Newsletter

Australasian Systematic Botany Society

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Australasian Systematic Botany Society (ASBS)

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In this issue

From the President

Mike Bayly ASBS President

As I sit to write this, my first thought is "how did it get to be September already?" Perhaps this is because I have been on long service leave for the last three months, languorously travelling in central and Western Australia? But, the daydream is over and I am now back to the reality of work and teaching, most of which is back on campus for a change.

Despite my wanderings, our Council has continued to meet regularly to keep the wheels of the society turning. Those meetings have been invigorated, as has our newsletter, by the regular participation of members of the Student and Early Career Researcher (SECR) Subcommittee, who have been active in sharing their ideas and in engaging with the younger members of our society. A major output of these discussions is the upcoming SECR focussed meeting in Sydney in November. It has been fantastic to see the enthusiasm with which the SECR Subcommittee has organised this event. There has already been a strong response by the SECR community, and we hope it will be a great meeting for those who can attend in person or online.

We have timed the 2022 AGM (17 November) to coincide with the SECR meeting. You should already have received details of these meetings via email from the Secretary, Heidi Meudt. Details of video links for online attendance will be provided closer to the time.

We have started preliminary planning for a conference to be held in Melbourne in the week of September 25-29, 2023. Being our 50th Anniversary year, we hope this will be a sizeable event and a great opportunity, after the last few years of travel restrictions, for many members to get together in person. We will also plan to livestream sessions to make the meeting more broadly accessible, especially for those who can't travel or would prefer not to. More details will be provided toward the end of this year, but for now you might want to have the dates on your radar.

For the first time since 2012, the ASBS Council has conferred a new ASBS Life Membership (see announcement on next page). A summary of the provisions for Life Membership and its history in the society is provided by John Clarkson in a separate article in this issue of the *ASBS Newsletter*. We feel these provisions could be better used to recognise those that have made great contributions to the ASBS. We are making start here, with the intention that the ranks of worthy recipients will grow in the near future.

I was saddened, as I'm sure many members were, to hear of the recent death of Nathalie Nagalingum. She was dearly loved by friends and colleagues and will be sadly missed. For those looking for a way to commemorate Nathalie, the American Fern Society has started fundraising for a student award in her honour (https://gofund.me/b64850a2). This was started as a GoFundMe campaign that raised over $36,000. That campaign has now closed, but donations can still be sent to the American Fern Society Treasurer, Eric Schuettpelz (SchuettpelzE@si.edu).

New Life Member of ASBS: Barbara Briggs

Mike Bayly ASBS President

Left Barbara at the unveiling of a plaque at ANBG commemorating Hansjörg and Marlies Eichler in 2015. Photo: John Clarkson

ASBS Council is pleased to announce that Barbara Briggs has been awarded Life Membership of ASBS in recognition of her history of service to the society. Barbara has been an active member of the society since its inception in 1973. She served two terms as President (1986-88 and 1988–89) and two terms as Vice President (1983–85 and 1985–86), and was a valued member of the Hansjörg Eichler Research Committee (2004–2009). Apart from these leadership roles Barbara has been a stalwart of society conferences and a valued member of our community, generously sharing time and knowledge, encouraging and engaging society members new and old.

Barbara is well-known to most ASBS members and her outstanding contribution to systematic botany was recognised by the award of a Burbidge Medal at the Brisbane conference in 2005 (see *ASBS Newsletter* 122: 5–6 for the announcement and justification of that award).

We plan to present Barbara with a certificate of life membership at the upcoming AGM in November. She joins three other living Life Members (Robyn Barker, John Clarkson and Bill Barker). A history of Life Membership in the ASBS is provided in a separate article by John Clarkson in this issue of the *ASBS Newsletter*.

In the beginning...

It's an honour: the history of Life Membership

John Clarkson ASBS Treasurer

Introduction

In 1986, while the Society undertook a review of its Constitution and Rules to allow it to become incorporated under the ACT *Associations Incorporation Act 1953*, the constitution committee took the opportunity to consider other changes that might make the Constitution clearer or otherwise more satisfactory (Henderson 1986). Amongst the changes was a provision for recognising "venerated members or persons rendering or who may have rendered assistance" to the Society. The wording proposed in draft changes published in the March 1986 Newsletter read:

Honorary membership is available for distinguished botanists who have excelled in plant systematics.

1. Any member can nominate a distinguished botanist for Honorary membership.

2. Council shall determine recipients of Honorary membership.

3. Recipients of Honorary members shall not exceed 5 at any one time.

Comments from members led to the removal of this proposal from subsequent drafts (Henderson 1986) and it was not part of the postal ballot held later that year. At the 1986 Annual General Meeting held in Brisbane, Laurie Haegi spoke to an alternative proposal (Haegi 1986). This was to be circulated to members via the Newsletter, but it appears it never was (Barker 2003).

