rural/nt/content/200804/s2208373.htm
www.thedaily.com.au/news/2008/apr/03/aap-strict-controls-placed-on-gamba-grass/

NT field trip

A field trip earlier this year to the Petermann and Mann Ranges of south-west Northern Territory by botanists from the Alice Springs Herbarium, the Alice Springs Desert Park and a traditional owner of the Petermann Aboriginal Land Trust was successful in relocating *Olearia arida*, not collected in NT since 1873 when Ernest Giles reached Mount Olga (Kata Tjuta).

The *Olearia* is being propagated for display and further study at the Alice Springs Desert Park, along with cuttings of *Acacia tenuior*, previously not known for NT, and the now extremely rare *Santalum acuminatum*.

Other finds were large populations of *Acacia pachyacra* and *Leiocarpa tomentosa*, both previously poorly known. However the expedition failed to find the rare *Melaleuca fulgens*, postulating that it has been destroyed in the previously recorded location by wildfires. Camels were seen selectively grazing species of trees such as *Codonocarpus cotinifolius*, *Pittosporum angustifolium* and *Santalum lanceolatum* while other potential threats to the ecosystems observed included weeds and wild-fires.

Media release, 6th Feb 2008: www.nt.gov.au/nreta/publications/media/index.html

Devils Claw Festival

Too late for this year (Sunday 11th - Friday 23rd May) but bear it in mind for next year. The Devil's Claw Festival is a successful volunteer environmental project held every year in Gregory National Park, the Northern Territory's second largest National Park, located on the Victoria Highway south of Timber Creek. Devil's Claw (*Martynia annua*) is a weed in the park's river system which prevents the growth of native plants and causes injury and infection to native animals.

Volunteers should be physically fit and enjoy spending time in the bush. Northern Territory Parks and Wildlife Service provides food and transport around the park.

Web site: http://savanna.org.au/savanna_web/publications/savanna_links_issue30.html?tid=123172

Editors' note

Dr Jenny Barker has joined us for the next couple of issues of the Newsletter taking over much of Bill's role in editing, formatting and page setting. Jenny works as a Communications Officer with the Weeds CRC. While not being a practicing systematist her Honours and Ph.D. projects both partly involved the development of identification tools (seeds and wood) and her work with the Weeds CRC brings her into contact with some of the difficulties surrounding the identity and naming of weed species.

Food for thought

Publishing in the new millenium

For a global forum covering such diverse topics as plagiarism, duplicate publication of the same results, peer review, impact factor, online group editing systems, publication of negative or null results etc., see Web ref. 1.

Harvard University has adopted a new policy whereby final drafts of papers submitted for publication will be posted on Harvard's website (Web ref. 2).

Web ref. 1. <http://network.nature.com/forums/harvardpublishingforum/627>

Web ref. 2. http://blogs.nature.com/nautilus/2008/02/harvard_adopts_optout_openacce_1.html

Overcoming discrimination in publication in scientific journals?

New Scientist (19th Jan 2008, Web ref. 1) picked up the results of some research at the University of Toronto in Canada (Budden et al. 2008) which possibly indicated that a "double blind" system of refereeing manuscripts led to more papers by women being accepted for publication. All of

our systematic journals operate on the researcher not knowing the identity of the referee (single blind system). However some journals (e.g. *Behavioural Ecology*, subject of this study) are now adopting a "double blind" system where the referee does not know the names of the authors of the research. Possibly a way of combating any publication issues which might be related to race, nepotism or gender but the systematic community in Australia is such that most authors would be immediately identifiable by the subject of the paper.

References

Budden, Amber E., Tregenza, Tom, Aarssen, Lonnie W., Koricheva, Julia, Leimu, Roosa & Lortie, Christopher J. (2008). Double-blind review favours increased representation of female authors. *Trends in Ecology and Evolution* 23: 4-6.

Web ref. 1. <http://media.newscientist.com/data/pdf/press/2639/263907.pdf>

Barcoding for plants

For those of you with access to it there was an item on the barcoding of plants in *Nature* 451, 616 (2008).

World's oldest tree

Recent claims (16th April 2008) have been made by Leif Kullman, Professor of Physical Geography at Umeå University, Sweden, for the world's oldest tree being a spruce tree in Sweden (media release at Web ref. 1). The spruce is deemed to be 9550 years old. However this appears to be a clonal situation rather than an individual tree and if this is the case then the age would fall short of the 12000 years estimated for creosote bush (*Larrea tridentata*) (Vasek 1980) and far short of the 43,000 years communicated for the Tasmanian species *Lomatia tasmanica* by Lynch et al. (1998).

