

Banksia



Photo: Lyn Cook



Outgoing President Andy Austin (left) & incoming President Nerida Wilson (right)

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Message from our President, Nerida Wilson

I hope you have all recovered fully from the SASB2015 conference in Perth in December!

Although I'm greatly biased, I think the meeting held in December in Fremantle was a great success. I will take this opportunity to extend heartfelt thanks to Mark Harvey and the other members of the organising committee, who worked tirelessly to ensure the meeting ran smoothly, and showcased a great range of systematic science. I think the quality of the science presented was a great reflection on the systematics community as a whole - well done!

I'd also like to thank the outgoing President of SASB, Andy Austin, who has done a great job at keeping the society running smoothly and effectively. In particular, I'd like to highlight the contributions of the outgoing Secretary, Andrew Thornhill, and the outgoing Webmaster, Bob Mesibov, who have maintained the general communications of SASB. All SASB officers, past and present contribute to the active community we have today, and I am

pleased to announce that we now also have a specific role for student representation on the council.

The next years for the Society will be a bit of a change, as we move to being a fee-paying society. This will enable us to be in a position to effect some very positive changes. Some of these include implementing an awards scheme, and supporting training and opportunities for students in a way that we were simply not able to do before. It will also assist the early stages of organizing conferences, when deposits are necessary to secure bookings. I hope members will remain with us and support the society into this empowered future.

The next conference in 2017 will be held in Adelaide, and will serve as the twenty-year anniversary of SASB. I have no doubt it will be a wonderful event, and look forward to it immensely.

Nerida Wilson
Western Australia Museum

New Generation | Next Generation

SASB conference Fremantle, December 2015

Report by Tom Semple



Fremantle – what a fantastic location for the 2015 SASB and Invertebrate Biodiversity and Conservation conference! Having never been to the city before, I was delighted by the quaint laneways, beautiful old houses and, of course, waterfront setting. To kick things off on the night before the conference proper, we enjoyed drinks and canapés at the Maritime Museum, overlooking the mouth of the Swan River. Some eminent professors were left standing outside in the drizzle while the contented faces of security guards gazed through the glass doors with bemusement. This incident aside, the mixer was an excellent opportunity to meet some new people and catch up with old friends, and I congratulate the organising committee for this and the rest of the conference, which went very smoothly. As the now-mixed researchers returned to the city centre to bed down for the next three days, only the night herons and fishermen were left to keep the harbour company. Although the weather was less than ideal, the clouds would soon part, providing cool, sunny days for the rest of the week.

Day one kicked off with the usual welcome addresses, followed by an incredibly moving and relevant Welcome to Country, by Barry McGuire. I think for many attendees, including myself, this was a highlight of the day, or even the whole week. Following this were interesting talks ranging from marine phylogeography and conservation in the “cold room”, to insect transcriptomics and plant evolution in the other (a quirk of the venue meant that conference-goers needed to continuously switch rooms in order to thermo-regulate).

Days two and three held symposia on next-gen systematics, the challenges of molecular taxonomy, and the diversity and conservation of the Pilbara biota, all interspersed with the delightful addition of Mentos chews. A recurrent theme that stood out was that the choice of genes and the methods used to estimate phylogenies are still central issues for systematics. But instead of recalling the talks, blow by blow, I thought I would give a first-timer’s impression of the conference overall.

As a first-time SASB attendee, and a first-year PhD student with no data or results to speak of, I thought I would “play it safe” and present a poster. My advice to students in a similar situation is this: give a talk! This is not one of those conferences where you feel intimidated by senior researchers, or where only the best are selected to speak. The systematics and taxonomy world is a small one, and the overwhelming majority of those attending were friendly and enthusiastic to hear what the next generation of researchers are working on.

Something that stood out for me was the final day’s panel discussion on molecular taxonomy. I have no doubt that the debates started here could have continued all day and all the way to the Little Creatures brewery that night, if given the chance. The enthusiasm displayed was certainly encouraging, and I only hope that it is carried through into the real world of funding and recognition for this kind of research. Of particular note was the promise from at least one journal editor present, to accept species descrip-

tions based solely on DNA sequences. Although ideas like this have been tossed around for some years already, they are still far from being commonly implemented. Hopefully those who attended, and those who are reading this, can now see that they at least have the support of the SASB as they push systematics forward with new technologies and methods.

Overall it was a constructive, informative and enjoyable three days, and I look forward to the next SASB conference in Adelaide. The organisers certainly have a challenge ahead of them to live up to the charm of Fremantle, and the proximity of such a good local pub!

Tom Semple

PhD candidate

Research School of Biology

The Australian National University

Editor’s note: AGM minutes are at end of this newsletter



Photo: Mike Crisp

Macarena time @ the conference dinner.

Missed the past decade and never heard of the Macarena? [\[see original Los del Rio video here\]](#)

New Generation | Next Generation

Student prizes



Giulia Perina (Edith Cowan University & WAM) and Liz Milla (The University of Melbourne): student presentation award winners

Giulia's winning talk was titled "First light on a neglected group of subterranean Crustacea (Bathynellidae: Bathynellacea) in the Pilbara region: the Ethel Gorge aquifer community", and coauthored with Joel Huey, Ana Camacho and Annette Koenders.

Liz's award-winning presentation was titled "Exploring the extraordinary evolutionary diversity of an Australian moth family (Heliozelidae; Lepidoptera) through targeted sequence capture", and co-authored with Stephen Wilcox, David Young and Douglas Hilton.

New Generation | Next Generation

Knowledge is Power: Workshop Tips and Tricks

Report on pre-conference career workshop

On Sunday December 6th 2015, prior to the combined Invertebrate Biodiversity and Conservation and the Society of Australian Systematic Biologists conference, Dr Nerida Wilson (Western Australian Museum) ran a highly successful workshop aimed at assisting early career researchers (ECRs) with developing and managing rewarding careers in science. The title of this one day workshop, 'Career Development for Women', indicated an emphasis on issues more pertinent to women in science, and unsurprisingly all the attendees were women. Nonetheless, the content presented was not entirely gender-specific and not strictly focussed on the empowerment of women, but instead highlighted practical skills and strategies to help young and bright professionals navigate through the tricky field of science.

To begin, Nerida discussed career management and 'The Imposter Syndrome', which involves feelings of inadequacy, uncertainty and intellectual fraudulence despite past achievements and success. This syndrome has been increasingly recognised in women, and it was eye-opening to discover that nearly every participant in the workshop similarly experiences these regular feelings of self-doubt. This issue and the impacts of these fears on our confidence were unknown to most, but must be considered as we work towards planning and managing successful careers.

The remainder of the workshop continued to highlight issues and identify areas where many students and ECRs tend to struggle, from abstract writing, job applications and knowledge of the email charter to public speaking and mental toughness. Guest speakers from various sectors of the scientific community were, additionally, invited to offer valuable tips and tricks based on personal experiences. The speakers included Dr Juliet Wege (Department of Parks and Wildlife) who discussed networking and set us the challenge of introducing ourselves to at least one new person each day of the upcoming conference, Mara Pritchard (Communications and Media Manager, Western Australian Museum) who provided some helpful advice about communicating science through the media, Dr Jan Strugnell (La Trobe University) who offered guidance on grant writing, and, to finish, Dr Zoe Richards (Western Australian Museum), Dr Lisa Kirkendale (Western Australian Museum) and Dr Amber Beavis who discussed the importance of work-life balance from a female perspective.

These women provided an amazing peek into their lives, both on a professional and personal level, which created a connection

and opportunity for discussion of genuine concerns not often possible in larger, more formal (typically male-dominated) settings. Upon leaving the workshop, we felt more aware of the areas we need to work on, but also more confident in moving forward and delving deeper into academia. We highly recommend this workshop to students and ECRs as a valuable tool to meet new aspiring scientists, as well as experienced professionals in an informal, small-group setting; to identify potential issues often not discussed; and to learn strategies to help achieve a fulfilling and successful career. Hopefully this workshop will become a regular feature linked to SASB conferences!

Barbara Langille and Danielle Stringer
The University of Adelaide



Painted door @ Little Creatures Brewery (opposite conference venue)

Report by Australian Conservation Taxonomy Award winner Kirilee Chaplin



Untangling *Tympanocryptis* spp. taxonomy: the taxonomy, ecology and conservation genetics of grassland earless dragons (Agamidae: *Tympanocryptis* spp.) in north-eastern Australia

I knew I wanted a PhD project with an exciting fieldwork component, lots of genetics work and a strong conservation application. I was very lucky to find a project at Museum Victoria supervised by Jane Melville and Jo Sumner encompassing all of this, working on grassland earless dragons (G.E.D.s) in north-eastern Australia. The taxonomy and systematics of the *Tympanocryptis* genus, and the north-eastern Australian G.E.D.s in particular, have been unclear for decades due to morphologically cryptic lineages. Integrative techniques using molecular data and classic morphology have only recently begun to identify distinct evolutionarily significant units within the north-eastern Australian G.E.D. species-complex, resulting in several new species descriptions by Jane Melville et al. (2014).

I began my PhD in early 2014, looking at three recently described species within the north-eastern Australian G.E.D. species-complex; *T. wilsoni*, *T. condaminensis* and *T. pentalineata*, which occur in highly fragmented grasslands of rural Queensland

around Roma, the Darling Downs and Normanton (respectively). A fourth distinct lineage (not part of the species-complex) of G.E.D. also occurs in the Central Highlands near Emerald. All of these species/lineages are restricted to the tropical savannahs of north-eastern Australia, which have been in decline for decades due to anthropogenic impacts such as mining and agriculture. Less than 15% of native grasslands remain in these areas, and those extant patches are often highly degraded and fragmented. The G.E.D.s of north-eastern Australia are therefore all of conservation concern, but with an incomplete taxonomy and very little empirical ecological or genetic data, legislative protection is currently not an option. Very few museum specimens or tissue samples existed for each species/lineage, so I have undertaken field trips to increase the sampling size and range of these G.E.D.s.

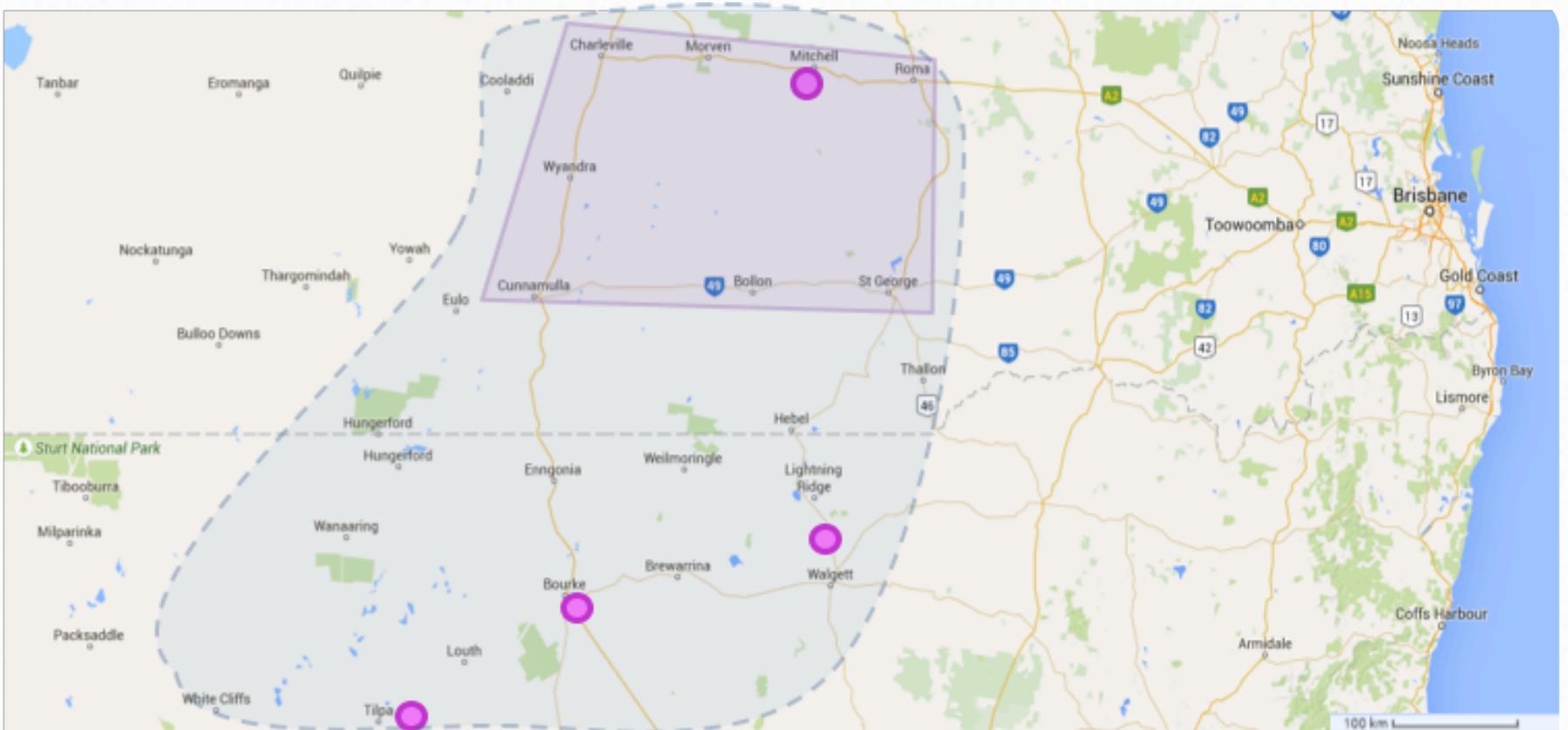
One of the exciting outcomes of my fieldwork in late 2014 was the identity of a sample I collected near the town of Mitchell (50km West of Roma). I assumed this was *T. wilsoni*, which was the

only known species in the area. However, after sequencing the mitochondrial DNA of this individual, I found that it was actually part of a distinct mtDNA lineage from the northern NSW catchment region of the Darling River. This lineage is known from only three previous samples ranging across a very broad area of northern NSW from Tilpa to Walgett, and was not thought to extend into Queensland. However, the Maranoa region of south-west QLD is also part of the catchment area of the Darling River, so it is very possible that the riverine topology of the area has facilitated the dispersal of this lineage throughout the Northern Darling Basin.

The Northern Darling Basin lineage was originally thought to be an introgressed lineage of the wide-spread species *T. tetraporophora* due to the phylogeny displaying incomplete nuclear DNA lineage sorting, however this pattern may also suggest recent or incomplete speciation. The Mitchell sample sparked my interest

in pursuing the species delimitation of the Northern Darling Basin lineage further, and we have received information from local parks rangers and ecologists that there are unidentified earless dragons in other parts of the Maranoa region. As there are still only four samples for this lineage spanning a range of several hundred kilometers, further sampling is a priority to be able to make a valid taxonomic assessment. One of my objectives for late 2015 was therefore to undertake field work across the entire Maranoa region, with an intensive sampling focus on the Northern Darling Basin lineage.

The Australian Conservation Taxonomy award has provided the financial support required for this trip to happen, by funding the field costs of 24 days of sampling throughout the Maranoa region. I gratefully acknowledge the support of the SASB and The Nature Conservancy with this award, and look forward to sharing my results with you all soon.



Four samples of a distinct lineage of grassland earless dragon (*Tympanocryptis* spp.) have been recorded from a broad range throughout the Northern Darling Basin (blue area), including three samples from northern-NSW and one from the town of Mitchell in the Maranoa region (purple area).

What are the Australian Conservation Taxonomy Awards?

The Australian Conservation Taxonomy Awards were created by [The Nature Conservancy](#), with support from [The Thomas Foundation](#). They are aimed at supporting taxonomic research by young scientists on organisms of relevance to conservation. There are two awards on offer each year, one in the field of Botany and the other in Zoology, with \$5000 available to the winners in each category. Applications are judged by the The Nature Conservancy with assistance from the Society of Australian Systematic Biologists (Zoology) and the Australasian Systematic Botany Society (Botany).

Applications for the next round close 13 May 2016, with application forms and instructions available from the Australasian Systematic Botany Society website [[see here](#)].

Previous winners include:

- James Clugston (2015) Exploring new approaches for conservation genetics of *Cycas calcicola* Maconochie (Cycadaceae) in Australia (RBG Syd)
- Rachel Fowler (2015) The genus *Eremophila* in Australia's arid zone: phylogeny and biogeography in South Australia (UMelb, RBG Vic)
- James Shelley (2014) The Kimberley Ark: assessing and conserving freshwater fish biodiversity in Australia's last pristine river systems (UMelb)
- Lalita Simpson (2013) What is at risk? Phylogeography and taxonomy of orchids endemic to Queensland's mountain top biodiversity hotspots (JCU)
- Todd McLay (2012) Classification, phylogeny and conservation of *Xanthorrhoea* in Western Australia (UMelb)



Kirilee Chaplin with dragon

Report on AES systematics symposium Cairns 27-30 September 2015



By Matt Krosch

Entomology up north & to Asia beyond



Australian Entomological Society annual conference attendees in the foyer of the Pullman Hotel, Cairns

The 2015 meeting of the Australian Entomological Society held at the Pullman Hotel in sunny Cairns between the 27-30th September had a strong phylogenetic and systematic flavour. The first keynote of the conference was given by Kevin Johnson from the University of Illinois, USA, on progress in elucidating the Hemipteroid Tree of Life. This project has entailed combining morphological and genome-scale data to resolve some of the trickier deep nodes among the major hemipteroid orders (Psocodea, Thysanoptera, and Hemiptera). Kevin's keynote was very engaging and drew heavily on his expertise on parasitic lice and the evolutionary relationships between the lice faunas of mammals and birds, and between biting and sucking lice. New genome-scale data are revealing that lice groups that use the same hosts are more closely related than they are to other groups with the same mouthpart morphologies.

Following Kevin's keynote was a large symposium on Hemipteroid systematics and taxonomy chaired by Lyn Cook (UQ) and Stephen Cameron (QUT). Talks covered a range of topics and taxa, with thrips, leafhoppers, scale insects and psyllids featuring heavily. Desley Tree (QDAF) showcased the wide diversity of Australian thrips and their gall forms, Li Xin Eow (QUT) presented on her PhD research into their phylogenetic relationships, Alison Lima (UFP, Brazil) spoke to how little is known of tropical thrip diversity compared with regions more highly populated by taxonomists and Lawrence Mound discussed the quarantine significance of thrips on Norfolk Island. Australian psyllid species richness, phylogenetic relationships and host specificity were canvassed by Gary Taylor (UA), Martin Steinbauer (La Trobe) discussed host and range expansion in a native psyllid species, and Francesco Martoni (Lincoln, NZ) presented data on the morphology, phylogeny

and microflora of New Zealand psyllids. Taxonomic revision and confusion in leafhoppers were spoken to by Murray Fletcher (NSWDPI) and Linda Semararo (Vic DEDJTR). Scale insect taxonomy and systematics were discussed by both Penny Mills and Yen-Po (Paul) Lin from UQ, with Paul's talk on "the cryptic diversity and possible origin of Linnaeus' glasshouse scale insect" considered by many as perhaps the most entertaining of the conference.

The conference also featured two general systematics and taxonomy sessions that were chaired by Bryan Lessard (CSIRO) and Matt Krosch (QUT). Bryan presented on his PhD work that resolved the alpha-taxonomy of the Australian horse flies and gave a prelude to his current post-doc on soldier fly systematics. Rolf Oberprieler (CSIRO) discussed the hunt to assign names to new potential pest weevils in Australasia. Andrew Mitchell (AM) presented data on the molecular phylogeny of the Australian members of a noctuid moth subfamily, including taxonomic revisions of many genera, and suggested that over half the total Australian species diversity remains undescribed. Another visiting American phylogeneticist, Keith Bayless (NCSU), presented on his PhD pro-

ject within the famed Weigmann lab that focuses on a molecular phylogeny of a subgroup of the true flies using whole body adult transcriptomes. Andrea Lawrence (USyd) reported on her PhD project which focuses on the using molecular phylogenetics to resolve the morphological taxonomy of the common cat flea.

Overall, the 2015 AES conference was engaging and thought-provoking. The phylogenetics and systematics component, headlined by Kevin Johnson, complemented the other conference themes and continued the AES tradition of providing a home for such research. I would strongly encourage all Australian Systematists working on arthropods to consider becoming members of the Society and attending their annual conference.