References

- Lynch, A.J.J., Barnes, R.W., Cambecèdes, J. & Vaillancourt, R.E. (1998). Genetic Evidence that *Lomatia tasmanica* (Proteaceae) is an ancient clone. *Australian Journal of Botany* 46: 25 – 33.
- Vasek, F.C. (1980). Creosote Bush: Long-Lived Clones in the Mojave Desert. *American Journal of Botany* 67: 246-255.
- Web ref. 1. www.info.umu.se/NYHETER/PressmeddelandeEng.aspx?id=3061

Weed seeds evolve more quickly in the city

The dispersal properties of isolated populations of the weed *Crepis sancta* in Montpellier, France, were compared with surrounding non-fragmented populations. *C. sancta* produces both dispersing (light) and non-dispersing (heavy) seeds. Light seeds were found to have a much lower chance than heavy seeds of settling in an appropriate place for germination and the proportion of light seeds in a population was found to be much lower for fragmented city populations when compared with non-isolated populations. Using a quantitative genetic model, the authors estimated that this change towards the production of heavy seeds in fragmented urban populations occurred over 5–12 generations.

References

- Cheptou, P.-O., Carrue, O., Rouifed, S. & Cantarel, A. (2008). Rapid evolution of seed dispersal in an urban environment in the weed *Crepis sancta*. *Proceedings of the National Academy of Sciences* 105, 3796-3799.

Transgenic canola crop seeds can last for ten years

Genetically modified canola (*Brassica napus*) seeds have been found persisting in a field 10 years after a trial crop was sown in Sweden. The discovery that transgenic seeds of some species can survive and germinate for this length of time raises questions about the monitoring of genetically modified crops particularly by those most likely to be asked to identify them i.e.

systematists. A reference to the original research at Lund University by D'Hertefeldt et al. is given below with a further web reference to how the BBC news reported it (Web ref. 1).

References

- D'Hertefeldt, T., Jørgensen, R.B. & Pettersson, L.B. (2008). Long-term persistence of GM oilseed rape in the seedbank. *Biology Letters*. Published online 1 April 2008 at <http://journals.royalsociety.org/content/g623581733561560/>
- Web ref. 1. <http://news.bbc.co.uk/2/hi/science/nature/7324654.stm>

Measuring biodiversity hotspots in Madagascar

A consortium of plant and animal systematists have been involved in the development of a new way of measuring biodiversity hot spots in Madagascar (Kremen et al.). Their work has been reported in the press (Web ref. 1, 2).

References

- Kremen, C., Cameron, A., Moilanen, A., Phillips, S.J., Thomas, C.D., Beentje, H., Dransfield, J., Fisher, B.L., Glaw, F., Good, T.C., Harper, G.J., Hijmans, R.J., Lees, D.C., Louis, Jr., E., Nussbaum, R.A., Raxworthy, C.J., Razafimpahanana, A., Schatz, G.E., Vences, M., Vieites, D.R., Wright, P.C. & Zjhra, M.L. (2008). Aligning Conservation Priorities Across Taxa in Madagascar with High-Resolution Planning Tools. *Science* 320. no. 5873, pp. 222 – 226. Abstract downloadable at <http://www.sciencemag.org/cgi/content/abstract/320/5873/222>
- Web ref. 1. <http://news.bbc.co.uk/2/hi/science/nature/342411.stm>
- Web ref. 2. www.newscientist.com/channel/life/dn13654-madagascan-wildlife-map-reveals-species-hotspots.html

Fishing interfering with plant dispersal

For the fruit-eating fish, the fresh-water pacu of the Pantanal of Brazil, the most important part of its diet in the wet season is the fruit of a palm. And the bigger the fish the more seeds they were found to have in their gut. The authors argue that removal of the largest fish by commercial fisheries and the over-fishing which is occurring will have major impacts on the dispersal of plants which are dependent on fish for this purpose and hence on forest regeneration.

Do we have any plant-dispersing fish in Australia which might have a similar impact?

References

- Galetti, M., Donatti, C.I., Pizo, M.A. & Giacomini, H.C. (2008). Big Fish are the Best: Seed Dispersal of *Bactris glaucescens* by the Pacu Fish (*Piaractus mesopotamicus*) in the Pantanal, Brazil. *Biotropica*. OnlineEarly Articles, Published article online: 15-Jan-2008

Items compiled by Robyn Barker

Websites

Aluka – access to African plant species and herbarium specimens on the web

In *ASBS Newsletter* number 127 Juliet Wege reported:

Just over two years ago, Kew embarked on the African Plants Initiative (API) – a large-scale collaborative project to digitise African plant specimens and related material. This month marks the end of work on digitising the 68,000 African type sheets housed at Kew, although digitisation of archive material and texts is ongoing. Partner herbaria around the world are simultaneously digitising their own African type collections, which will be united into a complete resource, to be released by Aluka in early 2007.