Matt Krosch

Queensland University of Technology

Editor's note:

One of the session slots at the AES conference in Cairns was given over to trials for the "Linnaean Games", hosted by AES student representative Gurion Ang. Linnaean Games are an integral part of the annual Entomological Society of America meetings and involve teams of four students representing their university in an on-stage quiz show of all things entomological. This year, 2016, the International Congress of Entomology (ICE) will be held in Florida, USA, and the ESA is hosting an all-comers welcome version of the Games—and Australia is entering a team.

The trials held in Cairns were one of the approaches used to help select a team of Australian PhD candidates to compete

against the rest of the world in Florida. Australia will be represented by Caitlyn Perry (The University of Melbourne), Justin Cappadonna and Penny Mills (The University of Queensland) and Emily Johnston (The University of Adelaide). Nathan Burke (The University of New South Wales) was originally selected but has had to withdraw. It is expected that there will be about 6000 attendees at the Congress, so it is a great opportunity for the students to meet entomologists from around the world.

You can check out videos of previous Linnaean Games on YouTube, for example, 2015:

<https://www.youtube.com/watch?v=hA05K0NET4&list=PL21ACF32985978D25&index=1>

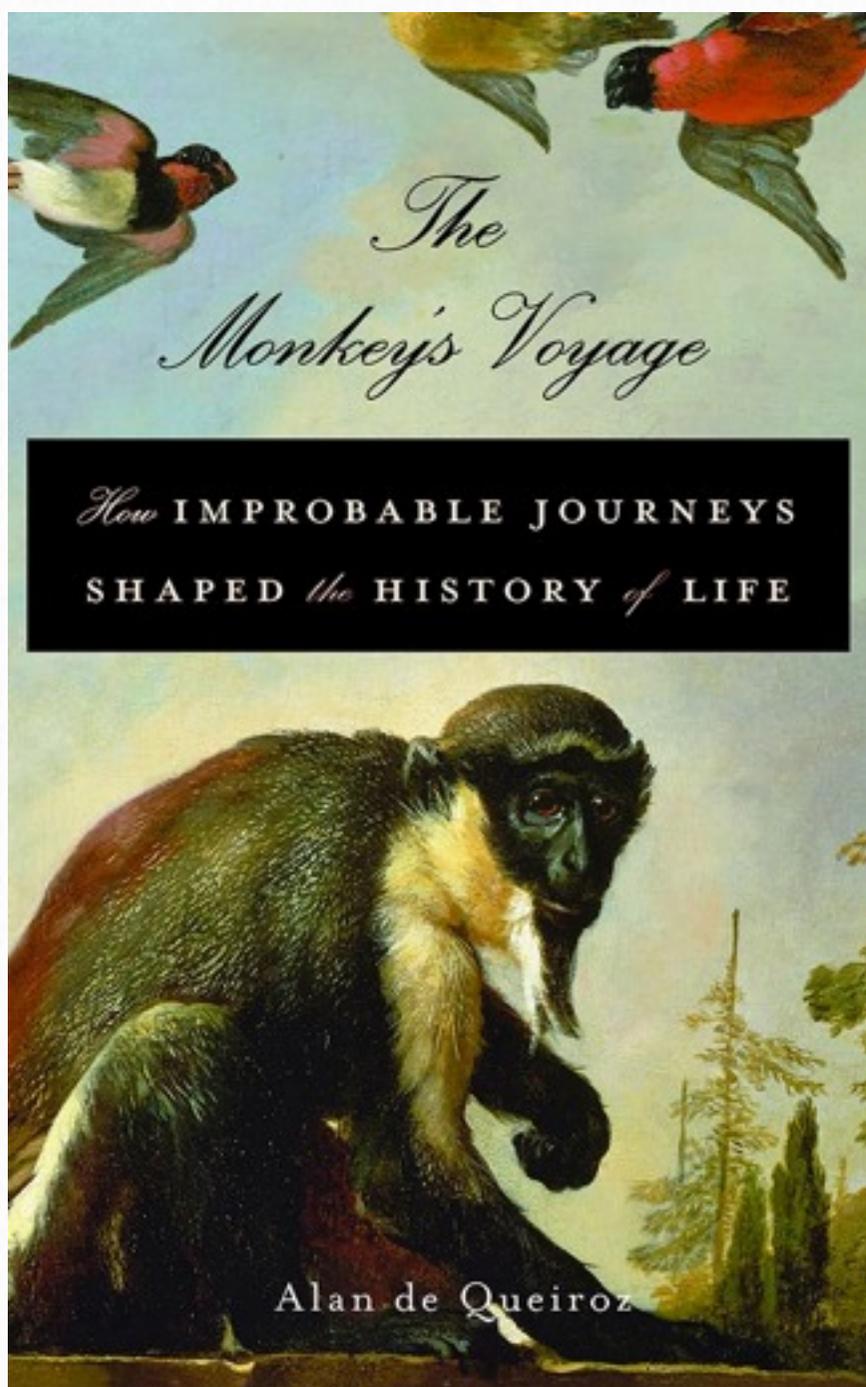
or read about its history: <http://dx.doi.org/10.1093/ae/59.3.165>



**2016 XXV International
Congress of Entomology**

Orlando, Florida, USA | September 25-30

Book Review



**The Monkey's Voyage:
How improbable journeys shaped the history of life**

Alan de Queiroz

Basic Books, New York, 2014

Available in both hard copy and digital versions

Review by Mike Crisp

Research School of Biology

Australian National University

Historical biogeography has long interested systematists, dating back at least to de Candolle in the early 19th century (Candolle 1820; Nelson 1978). However, it didn't emerge as a separate discipline until both evolution (Darwin and Wallace 1858) and, much later, continental drift and plate tectonics (Hammond 1971; Wegener 1915) were combined with Croizat's (1962) holistic thesis that "earth and life evolve together" (vicariance) to give a testable theoretical basis to biogeography (Nelson 1978). Until then, it was mostly something that systematists did 'on the side', a speculative add-on to taxonomic monographs.

The central theme of Alan de Queiroz's book is the history of biogeography as a discipline. This theme is paralleled by a narrative of the author's personal journey of discovery—from his initial uncertainty in how to interpret the disjunct distribution of his garter snakes in Baja California, through his flirtation with vicariance to his ultimate acceptance that long-distance dispersal (and establishment; hereafter, LDDE) explains the overwhelming majority of trans-oceanic disjunctions. De Queiroz is an inveterate story teller—and a very good one, too—and the book is structured around a series of narratives: about how particular groups of organisms got to be where they are today, about the larger-than-life personalities who drove the controversies and theoretical shifts, and about his personal journey of enlightenment. Every chapter concludes with a story, emphasized in italics, about an extraordinary LDDE event. So, it is clear from the beginning that the book is heading towards an emphatic conclusion that LDDE trumps all. Each of these vignettes leads enticingly to the next chapter—stories are appealing—but herein lies danger of bias because people often accept stories uncritically and biogeography is rife with just-so stories. Just because something could happen doesn't mean that it did. De Queiroz admits this caveat and it needs to be borne in mind in reading the book because the many astounding LDDE stories give a cumulative impression that LDDE is the overwhelmingly dominant process in biogeography. One is reminded of Thor Heyerdahl's heroic voyage on the Kon Tiki, which showed that native American people could have navigated balsawood rafts from Peru to remote Pacific islands. Although Heyerdahl proclaimed that therefore the Polynesians originated in South America 3,000 years ago and populated the Pacific from the east, this deduction does not follow. Genetic and archaeologi-

cal evidence suggest that the Polynesians were descended from the Lapita people and colonised the Pacific from south-east Asia (Valentin, Déroit et al. 2015); see also <http://www.theguardian.com/science/2015/dec/28/3000-year-old-burial-ground-may-reveal-secrets-of-polynesian-migration>.

The book is written in a popular style—de Queiroz clearly enjoys writing about science for a general audience. But there is a serious intent to send a message his peers: vicariance is dead—long live dispersalism. Thus, the subtitle (“...how improbable journeys shaped the history of life”) is an ironic reference to a dismissive statement by Nelson that dispersalism is “a science of the improbable, the rare, the mysterious, and the miraculous” (p. 192). The implication is that Nelson would consider colonisation of the Americas by monkeys via LDDE across the Atlantic to be truly miraculous (and unbelievable): primates are supposed to be extremely poor at surviving long journeys across seawater (Chapter 9). Yet LDDE is the most likely explanation, given that the molecular divergence between the New World monkeys and their nearest relatives in Africa is too young (by at least 50 Myr) to be explained by vicariance. De Queiroz increasingly hammers the mocking “miracles” theme as the book progresses (e.g., Chapter 12, “A world shaped by miracles”).

Paradigm shifts?

In biogeography, as in other fields of science, the holy grail is the quest for a general theory. Thus, de Queiroz structures his history of biogeography as a series of paradigm shifts *sensu* Kuhn (1962), arguing that Darwinian dispersalism was replaced by land bridge theory until dispersalism made a comeback, reaching its apogee in the “New York School of Zoogeography” in the 1940s. Then, the advent of plate tectonic theory in the 1960s shifted the paradigm to vicariance. Finally, dispersalism was revived by the development of molecular dating from the mid 1990s onwards and is the current paradigm.

But does the history of biogeography fit the “paradigm” paradigm? Perhaps not in the same way as relativity replaced Newtonian mechanics and quantum mechanics replaced relativity. LDDE, land bridges and vicariance are all currently recognised as distinct biogeographic processes that can operate separately or in concert. In a word, de Queiroz’s paradigm model of scientific progression in biogeography is simplistic. Sometimes there are no general explanations in science.

Even if the rise of vicariance is viewed as a paradigm shift, the actual paradigm shift occurred in geology (plate tectonics), rather

than in biology. The biology of vicariance was based on an existing model of speciation: when land masses rift apart, species populations are also split and become geographically separated. This leads to allopatric speciation, a model that had been already well accepted by mid-20th century biologists of the “modern synthesis”, such as Dobzhansky, Mayr and Simpson, long before vicariance came into vogue. The strength of vicariance theory is that it makes the testable prediction that the phylogenies of multiple, independent related lineages should show congruent area patterns through a chronological succession of vicariance events. This prediction was initially tested by comparing the branching sequence in area cladograms (phylogenies in which species names are replaced with the areas of endemism in which they occur), and later by comparing the divergence times between the same sets of areas in different cladograms. That is, the vicariance model offered a general theory of biogeography and, to this extent, was possibly a new paradigm.

One weakness of vicariance is that it begs the question of how ancestral populations became widespread in the first place, before undergoing vicariance by range fragmentation. Vicariance aficionados, such as Croizat, Nelson and Heads, have evaded this problem by distinguishing between “normal” dispersal, which occurs by range expansion across more or less continuous (or at most patchy) suitable habitat, and “long-distance” dispersal (LDDE), which involves long jumps across significant barriers, such as oceans. This distinction is explained in a glossary at the beginning of de Queiroz’s book but is arbitrary: is a series of hops between closely spaced islands (e.g. Heads 2008; Ladiges and Cantrill 2007) “normal” or “long-distance” dispersal? The reality is that speciation by vicariance necessarily involves prior dispersal of the ancestral population, so the two processes are not logical alternatives. Vicariance aficionados have made a distinction between the two modes of dispersal to sharpen the differences between the schools of biogeography: vicariance requires ancestral cosmopolitanism which can arise from “normal” dispersal, i.e. range expansion, whereas dispersalism requires improbable “long-distance” jumps from a “centre of origin” (Nelson and Platnick 1981). Given that continents rift apart very slowly (centimetres per year), speciation by vicariance is a problematic hypothesis because it can neither be observed directly nor subject to experimentation. How long can dispersal continue across a slowly widening gap before effective gene flow ceases and the allopatric pops speciate?

Nor is there a clear distinction between vicariance and land bridge theory, which can be viewed as the converse of vicariance—continental drift fuses land masses together as well as rift-

ing them apart. Far from being a failed paradigm, land bridge theory was revived by plate tectonics: formation of the isthmus of Panama is well studied and widely accepted as resulting in both the Great American Interchange (terrestrial biota, MacFadden 2006) and vicariant speciation in marine biota (Great American Schism, Lessios 2008). Similarly, Wallace's line reflects the long history of separation between the Laurasian and Gondwanan biota but a steadily increasing interchange of flora between Australasia and SE Asia has been attributed to narrowing of the sea gap as the Australian plate drifts northward (Crayn, Costion et al. 2014).

In de Queiroz's narrative, the "DNA explosion", i.e. molecular dating of lineage divergences (Chapter 5), triggered a paradigm shift from vicariance to dispersalism. However, speciation via LDDE was not a radical new theory—it had always had its advocates from Darwin onwards. Furthermore, land bridge theory coexisted with dispersalism long after the rise of the New York School in the 1940s; for example, see the magnum opus by the Leiden botanist van Steenis (1962). The significance of molecular dating was that it provided a test for distinguishing geological (vicariance, land bridge, drowning etc.) hypotheses from LDDE, by using inferred divergence times. This led to a revival of dispersalism because a surprising number of divergences were found to be too young (or too old, Crisp, Trewick et al. 2011) to fit particular geological hypotheses. Nevertheless, at least some vicariance hypotheses have survived those tests (Mao, Milne et al. 2012; Thornhill, Ho et al. 2015).

De Queiroz notes skeptically (pp. 111 and 271) that there has been a tendency to treat vicariance as a default explanation. But there is a logical reason for prioritising vicariance over LDDE in hypothesis testing: it predicts a concerted pattern, whereas random LDDE does not. A unique ancient LDDE event can only be inferred by elimination of other possibilities (vicariance, land bridge, drowning etc.)—the hypothesis cannot be tested by direct evidence for the very reason stated by Nelson and mocked by de Queiroz—that it posits a rare, stochastic event. But rejection of the alternatives by dating is weak support for LDDE because molecular dating is prone to being too young, as Heads (2005) emphatically pointed out. LDDE hypotheses are best supported if they fit a concerted (correlated) pattern across lineages and are predicted from known factors such as dispersibility of organisms or prevailing wind (Muñoz, Felicísimo et al. 2004) or ocean currents, for example vertebrates in Madagascar (Samonds, Godfrey et al. 2012). Otherwise, they are pretty much just-so stories.

Extinction

Extinction is too often ignored in biogeography and this can result in misinterpretations (Crisp, Trewick et al. 2011). For example, de Queiroz approvingly quotes (p. 100) Nelson's (1975) statement that the New Zealand biota is perhaps the most important in the world: explain the biogeography of NZ and you explain the world. Certainly, much attention has been given to NZ over a very long period, dating at least from Hooker's (1853) essay. New Zealand is considered important because it is both a fragment of Gondwana and a long-isolated island. Moreover, it is geographically close to Australia but it rifted away from Gondwana long before Australia did. Thus, vicariance theory predicts that New Zealand biota should show a closer relationship to South America than to Australia, whereas dispersalism does the opposite. Consequently, de Queiroz devotes much space to these questions in his book. But New Zealand is a problematic model because it was drowned—or nearly so—in the Oligocene. Debate has raged over whether the extant biota is entirely derived by post-drowning LDDE or whether some lineages survived the inundation. Recently, the controversy appears to have been resolved in favour of the latter by the discovery of terrestrial deposits from the critical period (Lee, Lindqvist et al. 2014). This long-running controversy illustrates the problem of islands as biogeographic models: their biota are highly vulnerable to extinction and other rare stochastic events that are almost impossible to reconstruct, e.g. how did the ancestor of the tuatara get to New Zealand, or Amborella to New Caledonia (Grandcolas, Nattier et al. 2014)?

History of the personalities

The parallel theme about controversies and the larger-than-life personalities involved is entertaining and enlivens the book. De Queiroz appears to have drawn material from David Hull's book "Science as a Process" (1988), which itself was an idiosyncratic account of the era of the "New" New York School and its influence on systematics. De Queiroz's account of the ascension of vicariance during this period (Chapter 2) is compelling. It is the story of Brundin's brilliant insight (Brundin 1965) that the phylogeny of his chironomid midges reflected the breakup of Gondwana, of how Gary Nelson discovered Brundin's previously obscure publications, and how Nelson then spread the gospel via the "New" New York School to the world. One wonders whether vicariance would have captured the imagination of biogeographers so effectively if Brundin's midges did not show such a strong and consistent Gondwanan pattern—what if Brundin had worked on a much more dispersive group of organisms? Another of Brundin's

important contributions was his lucid explanation of Hennig's new phylogenetic method, which implemented the crucial Hennigian insight that lineages should be strictly monophyletic and defined using shared derived characters alone (Brundin 1972). Hennig's work had been largely ignored because it was written in a very formal style, and in classical German, which few could comprehend.

In contrast, the major contributions of the contemporary school at the Natural History Museum in London are barely mentioned in the book (except a nod to Humphrey Greenwood and Colin Patterson). Chris Humphries, who brought cladistics and vicariance to botanists, and to Australia—inspiring both Pauline Ladiges in Melbourne and myself—is not mentioned at all, nor are other BM colleagues such as Peter Forey and Richard Fortey. The book is written from the perspective of a herpetologist and contributions by specialists on other organisms tend to be overlooked. Among botanists, Susanne Renner and Michael Donoghue are rightly and extensively quoted but important contributions of others are little mentioned.

Much attention is given to the eccentricities of some larger-than-life characters, especially Croizat, Nelson and Heads. For example, de Queiroz discusses Nelson and Platnick's (1981) surprising view, expressed at the very end of their book, that humans could be as old as 80 million years and could have vicariated as the supercontinents rifted apart. Gary Nelson expressed this view to me

over a copy of Haeckel's map of the human races (Fig. 1), and de Queiroz relates a recent conversation with him along similar lines. Nelson and the panbiogeographers have clung to an extreme version of vicariance but their idiosyncratic views scarcely constituted a paradigm. Just as Farris and other Hennigians parodied phenetics in the 1980s as part of their campaign to promote cladistics, so too does de Queiroz parody the panbiogeographers—with an ironic smile—to strengthen his case that dispersalism is the new mainstream of biogeography. Journalists and popularisers of science play up controversies and eccentric personalities to make an arcane topic more interesting.

Conclusion

This is a very readable and entertaining book, written in a lively and engaging style. At the same time, it explains the science of biogeography in language that is accessible to non-specialist readers and it is illustrated with fascinating examples. But don't take it too seriously because it is written with a mission to convince the reader that dispersal trumps all—and this is a misleading oversimplification. Vicariance, dispersal and land bridges are not alternative paradigms and all three processes have influenced the distribution of organisms.

Acknowledgements

I would like to thank Pete Cranston and Lyn Cook for helpful discussion.



Fig. 1. "Hypothetical sketch of the monophyletic origin and of the extension of the 12 races of man from Lemuria over the Earth", from Haeckel (1876) and reproduced on the dust jacket of Nelson and Platnick (1981).

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Charles Chapman (1904–1989)

an unsung enthusiast, conservationist and collector of rare plants from a Western Australian hotspot of floristic diversity



Photo F.W. Humphries, source: Australian National Botanic Gardens (<http://www.anbg.gov.au/photo>)*

Calytrix superba, nominated by Charles Chapman as the floral emblem of Carnamah Shire.

A belated appreciation by Mike Crisp

While recently working on my monograph of *Daviesia* (Fabaceae), I was reminded of significant contributions to the discovery of Australia's unique biodiversity by local country folk, who often receive little acknowledgement of their important role. These people live "on the ground", sometimes in remote areas that are rarely visited by taxonomists, and even when they do visit, their time is limited. In such places, some local residents develop a passion for their regional biota, coming to know the diversity of their district extremely well and making discoveries that have been missed by the professionals. More often than not, the locals are farmers or their family members, a good example being Georgiana Molloy, whose 19th century collections for James Mangles (Orchard 1999) have been celebrated. Not only do these people make important contributions as citizen scientists but they also become effective local advocates for conservation. One such person who is neither widely known nor celebrated was Charles Chapman

(hereafter CC). For instance, he is not mentioned in the bios of Australian botanists and collectors in Orchard (1999).