This website has been available as promised since 2007 and does allow access to information on African plants, most importantly to herbarium specimens of African plants held in numerous herbaria, after registering. If you want to see it in action however you will need to be quick since the free access will cease after June 2008.

Web site: www.aluka.org/

Getting access to European specimens

The Consortium of European Taxonomic Facilities (CETAF), in conjunction with the Global Biodiversity Information Facility (GBIF) and the EU-SYNTHESYS project have announced the launch of the BioCASE (Biological Collection Access Service Europe) portal (Web refs. 1, 2).

The BioCASE portal uses basic web services constructed by GBIF in addition to some specialized ones. It is complementary to the GBIF portal in that it provides more detailed information about specimen and observation data in the GBIF network.

The European Distributed Institute of Taxonomy (EDIT) will support further development with the aim to integrate the BioCASE portal into the EDIT Internet Platform for Cybertaxonomy. This is to provide an interface for taxonomic researchers, who need to access more detailed data than do many other users of the GBIF portal.

For example, a query on *Pinus halepensis* brought up 862 records with links to 3 images of specimens in Berlin (B), while one for *Rubus ulmifolius* brought up 4068 specimens, two of them with links to specimens in Vienna University (WU). This may well prove a quick method of locating specimens of European specimens available on the web.

Web ref 1. <http://search.biocase.org/>
[access to European biodiversity using Fauna Europaea and Euro-Med taxonomic datasets]

Web ref. 2. <http://search.biocase.de/>
[access to German botanical data].

Roderick Pages's iSpecies

iSpecies is a test of E.O. Wilson's idea of a web page for each species. The data displayed are generated "on the fly" by querying other data sources. It is quick to bring up genomics, GBIF and image data but considerably longer for articles.

Web site: <http://darwin.zoology.gla.ac.uk/~rpage/ispecies/>

Astronaut's photographs

Mentioned in Taxacom recently because of threats to the Monarch butterfly (Web ref. 1) The Gateway to Astronaut Photography of Earth (Web ref. 2) and the associated Earth Observatory (Web ref. 3) give access to a databased online collection of astronaut's photographs of the Earth. Astronauts have been taking photographs of the Earth since the early 1960s and they now have a very considerable bank of images. Recent fires and floods in Australia are featured on the Earth Observatory site along with lots more such as phytoplankton blooms off Namibia and Argentina, an oilspill off South Korea, autumn colours around Lake Superior and the long sought opening of the North West Passage

Web ref. 1. www.nytimes.com/2008/03/07/science/earth/07butterfly.html

Web ref. 2. <http://eol.jsc.nasa.gov/>

Web ref. 3. <http://earthobservatory.nasa.gov/>

Weed profiles

For those of you who contributed CHAH weed profiles they can be found at the new Weeds in Australia web site, a joint initiative of the Australian Government departments of Agriculture, Fisheries and Forestry and Environment and Water Resources.

Web site: www.weeds.gov.au/

Closure of Weeds CRC web site

The Weeds CRC is due to close on June 30, 2008 but a snapshot of its web site www.weeds.crc.org.au and associated resources will remain accessible via PANDORA, the National Library of Australia's web archive.

Web site: <http://pandora.nla.gov.au>

Items compiled by Robyn Barker

ABRS report

Staffing

Steve Dwight, the ABRS Business Manager, has accepted a position in the water division of the department, and left ABRS on April 14. Steve has managed the grants program for a number of years and has been responsible for greatly improving the efficiency of the system. We wish him well in his new position. Christy Geromboux has been appointed as database and IT manager, filling in for Robyn Lawrence until the end of the financial year. We also have 2 new programmers replacing Rob Beardow and David Levy, also until the end of June. Matt Hand and Brendan Douglas will be working in association with Greg Whitbread (IT manager at the ANBG) to deliver names from both the Australian Plant Name Index and the Australian Fauna Directory to external databases. Erin Croot, who joined us as a policy officer last year, is on maternity leave until August, with new daughter Jade. Budget uncertainty in the next financial year means that we have decided not to fill the position of Assistant Editor at this time.

Advisory Committee meeting

The ABRS advisory committee met in Canberra on 2–4 April, to discuss the applications for grant funding. Following the trend for the past several years, there were very few applications from researchers studying the vascular flora. I can only encourage people to apply for funding, and remind you that if a proposal is unsuccessful one year, it can be submitted again. ABRS is in the process of comprehensively reviewing the grants program to try and deliver greater certainty of funding to grantees, streamlined assessment processes and increased chance of co-funding. The new program should be ready for the 2008 grant round in September.