I first became aware of CC's discoveries early in my taxonomic work on *Daviesia* (mid 1970s), when I found several of his specimens in the Western Australian Herbarium representing undescribed species from the northern sandplains of WA (Eneabba-Carnamah-Coorow area). There was little information on the labels except terse locality details, so I made contact and arranged to meet him on my next field trip to WA. His residence and farm were near Winchester, which was on the road from Carnamah to Eneabba. There is nothing see at Winchester today—it was founded as a townsite at the beginning of the 20th century and never grew beyond a school, general store and a few houses. I found CC to be a most helpful, enthusiastic and generous person. By then he was in his mid-70s, yet he was full of energy and dropped everything (he was still running a farm) and took us out to the localities of the species in question. We didn't have time to

look for all the *Daviesia* species in his district during our brief visits but, in between times, he went out and sampled them extensively anywhere between his place and Perth, to which he drove down regularly. Field trips with CC were a bit hair-raising—he routinely drove at 100 Kph on the unsealed roads of his district. But then, he had served for long periods on the Carnamah District Road Board, including a stint as Chairman, so I guess he had made sure that the roads were in good condition. He took delight in leading me to possibly the most spectacular species in the genus—*D. speciosa*—which was as yet unnamed. The population was a tiny clone languishing in a roadside gravel pit on the edge of Tathra National Park. The plants are spectacular, with large, delicate red flowers nestling among a crown of bluish thorns (Fig. 1) but they only reproduce via root suckers and never set seed (or even fruits), perhaps due to inbreeding depression or because they have lost their presumed pollinators (birds). I think that CC had some influence in the declaration of the national park. I recall him telling me that he also bought up blocks of uncleared land near his farm to conserve some of the kwongan heathland. When he sold his farm Elouera after retirement (in his 80s!), he retained

his “sandplain” block (Carnamah Historical Society and Museum, 2016), though he and his wife moved to Perth.

I was by no means the only botanist who was assisted by CC. In FloraBase (the online database of the WA Herbarium), I found seven species of plants named after him, detailed in the Appendix below, including *Daviesia chapmanii* (Fig. 2). In the Australian Virtual Herbarium, I found 480 specimens collected by CC between 1954 and 1985, nearly all from the northern sandplains, as well as a couple from the Carnarvon-Pilbara region. These represent 29 families but the great majority are from Fabaceae, Myrtaaceae and Proteaceae, likely reflecting the interests of the botanists with whom he had contact (see Appendix below). CC was very active in his local community in various roles but his interest in and knowledge of the flora were acknowledged when the Carnamah Shire asked him to nominate a wildflower as an emblem for the shire. He chose *Calytrix superba*. CC also inspired and men-



Fig. 1. *Daviesia speciosa*
Pencil drawing by Anne Prowse, in possession of MDC



Fig. 2. Charles Chapman with *Daviesia chapmanii*
Photo M. Crisp, source: Australian National Botanic Gardens
<http://www.anbg.gov.au/photo>*

tored other local wildflower enthusiasts, such as Alison Doley, whose collections can also be found in the WA herbarium.

According to his online biography (Carnamah Historical Society and Museum, 2016), he was a very active member in his local community. Among other things, he was active in local cricket clubs, Carnamah District Agricultural Society and the Farmer's Union of WA, and Carnamah District Road Board. He served with the 25th Light Horse Machine Gun Regiment at Canning Weir during the second world war, and later became a Justice of the Peace, presiding as a magistrate over criminal and traffic cases. How he also found time to be a successful farmer—he expanded his holdings as others contracted—and indulge his passion for wildflowers, I cannot imagine.

Charles Chapman died on 4 April 1989. Most of the botanists who knew and were helped by him belong to my generation and we are retiring ourselves, and sadly the memory of CC could fade into the mists of time. I hope not.

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Appendix: plant species named after Charles Chapman, with the authors' etymological dedications.

Acacia chapmanii R.S.Cowan & Maslin, *Nuytsia* 12(3):455-456 (1999).

"This species is named for Charles Chapman (1904–1988) [sic], a farmer who lived near Winchester, Western Australia, and became interested in the local flora, especially those he did not recognize. He collected extensively in the Coorow area and across to Green Head and made the first collections of this and other new species."

Darwinia chapmaniana Keighery, *Nuytsia* 19:38-40, Fig. 1 (2009) .

"Named after Charles Chapman, farmer, collector and wildflower enthusiast from Winchester, who first collected this species."

Daviesia chapmanii Crisp, *Austral. Syst. Bot.* 8:1181, Fig. 9 (1995)

"The species is named in honour of Charles Chapman, formerly a farmer at Winchester, near Carnamah, north of Perth. Mr Chapman deserves much credit for his tireless efforts, especially after retirement, to discover and document the rich and rare flora of the northern sandplains before it was all destroyed by clearing. He brought to light many species, including this one."

Hensmania chapmanii Keighery Chapman's Hensmania; *Fl.Australia* 45:486 (1987)

"Named in honour of Mr Charles Chapman, farmer and conservationist, who discovered this and other species of Western Australian plants and who has donated many collections to the Western Australian Herbarium."

Homalocalyx chapmanii Craven; *Brunonia* 10:147-148 (1987)

"This species is named after Charles Chapman, of Winchester (now of Perth), Western Australia. Mr Chapman has a keen interest in the indigenous flora occurring in a large region based on Winchester and has made his unique knowledge freely available to botanists through both his collections and his guidance in the field."

Persoonia chapmaniana P.H.Weston, *Telopea* 6:117-119 (1994).

"In honour of the late Charles Chapman of Coorow. Mr Chapman collected extensively on the sand plains in the Coorow-Eneabba area. His field knowledge of this area and his *Persoonia* collections greatly assisted this study."

Scholtzia chapmanii Trudgen ms, which is more correctly known as *Scholtzia* sp. Winchester (C. Chapman s.n. PERTH 05625386) [FloraBase entry].

Although not formally published, the phrase name and locality clearly refer to Charles Chapman.

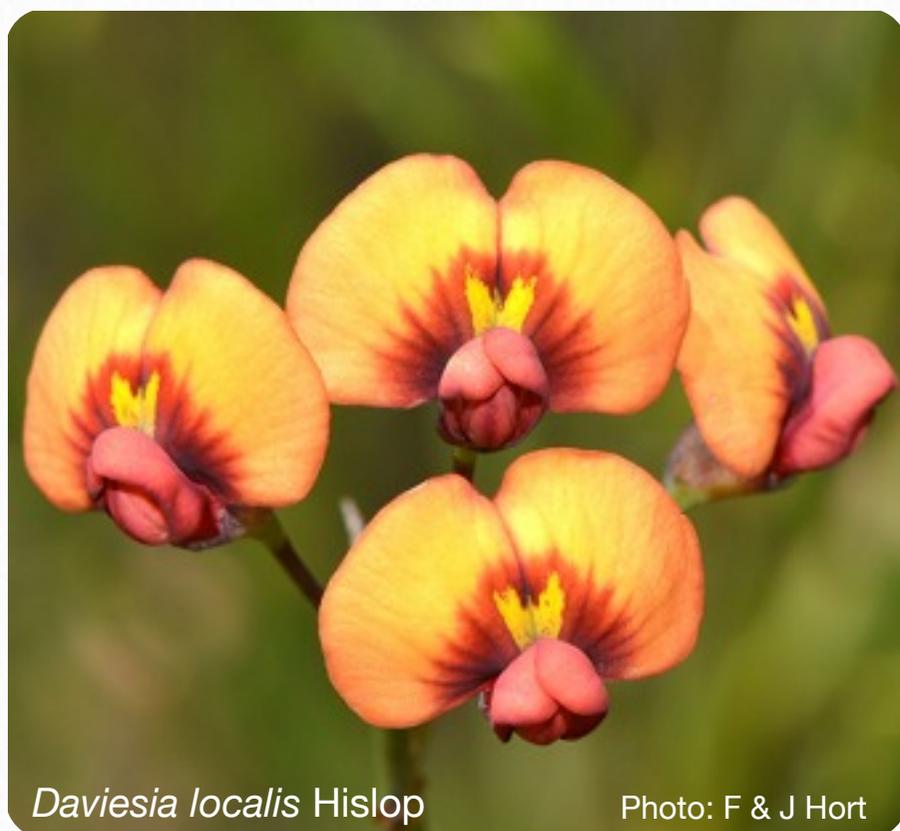
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What's new?

Some recently described Australian taxa (editor's pick)



Daviesia localis Hislop

Photo: F & J Hort

[\(CC BY-NC 2.0\)](#)

Plant: *Daviesia localis* is a recently discovered and described species of egg-and-bacon pea from the south west Western Australia floristic region (SWAFR). Discovery of previously unrecognised species in relatively well-studied, human-modified landscapes is rare for plants. This species occurs in Jarrah and Marri forest near Bindoon, in the Darling Range (east of Perth) and is currently listed by WA Parks and Wildlife as a Priority 1 species.

Hislop, M. (2015) *Daviesia localis* (Fabaceae: Mirbelieae), a new, short-range endemic from the northern Darling Range in Western Australia. *Nuytsia*, 25, 27-30.



Cystococcus campanidorsalis Semple et al.

Photo: Lyn Cook

[\(CC BY-NC 2.0\)](#)

Animal (with conflict of interest): *Cystococcus campanidorsalis* (the bell-backed bush coconut) is a recently discovered and described species of gall-inducing scale insect found in inner Brisbane and several nearby national parks in SE Queensland. The genus is unusual in that mothers first give birth to sons, then to daughters once the sons have matured within their mother's gall. The young daughters climb aboard their brothers' abdomen for airlifting out of the gall and away to a new host plant. In the photo, each of the three winged males has one or more young sisters on its elongate abdomen. All *Cystococcus* occur on bloodwood eucalypts and *C. campanidorsalis* is restricted to *Corymbia trachyphloia*.

Semple, T.L., Gullan, P.J., Hodgson, C.J., Hardy, N.B. & Cook, L.G. (2015) Systematic review of the Australian "bush coconut" genus *Cystococcus* (Hemiptera: Eriococcidae) uncovers a new species from Queensland. *Invertebrate Systematics*, 29, 287-312.



Image from NHSSA website (modified from Taylor *et al.*). [Link to page here.](#)

Example of the colourful and informative images in the paper. This is part of a plate for *Myotrioza clementsiana* Taylor, newly described from Moorunde Wildlife Reserve, SA

Monograph: Great to see a new genus of Australian psyllids (*Myotrioza* Taylor), and a bag full of newly described species too.

Taylor, G.S., Fagan-Jeffries, E.P. & Austin, A.D. (2016) A new genus and twenty new species of Australian jumping plant-lice (Psylloidea: Triozidae) from *Eremophila* and *Myoporum* (Scrophulariaceae: Myoporeae). *Zootaxa*, 4073, 1-84.

If you have any suggestions for highlighting newly described Australian flora or fauna, send a blurb, image and citation to the editor (Lyn Cook, l.cook@uq.edu.au).