National Taxonomy Forum

The report of the proceedings of the National Taxonomy Forum was launched at Parliament

House in Canberra on March 19, by Associate Professor Bob Beeton, Chair of the State of the Environment report. You can read the report online (Web ref. 1).

Recent Publications

Fungi of Australia: The Smut Fungi (Kálmán Vánky & Roger G. Shivas)

This volume of the *Fungi of Australia*, the first overview of the Australian smut fungi in almost 100 years, includes identification keys to genera and species, full synonymy, descriptions and comprehensive lists of specimens. The accompanying CD (by Roger Shivas, Dean Beasley and Kálmán Vánky), incorporating a Lucid™ Player, provides an easy-to-use, interactive key to smut species, with comprehensive fact-sheets, distribution maps, and over 1,000 images.

Available from CSIRO Publishing, \$130

Forthcoming Publication

Tenebrionid Beetles of Australia, descriptions of tribes, keys to Genera, Catalogue of Species (E.G. Matthews and P. Bouchard).

This is the first ever Australia-wide review of this family, members of which are so very diverse that no one common name has been applied to them. Among tenebrionids are meal worms that occur in stored grain, false wireworms that are of economic importance as pests of crops, and a group of beetles found in arid regions and referred to very descriptively as pie dish beetles. The book summarises eight subfamilies and 43 tribes, gives keys to 216 genera and subgenera, and catalogues 1595 species. It is illustrated profusely and will serve primarily as an introduction to the adults of the family in Australia, providing a starting point for more detailed studies at species level.

Web ref. 1. www.environment.gov.au/biodiversity/abrs/workshop-forum/pubs/ntf-proceedings.pdf

Annette Wilson

ABLO report

My term as ABLO is already more than half gone and after enjoying a mild winter at K, we had lovely spring weather followed by more winter-like frosts in the first part of April ending in a good fall of snow 6 April 2008 that transformed the lush, green and colourful gardens of Saturday 5th to a white picture book on the Sunday. 'Churchill' appeared outside our flat with characteristic walking stick and pipe, but his nose was so cold it appeared as orange as a carrot!

Visitors hosted or facilitated by ABLO and requests

Visitors have included Joel Collins (Flora Conservation Officer, Department of Environment and Conservation, WA), Alice Quarmby (project leader of the Millennium Seed Bank project in Northern Territory) and Debbie Randall (curator of Alice Springs seed bank), Renee Ferster-Levi (a Sydney-based zoologist/educator), Karen Wilson (NSW), Rob Lamont (SCU), John Benson (NSW), John Hosking (TARCH), Dan Faith (Australian

Museum, Sydney), Tony Kanellos (Manager of Cultural Collections, Adelaide Botanic Gardens). A steady stream of requests also keeps me busy.

Events and News

Prof. David Mabberley took up his appointment as Keeper of the Herbarium, Library, Art and Archives (HLAA) in March. HLAA is an expanded role for the Keeper and integrates nicely the activities in this string of buildings. Prof. Mabberley has already met the groups he is responsible for and led considerable constructive and ongoing review and discussion on principles and practices at K. Also, a seminar series has been established to which all members of HLAA undertaking research will contribute.

Sadly, the Henry Moore sculptures have been disappearing from Kew Gardens over the last few weeks. It was a wonderful and highly successful exhibition, judging from the interest of the public. To ease the loss, the Shirley Shirwood Gallery of Botanical Art (Web ref. 1) will open this April with multiple official openings. The Gallery is billed as “Arguably the most important private collection of twentieth-century botanical art in the world”.

Petra Hoffmann (K’s Euphorbiaceae—Phyllanthaceae specialist) recently went on maternity leave to be followed by extended leave from K. She has given birth to a lovely baby boy.



Prof. David Mabberley, Keeper of the Herbarium, Library, Art and Archives (K).
Ph. J. Bruhl.

The building at K of the new wing for the library and collections is progressing well and has created opportunities for greater fitness for the staff and visitors, as entrance to the Library and Monocots in D-wing from the NE corner of the herbarium has been blocked by building, so access to these



Royal Botanic Gardens Kew, 6 April 2008.

Ph. J. Bruhl.

areas temporarily involves various convoluted routes and entrance from the NW end of D-wing.

Visiting London?