Photo report: pre-conference field work



Photo: Alicia Toon

Looking east through Stirling Range National Park, WA. L-R: Paul Lin, Greg Harper, Lyn Cook (UQ)

Prior to the SASB conference in Fremantle, several members of the Crisp (ANU), Peakall (ANU) and Cook (UQ) labs headed to the Stirling Range National Park to collect and photograph several groups of plants and insects. We were comfortably accommodated between peak climbs and unseasonal rain in cabins at the Stirling Range Retreat on Chester Pass Rd. One of the main purposes was population sampling the poison peas (*Gastrolobium*) endemic to the peaks, but several undescribed species of scale insect were also found by the group.

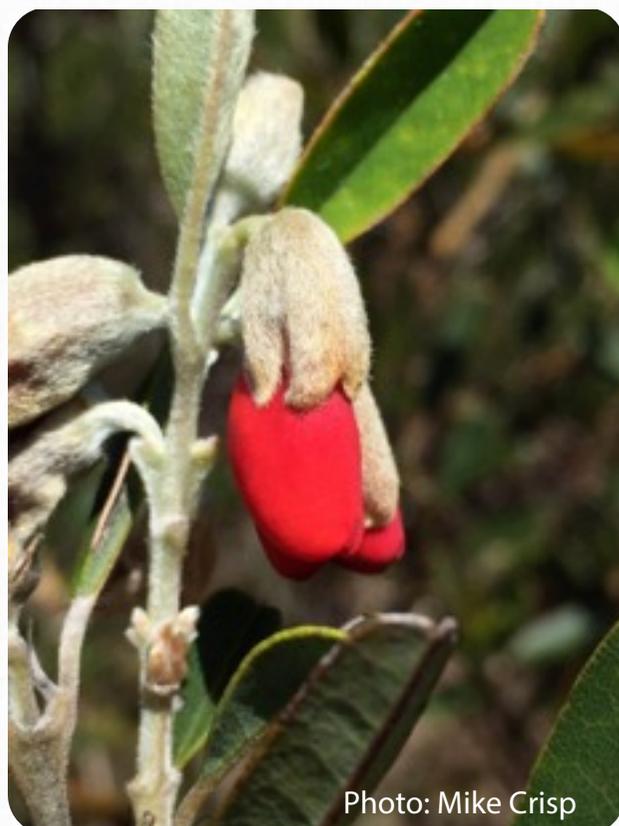


Photo: Mike Crisp

Gastrolobium rubrum, one of the peas under study



Photo: Mike Crisp

Tom Semple and Meredith Cosgrove (ANU)



Photo: Mike Crisp

Tom Semple (ANU) takes notes on the edge of Bluff Knoll



Photo: Mike Crisp

Meredith Cosgrove & Alicia Toon

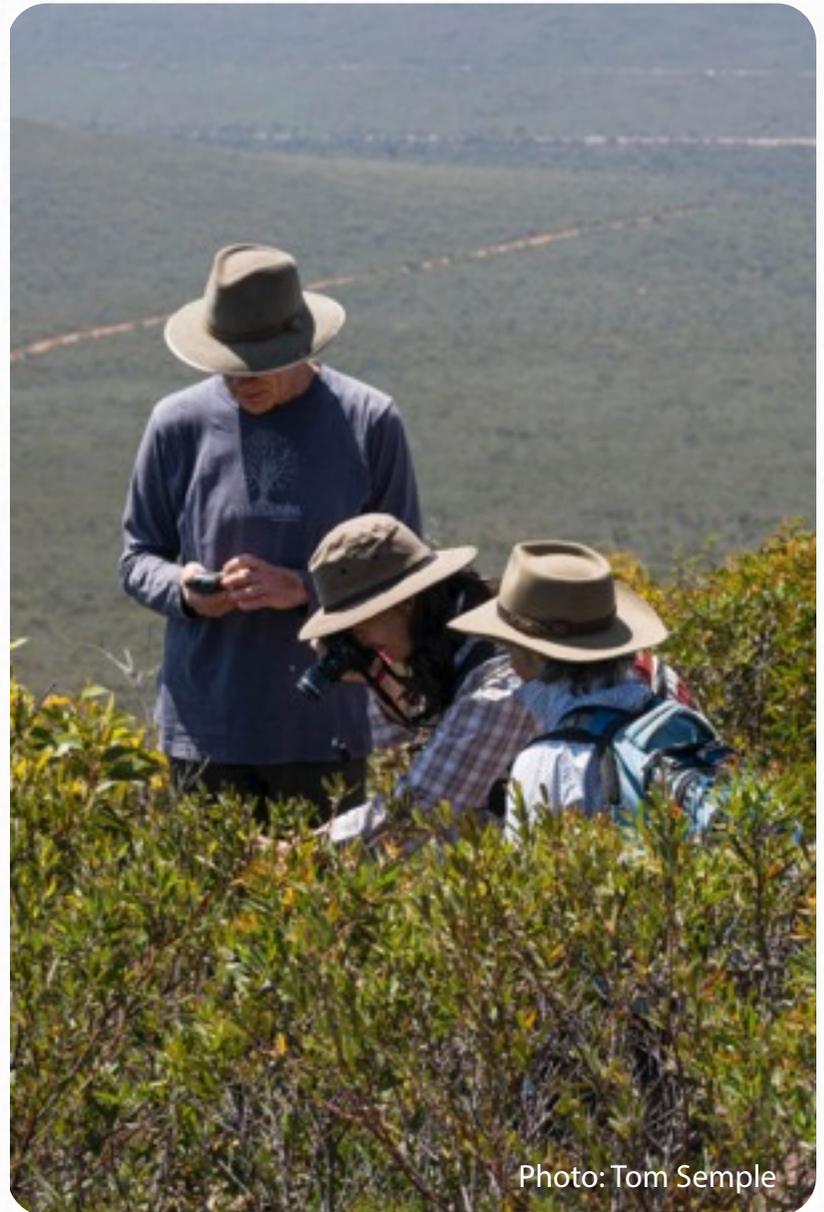


Photo: Tom Semple

Mike Crisp, Alicia Toon & Meredith Cosgrove on Mt Trio

Data awards and distinctions

by Bob Mesibov

Images



[View image details](#)

Date loaded: 2015-06-30

Date last processed: 2015-11-10

Taxonomy

Scientific name	<i>Myall</i> Supplied scientific name "Myall Woodland"
Taxon rank	Genus
Common name	Myall Woodland
Kingdom	ANIMALIA
Phylum	ARTHROPODA
Class	INSECTA
Order	COLEOPTERA
Family	EUCNEMIDAE
Genus	<i>Myall</i>
Taxonomic issues	No issues
Name match metric	Canonical name match The supplied name was parsed into canonical form before a match was found.
Name parse type	wellformed

I am pleased to announce the awarding of:

(1) the **"More Numbers is Better" Spatial Data Award** to the Northern Territory Museum and Art Gallery, for submitting hundreds of records to the Atlas of Living Australia with up to 15-place precision in latitude and longitude, as in these coordinates for an unidentified chrysomelid beetle:

MAGNT I009245

latitude -24.553116666666668

longitude 133.25238333333334

To truly appreciate the wonderful nature of this geo-locating of a collection site, remember that a degree of latitude is about 111 km. That means 0.000000000000001 of a degree of latitude is about 111 picometres, or about the diameter of a single nitrogen atom.

For more on distances and decimal degrees, see the 'Degree precision versus length' table on Wikipedia's 'Decimal degrees' page (https://en.wikipedia.org/wiki/Decimal_degrees), or my article in Banksia issue 10.

(2) the **"I Just Work Here" Spatial Data Award** to the Atlas of Living Australia, for publishing these 15-place lat/longs just as received from MAGNT, e.g.

<http://biocache.ala.org.au/occurrences/942e69ec-ab54-4958-9a14-7b4967beb613>

(3) the **"Funniest Parsing of a Scientific Name Award"** to the Atlas of Living Australia, for assigning an image of the threatened 'Myall Woodland' ecological community in NSW (above) to the eucnemid beetle genus *Myall*:

<http://biocache.ala.org.au/occurrences/6b709005-9565-4d5b-9318-0660df50a70c>

An image of part of the webpage with this record is included above in case ALA gets around to fixing this. I alerted ALA to the error in December 2015. [Editor's note: not fixed as of 20 March 2016]

Bob Mesibov

Honorary Research Associate

Queen Victoria Museum and Art Gallery

Launceston, Tasmania, Australia

Editor's note: It is not always the user who uploads the lat/longs with ridiculous precision. Both Bowerbird and ALA adjust sensible lat/long entries to a ridiculous number of decimal places.

The rules of engagement for PhD candidates

from an aging (but young at heart) PhD student

So, you would like to do a PhD: just the thought of it is an exciting prospect for some of us. The next step is to decide who you would like to supervise you. There is, of course, the question of whether the person you would like to supervise you actually wants to supervise you. Choose wisely: three years is a very long time if you have the misfortune to select a supervisor that you do not get along with. This also applies to supervisors: choose your students carefully.

There is a big difference between how much work a student thinks a supervisor should do, and how much work supervisors think they should do. The reverse also leaves room for different expectations: how much work supervisors think students should do and how much they actually do. A very wise man told me that “my job as a PhD student is to manage my supervisors: it is my PhD so I need to make sure I get what I want out of it”. This is easier said than done but not impossible. I, selected my supervisors (all three of them) for their very different qualities, skills and temperaments. I have been fortunate and had the best of all three of them. This does not mean there have not been some fierce debates and heated discussions at times. These are necessary for you to get the best from your PhD studies.

Here are the rules of engagement for PhD students

1. Regardless of your PhD proposal, supervisors will always want more.
2. They (supervisors) are under the misapprehension that it is their job to annoy the hell out of you as often as possible.
3. It does not matter what you do they will always be able to do it better.
4. No matter how many hours you put in it is never enough.
5. Regardless of the scientific terminology, your use of it will always be wrong.
6. No matter what pictures or figures you produce they will not be aesthetically pleasing to at least one of them; sometimes to all.
7. No matter what you write, your supervisors will put a blow torch to it.
8. Supervisors will not be happy until you finish your PhD.

If you are fortunate enough to have supervisors that abide by these rules then you are indeed very lucky and your supervisor/supervisors are doing their job. If you can live with these rules then proceed with your PhD: it is one of the most rewarding things you can do, especially if you are fortunate enough to be able to study something you are passionate about. PhD studies should involve a mixture of passion for your subject, motivation and persistence: it is easy to get distracted especially when you are on the home run (the last 6 months). Stay focussed. Try to stay passionate about your research, and most of all, stay motivated till the finish line. Then, finally, you will please your supervisors and the rules of engagement no longer apply.

Marg Stimpson

PhD candidate

University of New England



Message from Bush Blitz coordinator



Sunrise, Gibson Desert, WA, 2013

Photo: Lyn Cook

BUSH BLITZ wants to know about your PhD project

I am sure you have heard about Bush Blitz - a national species discovery partnership program between the Australian Government, BHP Sustainable Communities and Earthwatch Australia. The aims of this Program are to promote the science of taxonomy through a variety of avenues such as field collection, follow-up curation, taxonomic grants and educational programs. Bush Blitz focuses on groups of target taxa to enable their collection on a national scale and to build on an existing body of data.

The current target taxa are:

- Vascular plants
- Reptiles and Amphibians
- Arachnids
- Lepidoptera
- Gastropoda
- Heteroptera
- Odonata
- Stygofauna
- Lichens

One of the ways that Bush Blitz contributes to taxonomy is through support of our future taxonomic community such as early career taxonomists. We are currently investigating how data and material collected on Bush Blitz expeditions can provide opportunities for value adding. To this end Bush Blitz is interested in developing a database of existing PhD projects that focus on the revision of both priority taxa and any other groups that may be collected during Bush Blitz expeditions.

Please send the following information about your PhD project to: jo.harding@environment.gov.au:

Name
Institutional address
Email address
Thesis title
Taxonomic group(s) if not evident from your title
Primary supervisor
Start and likely end year (e.g. 2015-2018)

Jo Harding
Bush Blitz Coordinator

What's been trending?

In case you missed it.....

In January this year, the editors of journal of the Willi Hennig Society, *Cladistics* (IF 6.217), published an article laying the ground rules for the philosophy to be expressed in articles submitted to the journal: essentially, parsimony rules. The following are excerpts from that editorial.

“The epistemological paradigm of this journal is parsimony.”
and

“Phylogenetic data sets submitted to this journal should be analysed using parsimony. If alternative methods are also used and there is no difference among the results, the author should defer to the principles of the Society and present the tree obtained by parsimony. Unless there is a pertinent reason to include multiple trees from alternative methods, a tree based on parsimony is sufficient as an intelligible, informative and repeatable hypothesis of relationships, and articles should not be cluttered with multiple, often redundant, trees produced from other methods” (Editorial, 2016, *Cladistics* 32 (1):1, doi: 10.1111/cla.12148)

The ensuing twitter feeds and indignant rebuttals have been dubbed “parsimony-gate”.

An article by WIRED’s Matt Simon sums up much of the twitter feed argument: *Twitter Nerd-Fight Reveals a Long, Bizarre Scientific Feud*, which can be read [here](#).

Dan Graur blogged in early with “Once Upon a Time at a Willi Hennig Society Meeting #ParsimonyGate” [[read it here](#) and check the comments beneath by Mark Siddall and John Huelsenbeck]

My reading of the twittering and online comments is that many respondents have read more into the editorial than appears at face value, or are ignorant of the philosophies underlying the different approaches to phylogenetic estimation: several focus on the age of publication instead of content. This may be a symptom of our times, where acceptance of approaches is largely based on recency, fame and confident projection rather than fundamental understanding of the assumptions of each method. This is understandable, to a degree, given the pressure to publish often and publish high (impact): our scientific reward system is squarely focused on the current and popular.

Editor

Examples from twitter.....

 **Mark Siddall**
@theleechguy
I'm with Fry: "a stalking ground for the sanctimonious offended on behalf of others they do not even know"
[View details](#) · [←](#) [↻](#) [♥](#)

 **Nick Matzke**
@NickJMatzke
Re #ParsimonyGate; I appear Bayesian, but: "Foar Darwinian cladists like @NickJMatzke" - uncommondescent.com/intelligent-de... #IDerrors
[View details](#) · [←](#) [↻](#) [♥](#)

 **Aaron Liston**
@AaronListon
In the dragons' lair! #parsimonygate twitter.com/NickJMatzke
[View details](#) · [←](#) [↻](#) [♥](#)

 **Dimitri Skandalis**
@dskandalis
It's #parsimonygate all over again! twitter.com/Stat
[View details](#) · [←](#) [↻](#) [♥](#)

 **Magnus Rattray**
@MagnusRattray
[@NimwegenLab](#) [@mbeisen](#) [@leonidkruglyak](#) well, I guess if you're allowed to use parsimony then you may be right #ParsimonyGate
[View conversation](#) · [←](#) [↻](#) [♥](#)

 **PLOS**
@PLOS
This week's research reading roundup includes #ParsimonyGate: Flat to Fact & more: plos.io/1Q7n1ht pic.twitter.com/1Q7n1ht
[View photo](#) · [←](#) [↻](#) [♥](#)



 **Stephanie Spielman**
@StephSpiel
Good #ParsimonyGate article, but should have also listed valid scientific reasons "not" to use parsimony. twitter.com/clauswilke/sta...
[View details](#) · [←](#) [↻](#) [♥](#)

Last word from David Hillis.....

 **David Hillis**
@David_Hillis
(Model-based methods vs parsimony) = (parametric vs nonparametric statistics). Both have advantages & uses. Silly argument at #ParsimonyGate
[View details](#) · [←](#) [↻](#) [♥](#) Jan 21

4th NATIONAL POSTGRADUATE TRAINING WORKSHOP IN SYSTEMATICS

The University of Adelaide, 10-15 July 2016

Sponsored by:

Australian Centre for Evolutionary Biology & Biodiversity and

The Environment Institute (The University of Adelaide)

Australasian Systematic Botany Society (ASBS)

Society of Australian Systematic Biologists (SASB)

This workshop will include advanced level training in phylogenetic methods, imaging techniques, DNA barcoding, systematics theory, nomenclature and the taxonomic process, collection management, databases, publishing results, finding a job, and much more.

The workshop is designed for PhD students in the first half of their project, but applications will be accepted from anyone who has had < 3 years of candidature. It is specifically designed for students undertaking projects that have a biological systematics component or are broadly relevant to systematics. There is a maximum of 30 places – available only to students enrolled in Australian and New Zealand Universities.

Registration Fee: approx. \$400

Limited registration fee waivers are available for botany students, courtesy of the Australasian Systematic Botany Society. Fee waiver recipients must be ASBS members - application forms are available at www.asbs.org.au

Expressions of interest (name, year PhD started, Department/School, project title) to:

Professor Andy Austin: andy.austin@adelaide.edu.au



View of Mt Ragged, WA

Photo: Lyn Cook

Stop Press!!!

We have just heard that Dr Mark Harvey of the Western Australian Museum has been elected Vice-President of the International Commission on Zoological Nomenclature (ICZN). The election was conducted by the 27 members of the Commission. He was appointed for a six-year term and will serve with the newly elected President, Dr Thomas Pape, from the Natural History Museum of Denmark. They will tackle some of the major challenges facing the Commission including production of the next edition of the Code, and the enhancement of ZooBank, the Commission's on-line portal for the registration of scientific names (see <http://zoobank.org/>).

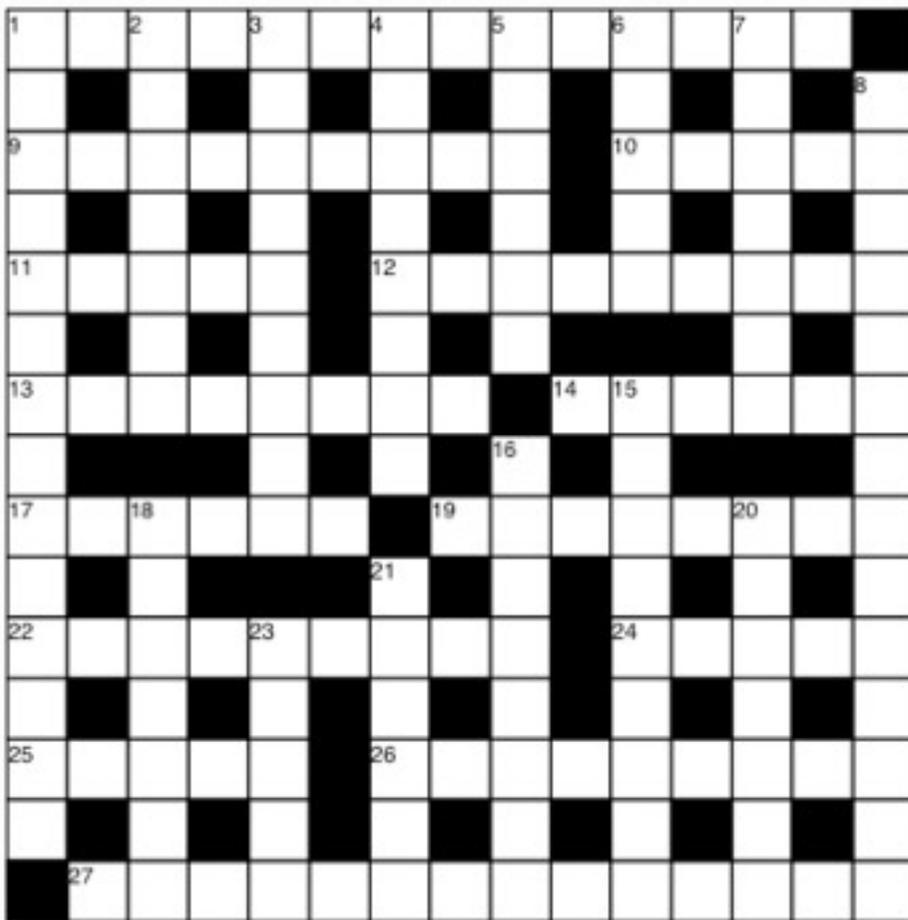
Look out world!



Systematics Crossword 3

By Cecidomyiidae

Solutions in next issue of Banksia



QUICK

ACROSS

1. Butterfly-like.
9. In an old-fashioned manner.
10. Lathe tool rotating a face perpendicularly to the drive shaft.
11. Plant resin.
12. Wastes.
13. Sketches.
14. Species epithet of Australian monitor.
17. Rots.
19. A femtometre (two words).
22. A non-entomologist might refer to a bostrichid larva as one of these (two words).
24. Forearm bones.
25. Boredom.
26. Mexican dish.
27. Family of twin leafs and bean capers

DOWN

1. Minor planet taxonomy.
2. Hospital resident.
3. Ability to spend.
4. Bowl a no-ball.
5. Starch.
6. In Europe and Asia, one of these lycaenid butterflies would be called a green hairstreak, but in the USA it would be called an -----.
7. Uncertain.
8. Entertain using sleight of hand.
15. Vegan Indian condiment.
16. Opposed (to).
18. Persuasiveness.
20. Spread from a central point.
21. ----- Ranganathan, British comedian.
23. Short name for large herbivore.