An “Oyster Card” has become an indispensable item for most visitors to London. At its simplest, the card is a reusable travel card which you can load and reload with funds and then allows cheaper, quicker access to the Underground stations and London Buses. If you arrive at Heathrow, it would be worth purchasing a card (£3) and putting say £15–20 on it and then using the Underground (and bus) to get to your destination. The card will ‘pay for itself’ after one or two days of travel. On leaving London, simply travel back by public transport and keep the Oyster Card for your next trip. If you want to check travel routes, times and news for the Underground or red buses within London, use the ‘advanced options’ on the Transport for London website, which is great (Web ref. 2).

Visits to Herbaria, Institutions and Fieldwork

Thanks to a request from Peter Wilson (NSW) I had reason to use Linnaeus’ herbarium (LINN) (Web ref. 3), and needed to examine one specimen in particular more closely with a stereomicroscope, so with the help of Janet Ashdown (LINN) and Charlie Jarvis (BM) the specimen was transferred to the Herbarium of the Natural History Museum (BM) where I could examine and measure the specimen. I have become a more or less frequent visitor of the BM.

In February I ‘discovered’ yet another treasure of RBG Kew—the Economic Botany collection (Web ref. 4) in the Banks Building (Web ref. 5). I was shown the collections in the Banks Building by Mark Nesbitt and Victoria Pitkin. I am sure that there is something of relevance to most Australian and New Zealand botanists which would make a visit worthwhile.

Mid-February, I visited Barcelona. The buildings by Gaudi and the works of Miro are, of course, stunning. I was able to visit the herbarium at the University of Barcelona (BCN) and then spend a day in the field north of Barcelona thanks to my host Aaron Pérez Haase. It was wonderful and informative travelling through Live Oak Forests and associated vegetation communities and seeing many culinary and medicinal herbs (rosemary, thyme, bay, lavender, etc.) and other horticultural plants (*Helleborus argutifolius*, *Viburnum tinus*, *Gallanthus*, *Arbutus*, *Erica*, etc.) in the ‘wild’.

I have made two very busy and productive trips to the Paris Herbarium (P). Both trips have been wonderfully facilitated by Prof. Philippe Morat. The second was also greatly aided by Drs Aymonin, Florence and Labat. Although there



Aaron Haase at Barcelona Herbarium BCN (working collection).
Ph. J. Bruhl.

are plans at P for redevelopment and therefore closures and/or impediments to visits, there is no obvious sign of the work about to commence and I hope to make one more trip there. Mid-March I visited the herbarium at the University of Cambridge (CGE) to fulfil various requests. Assistant Curator, Gina Murrell, was most helpful. As with herbarium P, redevelopment is planned, but for the present, the collection in the original building is accessible. Meanwhile, CGE is in the process of imaging its major historical collections (Henslow, Darwin, etc.) (Web ref. 6).

Research

My work on floral development of *Lepironia* (Cyperaceae) has expanded from scanning electron microscopy (SEM) to include sectioning of wax embedded material viewed with light microscopy (LM). This work is progressing well and a paper has been offered to the Monocots4 conference.

Extraction, sequencing of samples of Schoeneae (Cyperaceae) continues with help in the lab from Laszlo Csiba at the Jodrell. This tribe is notably diverse and abundant in temperate southern Africa and Australia. This project involves a dispersed group working on relationships within the Schoeneae working towards a symposium presentation at Monocots4. This work ties in nicely with the ABRs Postdoc grant I and Karen Wilson were awarded to study systematics of *Schoenus*. This project will strengthen collaboration among Herbarium NSW, Royal Botanic Gardens Kew and University of New England.

The ‘Flora of Australia’ work on Phyllanthaceae by Ian Telford (NE) and me is progressing well despite the long distance, and has benefited by my access to the collections at K, BM, P, and

CGE, and timely collaboration with Kanchana Pruesapan and Peter Van Welzen (both L), which includes work on a joint paper.

Work in New Caledonia by Australasian botanists?

Prof. Philippe Morat (P) would like to hear from any Australian and New Zealand botanists who have collected plants in New Caledonia. If they could send a short biography, and ideally also include the nature (e.g. years, dates, numbers, taxa targeted) of their collections and collaborators (local contacts, helpers and colleagues) that would be ideal. Prof. Morat is compiling such data from every Herbarium for a general check-list.

If you can provide or contribute to a list from your institution composed of foreign collectors (only names) who have deposit their New Caledonian specimens in your Herbarium, Prof. Morat said that would be also most useful.

Please email Prof. Philippe Morat directly at (morat@mnhn.fr). He would be most grateful and will acknowledge your contribution.