CRYPTIC

ACROSS

1. Like a butterfly, father leads irrational constant to king and another high card, leaving nothing for you and me (14).
9. In an old-fashioned way, myrmecid intelligence goes to the University of East London for chromosome (9).
10. Used in smoothing 57% of surface project for statistical computing (5).
11. Philippine tree resin made from rapper, printer's measure and halogen (5).
12. Chinese poetry form intrudes into tools such as those in 10 so that it spends profiligately. (9).
13. Sketches exit queues (8).
14. Short tropical monitor species loses direction from shop on the way to Rhode Island (6).
17. Rots on German tropical islands (6).
19. Rank mobility index used after oxygen, neon and iron to produce old femtometer (3,5).
22. Gear bit using rotating helical blade for, say, nematode (5,4).
24. Old irradiation unit before eyes makes bones (5).
25. Rotten nuisance hides tedium (5).
26. Letter followed by another Russian vehicle for tasty food (9).
27. Extraterrestrial leaves fertilised egg, adds methadone and picks the eyes out of the lily family in order to produce the last family in alpha order (14).

DOWN

1. Nomenclature of solar orbiters given by, say, jet to identify it (14).
2. Irishman that is an intuitive thinker for one under medical care. (7).
3. More than 50 pound joins decapitated metropolis for cash position (9).
4. Sets of 6 deliveries, augmented by tellurium and phosphorus for a way to invalidate one of the deliveries (8).
5. Staple carbohydrate including personal possessive and double salt (6).
6. The end is small and typically mischievous (5).
7. Nuclear repacking is subject to uncertainty principle (7).
8. Former Collingwood defender has several fingers entertaining by manipulation (14).
15. To, say, mink, small island first evokes vegan food from India (4, 5).
16. Note with no beginning, 99 and 1 and 50 are unfavourable (8).
18. Carbon, cobalt, germanium, nitrogen and yttrium together have convincing power (7).
20. Branch out to fill a vacant niche (7).
21. Capital sulfur and hydrogen, ----- Kaluwitharana, former Sri Lankan wicketkeeper/batter.
23. Large herbivore sounds like a brand of GPS device (5).



Solution to
Systematics Crossword 2

What were they thinking?



Mike Crisp, Meredith Cosgrove and Alicia Toon taking a lunch break on Mt Trio, Stirling Range National Park, during sampling of poison peas (*Gastrolobium*) for DNA extraction

You know the challenge!

Fill in the thought bubbles of your field-working colleagues and send your entry to the editor (l.cook@uq.edu.au).

Most entertaining entry (as judged by the editor) will be incorporated in the next issue.

About the Society



Eucalyptus rossii & *Banksia spinulosa*

Photo: Mike Crisp

The Society

The Society of Australian Systematic Biologists is open to all people who use the science of biological systematics as a basis for the study and understanding of nature. The Society is a non-profit inter-disciplinary organisation whose purposes are to promote the scientific study of biological systematics and to disseminate scientific and educational information related to its fields of interest.

Membership

Details are available on the society website (<http://www.sasb.org.au/contacts.html>) and from the secretary.

2015-2017 SASB Officers

President: Nerida Wilson

Vice-President: Andy Austin

Secretary: Michael Rix

Treasurer: Simon Tierney

Councillors: Kym Abrams, Shane Ayhong, Lyn Cook, Steve Cooper, Penny Mills, Tom Semple

To circulate information to members or provide articles for the newsletter, please contact:

BANKSIA Newsletter editor: Lyn Cook (l.cook@uq.edu.au)

Minutes: AGM 2015

Minutes of SASB Meeting

Pleiades Room, Esplanade Hotel, Fremantle (7/12/2015)

Meeting opened: 5:00 pm

Attendance list: Kym Abrams, Andy Austin, Michael Braby, Lyn Cook, Steve Cooper, Meredith Cosgrove, Mike Crisp, Gaynor Dolman, Danilo Harms, Mark Harvey, Bill Humphreys, Leo Joseph, Penny Mills, Mike Rix, Tom Semple, Jan Strugnell, Nik Tataric, Simon Tierney, Alicia Toon, Thomas Wallenius, Nerida Wilson

Apologies: Andrew Thornhill, Penny Greenslade, Danielle Stringer, Erinn Fagan-Jeffries, Barbara Langille

Approval of minutes from previous meeting (held 2013): proposed by Penny Mills, seconded by Steve Cooper; accepted unanimously.

Matters arising from the previous meeting: as below.

Report from the President (including notes from the Secretary who could not attend):

Unfortunately the last two years have been disappointing, largely due to a lack of progress on being able to approve and introduce membership fees. The Society needs an income stream to be able to undertake a range of student and other activities, and membership fees and a profit on conferences is the only way to do this. The issue of introducing membership fees has been discussed for the last five years with no expressed opposition, and it is now time to do something about it (see below)

One major positive in the last two years was the funding and award of the Australian Taxonomy Awards (\$5000 from Nature Conservancy) in each of 2014 and 2015, with James Shelley taking out the award in 2014 and Kirilee Chapman in 2015, both from the University of Melbourne. The standard of the applications in both years was extremely high. The Nature Conservancy has agreed to fund another round in 2016.

Finally a huge thank you to the outgoing council, particularly:

- o Andrew Thornhill (Secretary since 2007), who was incredibly proactive in informing members. Andrew is standing down having served in the position for nearly eight years, which has become more difficult with him being based in the US
- o Simon Tierney, Adelaide University (Treasurer for 2 years) who has agreed to continue in the position

- o Rebecca Dew, Flinders University, for assisting the Secretary by scouring the internet for systematics-related content and jobs
- o and Lyn Cook, Queensland University for compiling and editing our newsletter 'Banksia'

Membership details: the Society has attracted 42 new members in 2 years.

Report from the Treasurer – Simon Tierney:

SASB financial statement (12/2013-12/2015) attached. SASB returned \$7,500 (+ conference deposit of \$2,500) from the Systematics Without Borders conference (Sydney, December 2013). A savings account was created (6/05/14) to capitalise on interest: \$325 interest over the intervening two years. Expenditure consisted of domain name rights for the SASB website (\$44) and \$4,500 in security deposits for the 2015 conference in Fremantle WA (conference organiser and hotel). No student bursaries over the intervening period are reflected in this budget.

There was a net profit for the Society of \$5,700, from November 2013, and the current budget stands at \$11,200 as of 30 November 2015.

In May of 2014, investigations were undertaken into transitioning to an incorporated body. However, the Australian Business Register requires the administration of Change of Registration Details to occur before such enquiries can take place. Because it is unknown who created the original ABN for SASB progress has stalled.

Acceptance of Council Reports: proposed by Mike Rix, seconded by Nerida Wilson; accepted unanimously.

Report from the (new) Webmaster – Kym Abrams:

Bob Mesibov will no longer continue to maintain the website, and is handing over to Kym. Kym suggested a Facebook focus in future.

Report from the Newsletter Editor – Lyn Cook:

'Banksia' will be issued twice yearly, however there has been a lack of recent material. All of those attending were encouraged to supply content, with Danielle Stringer (Adelaide University) agreeing to write a report on the Career Development Workshop, and Tom Semple a report on the 2015 conference.

Nomination and election of Council Members:

Nerida Wilson, proposed by Andy Austin, seconded by Jan Strugnell;

Andy Austin, proposed by Nerida Wilson, seconded by Lisa Kirken-
dale;

Mike Rix, proposed by Mark Harvey, seconded by Penny Mills;

Simon Tierney, proposed by Andy Austin, seconded by Kym
Abrams;

All carried unanimously.

Kym Abrams and Tom Semple also elected as new Councillors;
carried unanimously.

The new Council is therefore as follows:

President: Nerida Wilson;

Vice-President: Andy Austin;

Secretary: Mike Rix;

Treasurer: Simon Tierney;

Councillors: Shane Ahyong (Sydney; not present at AGM);

Lyn Cook (Brisbane);

Steve Cooper (Adelaide);

Bob Mesibov (Launceston; not present at AGM);

Kym Abrams (Webmaster, Perth);

Penny Mills (Ph.D. student Councillor, Brisbane);

Tom Semple (Ph.D. student Councillor, Canberra);

Stepping down: Andrew Thornhill;

Andrew Mitchell.

Any other business:

Membership Fees: Andy provided the rationale for introducing membership fees, not least because the Society is not on a sound financial footing (and is very limited in what it can 'achieve' beyond a conference). Penny Mills asked whether the Society needs to be incorporated first; this is a separate issue and does not affect whether we introduce fees. Nerida asked how many members the Society actually has; ~160 by the best estimate (Andrew T. was not present to clarify). Mike Crisp raised the issue of whether anyone actually had objections to introducing fees in the first instance; there were none. The fee structure was then discussed, and Jan suggested that we should have student fees as an incentive for grant eligibility. Lisa suggested that an annual fee should not be more than \$100, and Steve raised the potential for a two-year membership. Mike Crisp noted that the ASBS has a membership officer specifically and that it is \$50 for a full member. Lisa and Andy also mentioned life memberships and the potential for buying life memberships, and the concept of a Society award system. It was decided that there should be at least six months grace upon the introduction of a fee system, and a \$50 (full members) and \$25 (student members) structure was

mooted, but this was to be discussed and a final decision made by the Executive.

National Postgraduate Training Workshop: Andy suggested that the National Postgraduate Training Workshop was something the Society could support, but noted that this was something for the new council to decide given his conflict of interest as the organiser. Registration for the upcoming workshop will be \$400, so there is the potential for supporting student attendance. ABRs will no longer be sponsoring the workshops in future.

Arrangements for the next meeting: likely to be held in Adelaide at the University of Adelaide in December 2017, the organising committee to be chaired by Andy Austin.

Mike Crisp closed by noting that Andy Austin co-founded the Society, and that he was stepping down after his second stint as President, and thanked him on behalf of the Society for all of the excellent work that he has done. This was carried unanimously!

Meeting closed: 6:00 pm.