Upcoming and further information

Along with a horde of Australians, I will be in Copenhagen mid-August for the Monocots4 International Conference. I have booked in to visit Herbarium C and hope to get to LD in Sweden after the conference. I am in the process of arranging a trip to FI for late May. I still hope to get to GENT, E, L, and NMW. In addition to emailing the Council of Heads of Australasian Herbaria (CHAH's list server) prior to such visits, I have established a blog site where I will alert you of my intentions regarding herbarium visits. Simply check the blog periodically as you like (Web ref. 7). If you want to try to get me or the



Prof. Phillipe Morat in his office laboratory (P).
Ph. J. Bruhl.

next ABLO to visit a herbarium in particular, email me directly.

On the home front

The boys had a great time preparing for and performing in Darell Primary School's end of year musical. Now, Fran and the boys are eating Cornish pasties and travelling on steam engines, visiting National Trust sites in Cornwall during this term break. We will all head off to see fossils in Dorset next weekend.

References

- Web ref. 1. www.kew.org/press/shirley_sherwood.htm
- Web ref. 2. www.tfl.gov.uk/
- Web ref. 3. www.linnean.org/index.php?id=326
- Web ref. 4. www.kew.org/collections/ecbot/index.html
- Web ref. 5. www.kew.org/collections/banks.html
- Web ref. 6. www.plantsci.cam.ac.uk/herbarium/content.html
- Web ref. 7. <http://jeremybruhl.blogspot.com/>

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Cracking the Darwin stubbie

Judy West was presented with a Darwin stubbie as the final speaker at the September 2007 ASBS Conference in Darwin. It was finally opened last March at one of the traditional Darwin Friday pizza lunches when Judy and Dale Dixon got to work together on *Calandrinia*.

New publications

National Taxonomy Forum

***Proceedings of the National Taxonomy Forum, Australian Museum, 4-5 October 2007.* Compiled by Kathryn Hall. FASTS: Federation of Australian Scientific and Technological Societies (Jan. 2008).**

This document reflects the Australian taxonomic community's unanimous concern regarding the urgent need for action and funding. It provides a record of the presentations by invited speakers and reflects the input of participants at the workshop sessions held at the National Taxonomy Forum at the Australian Museum, Sydney on 3–4 October 2007. The document covers the topics, debates and view-points raised and addressed by participants, but it is not a verbatim transcript of the actual proceedings. It has been compiled and edited to incorporate additional submissions from taxonomists and user-groups unable to attend the forum in Sydney. It is intended for dissemination among the taxonomic community, user-groups and other interested parties to provide solutions and strategies for the future practice of taxonomy in Australia.

Download from web site:
www.environment.gov.au/biodiversity/abrs/workshop-forum/pubs/ntf-proceedings.pdf

Associate Professor Beeton, who chaired the 2006 National State of the Environment Committee and who also chairs the Australian Government's Threatened Species Scientific Committee launched the proceedings on 19th March.

Media release: www.fasts.org/images/news2008/mr-taxonomy.pdf

Professor Beeton also published an opinion piece Taxonomy in Peril on the Science Alert web site.

Web site: www.sciencealert.com.au/opinions/20080904-17166.html

Tasmanian vegetation

***From Forest to Fjaldmark: Descriptions of Tasmania's Vegetation.* By S. Harris and A. Kitchener, Department of Primary Industries, Water and Environment, Printing Authority of Tasmania, Hobart (2005). ISBN/ISSN 0724663649**
Download or purchase for \$55 from website.

The principal aim of this book is to describe the classification of mapping units, including ecological vegetation communities used in TASVEG. However the historical context of vegetation mapping in Tasmania (Chapter 2) is important because the TASVEG map originates from several mapping processes.

Reviewers sought

***Fungi of Australia: The Smut Fungi.* By Kálman Vánky, Roger G. Shivas and Dean Beasley (CD-ROM), Department of Primary Industries and Fisheries, Queensland, (March 2008). CSIRO Publishing/Australian Biological Resources Study (ABRS).**

A copy of this new book in the *Fungi of Australia Series* can be made available if any member is interested in providing a review for the newsletter.

Further information: www.publish.csiro.au/pid/5729.htm

***Plant Names: A Guide to Botanical Nomenclature.* 3rd edition. By Roger Spencer, Rob Cross and Peter Lumley, Royal Botanic Gardens, Melbourne, (November 2007), CSIRO Publishing. Colour illustrations; 176 pages.**

A copy of this new edition can be made available if any member is interested in providing a review for the newsletter.

Further information: www.publish.csiro.au/nid/21/pid/5707.htm

A brief description of Tasmania's biophysical environment (Chapter 3) is given for the benefit of mapping users outside the State.

The description of each of the 158 mapping units, most of them ecological vegetation communities, forms the bulk of this book. The format of these descriptions is consistent, descriptive and cross-referenced with relevant literature and other processes. A photograph of each community is included to assist the user to visualise the community type. Each description includes an example locality, distinguishing features and similar types, a thumbnail distribution map, a list of the bioregions in which the community occurs, the site characteristics, habitat and ecology, the composition and structure of the community and equivalent floristic communities.

All the mapping units are grouped (Chapter 4) under 11 headings that reflect major broad vegetation types or landscape types. A key is provided for determining which of the 11 sections will contain the description being sought. The procedures underpinning the vegetation mapping

process, including its GIS processes, are described in a separate technical manual.

Web site: www.dpiw.tas.gov.au/inter.nsf/WebPages/LJEM-6K2749?open

Information modified from the book's Introduction and from the web site. Thanks to Marco Duretto who drew attention to it. Eds.

All you need to know about weed control

Noxious and environmental weed control handbook: a guide to weed control in non-crop, aquatic and bushland situations. 3rd Edition. By Rod Ensbey and Annie Johnson. New South Wales Department of Primary Industries (2007).

For those of you involved in the weeds field in its myriad forms the following handbook has been widely recommended. It is a guide to weed control in non-crop, aquatic and bushland situations in NSW. Contents include:

- Integrated weed management
- Managing your legal responsibilities in applying pesticides
- Calibration of equipment
- Reducing herbicide spray drift
- Using adjuvants, surfactants and oils with herbicides
- Cleaning and decontaminating boomsprays
- Withholding periods
- Herbicide resistance
- Control techniques using herbicides
- Weeds declared noxious in New South Wales
- Pesticide permits
- Noxious and environmental weed control
- Gas gun application
- Appendix 1: Boom spray calibration methods

Download from web site: www.dpi.nsw.gov.au/aboutus/resources/majorpubs/guides/noxious-environmental-weed-control

Biofuels

The Weedy Truth about Biofuels. By Tim Low and Carol Booth. Invasive Species Council (2008).

Launched at the Climate Change conference in Sydney in October 2007, this book summarises the weed risks of 18 proposed biofuel plants, including *Jatropha*, *Arundo donax*, neem, olives, willows, poplars and castor oil plant. The report was revised in March 2008.

Download from web site: www.invasives.org.au.

Richard Schomburgk

The Diplomatic Gardener. Richard Schomburgk: Explorer and Botanic Garden

Director. By Pauline Payne. Jeffcott Press (2008).

For those outside of Adelaide this book is available via the web site given for \$62.50. A number of sample pages can also be viewed.

We have been provided with a review copy and this will appear in the next issue of the newsletter.

Web site: www.digitalprintaustralia.com/shop/book_shop.html

Rubber: its story

The Thief at the End of the World: Rubber, Power and the Seeds of Empire. By Joe Jackson, Viking, (2008). 432 pags. \$27.95.

Deals with the original transport of rubber seeds from Brazil to Asia by Henry Wickham and the social, environmental and political consequences. A comprehensive review can be seen at the web site below.

Web site: www.nature.com/nature/journal/v451/n7182/full/4511055a.html

Australia's early coastal contacts

Strangers on the Shore: Early Coastal Contact in Australia. Peter Veth, Peter Sutton and Margo Neale (eds.) National Museum of Australia Press (April 2008). 320 pages, paperback, 235 x 172mm. \$29.95. ISBN 9781876944636

This book is a result of a conference on early coastal contacts with Australia held at the National Museum of Australia in Canberra in May 2006. The blurb provided by the publishers indicates that it deals with contacts between indigenous Australians and outsiders such as Macassans, Portuguese, Dutch, English, French, Americans and others over 400 years. The short mention in *The Australian* on 19th April recommended the collection of essays by indigenous and non-indigenous scholars exploring archaeology, anthropology and prehistory of Australia. Whether it has something to offer those of us seeking hints on the pre-European flora we have yet to see.

Web site: www.unireps.com.au/isbn/9781876944636.htm

National Library maps

Australia in maps [cartographic material]: great maps in Australia's history from the National Library's collection. Text: Maura O'Connor, Terry Birtles; editorial consultant, Martin Woods; editor, John Clark. National Library of Australia, Canberra, (2007). ISBN 9780642276353

Australian Systematic Botany Society Inc.

Interested in editing the ASBS Newsletter?

We have indicated that we would like to pass the baton on to someone else by the end of 2008.

Please forward expressions of interest to Marco Duretto at marco.duretto@tmag.tas.gov.au

For more information on what is involved you are welcome to contact the current editors.

This atlas features examples of historically significant maps, many unique to the map collection of the National Library of Australia. They illustrate significant historical landmarks in the development of Australia as a nation and are accompanied by explanatory text and illustrations. They represent just a small sample of more than 600 000 maps of Australia, the countries of the world, the oceans, and the skies, held within the Maps Collection.

Web sites:

<http://protocat.nla.gov.au/Record/3822181/Reviews#details>

www.nla.gov.au/apps/onlineshop?action=OLSDisplay&id=nla.int-ls27635-bk

Recently published by the Royal Botanic Gardens, Edinburgh

Two biographies have just been published on men whose names will be familiar to Australian systematists. Archibald Menzies (1754-1842) made an important collection of plants while employed as naturalist on the Vancouver expedition surveying the north-west coast of America between 1791 and 1795. More importantly for Australians were his collections in the Albany region on the same expedition in 1791. These collection and his manuscripts are still to be found in Kew. The second subject, William Roxburgh (1751-1815), is perhaps less well known except for those who work on tropical plants in Australia, but his name is indelibly associated with the two volume *Flora Indica; or Descriptions of Indian Plants*.

***Monkey Puzzle Man: Archibald Menzies.* By James McCarthy, Royal Botanic Gardens, Edinburgh and Whittles Publishing (December 2007). 250 pages. £25 plus postage and packing.**

Web site: www.rbge.org.uk/assets/files/Publications/monkeypuzzlemantflier.pdf

***William Roxburgh: The Founding Father of Indian Botany.* By Tim Robinson, Royal Botanic Gardens, Edinburgh and Phillipmore and Co. Ltd. (March 2008). Large format,**

250 pages, 150 illustrations, hardback. £50 plus postage and packing.

Web site: www.rbge.org.uk/assets/files/Publications/roxburgh-flyer.pdf

Plant dyes

***Eco Colour: Botanical Dyes for Beautiful Textiles.* By India Flint. Murdoch Books (March 2008). 240 pages, hardcover, 270 x 225 mm. AU\$59.95 (£25.00) ISBN 9781741960792**

Web site: www.murdochbooks.com.au/ecocolour.htm

Some of you may have come across India Flint's work at exhibitions in Botanic Gardens (Web ref. 1). She uses leaves and plants, particularly those of *Eucalyptus*, for dyeing textiles and has now documented how she goes about it in this book on eco-sustainable plant dyes. She is also, through a website, *Tinctoria Australis*, inviting dyers working with Australian indigenous plants to participate in a new national investigative dye project. Working with a uniform recording method and data sample sheet and using digital reproduction methods she hopes to collate information for future publication. Further information about this project can be found at Web ref. 2 where there are examples of dyeing with quandong and *Acacia* and a link with Ferdinand von Mueller.

Web ref. 1. www.environment.sa.gov.au/botanicgardens/past_exhibitions.html

Web ref. 2. <http://tinctoria-australis.blogspot.com/>

Forthcoming publications

The final two supplementary volumes 7 (F-Frer) and 8 (Fres-G) of *Taxonomic Literature* in the *Regnum Vegetabile* series will be published this year.

Incidentally those of you with an IAPT membership can have free access to *Taxonomic Literature Online*. You just need to register and then wait for your access to be approved.

Web site: <http://tl2.idcpublishers.info/>

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

AD tel: (08) 8222 9307 fax: (08) 8222 9353 www.flora.sa.gov.au	HO tel: (03) 6226 2635 fax: (03) 6226 7865 www.tmag.tas.gov.au/Herbarium/ Herbarium2.htm	MEL tel: (03) 9252 2300 fax: (03) 9252 2350 www.rbg.vic.gov.au/ biodiversity/	NSW tel: (02) 9231 8111 fax: (02) 9251 7231 www.rbg Syd.gov.au/conservation _research/herbarium_&_services
CANB tel: (02) 6246 5108 fax: (02) 6246 5249 www.anbg.gov.au/	BRI tel: (07) 3896 9321 fax: (07) 3896 9624 www.epa.qld.gov.au/herbarium	DNA tel: (08) 8999 4516 fax: (08) 8999 4527 www.nt.gov.au/pwcent	PERTH tel: (08) 9334 0500 fax: (08) 9334 0515 http://science.calm.wa.gov.au/ herbarium/
QRS tel: (07) 4091 8800 fax: (07) 4091 8888	MBA tel: (07) 4048 4745/4743 fax: (07) 4092 3593	NT tel: (08) 8951 8791 fax: (08) 8951 8790	<i>Australian University Herbaria</i> Contact CHAH representative: Murray Henwood, University of Sydney
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These listings are published in each issue. Please inform the Editors of any change

AUSTRALIAN SYSTEMATIC BOTANY SOCIETY INCORPORATED

The Society

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

Membership

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

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

The Newsletter

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

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

Contributions

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

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

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

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

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

Advertising

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

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

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

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