It was 1997 before the matter was addressed again. That year, Council considered ways the Society could recognise not only those who had excelled in plant systematics but also, as was the original intention, members who had made a significant contribution to the business of the Society. The proposal, that was withdrawn in 1986, had focused only on scientific excellence and overlooked service to the Society. At the Annual General Meeting held in Adelaide in October 1997, Tim Entwisle announced Council's decision to introduce life membership, a new class of membership, to recognise members who have made an "outstanding contribution to the Society" (Entwisle 1997). At the same time, Tim announced the establishment of the Nancy T. Burbidge Medal "to honour an ASBS member [sic] who makes a long-standing and significant contribution to Australian systematic botany". For more on this, see a history of the Nancy Burbidge memorials published in 2017 (Clarkson 2017).

As life membership involved the creation of a new class of membership, it was necessary to incorporate this into the Society's Rules. A new rule to establish life membership was included in proposed changes to the Rules put to the members in a postal ballot in March 1998 (Anon 1998a). The term 'Honorary' and the ceiling on numbers were deliberately proposed to draw attention to the fact that Life membership is an honour conferred by the Society and not something which can be bought by payment of several years advance subscriptions as happens in some societies. The rule was approved almost unanimously. There was one vote against life members having the same rights and privileges as regular members (Anon 1998b).

Rules Governing Life Membership

Provision for life membership has been included in the Rules since version 4 which took effect in May 1998. But for the addition of a sub-clause noting that life members have the rights and privileges of a financial member

in Version 5 released in 2003, the Rules have remained unchanged since. Life membership is governed by clause 2(7)(a)–(c) of the Society's current Rules (Web ref. 1). This states:

(a) Life membership may be conferred by Council on any member who has, in the opinion of the Council, made a significant contribution to the Society; provided that –

i. the number of living life members shall not at any time exceed ten (10); and

ii. such membership will not be con ferred on more than two (2) persons in any one year.

(b) Life members shall be exempt from the payment of annual fees.

(c) Life members will have the rights and privileges of a financial member.

Procedure for nominating members for Life Membership

The criteria for life membership have been published from time to time in the Newsletter (e.g. Clarkson 2006a). They are summarised here.

- Nominations for life membership can be made at any time.
- Nominees must be proposed by one and seconded by another financial member of the Society.
- Nominations shall include a brief statement outlining the contribution made by the nominee to the Society.
- There is no nomination form. Nominations must be submitted in writing to the secretary. These should be marked private and confidential. E-mail is acceptable.

Council procedures for vetting nominations

When a nomination is received, the secretary circulates it to members of Council who are encouraged to enter into a free and open debate on the merits of the nominee. Council may make a decision at any time although, if necessary, the final decision can be held over to the next council meeting to allow a secret ballot to be held. Although consensus is desirable, a nomination can succeed if 5 of the 6 councillors vote in favour. Once the decision to award life membership is made, the president will contact the successful nominee to check that the award will be accepted and, if so, the decision will be announced in the next newsletter to appear. Life members are presented with a framed certificate. Where possible the presentation of the certificate is arranged to coincide with a reasonable gathering of Society members preferably an Annual General Meeting or an annual conference.

The Life Members

Since 1998, life membership has been conferred on five members.

The first person so honoured was Marlies Eichler (Fig. 1). The award was announced by the president, Tim Entwisle, at the 16th Annual General Meeting held in Sydney on 1st October 1998 (Entwisle 1998). The award was primarily in recognition of her extremely generous support of the Society's Research Fund. Also noted in the nomination (Anon 1998c) was the largely unrecognised support she provided for the taxonomic work of her husband Hansjörg. Her contribution to the Society's Research Fund and the benefits to students that continue to flow from her extraordinary generosity were summarised in a recent Newsletter (Clarkson 2022). Marlies passed away on the 1st of January 2011.

The second life member, David Symon (Fig. 2), was honoured in 2000 for his substantial and continuing contribution to the Society at both chapter and national level. David's nomination was announced at the AGM held in Sydney on the 9th June (Barker 2000a). David participated in the inaugural meeting of the Society held in Melbourne in April 1973 and, on return to Adelaide, hosted a meeting at his home to discuss the formation of a South

Australian Chapter. Several reports have appeared in the *ASBS Newsletter* highlighting his career including his contribution to the Society (Barker 1997, 2000b, 2012). In a history of the Society's Newsletter published in 1991 the editor, David Morrison (Morrison 1991), suggested that, based on contributions to the Newsletter, David was "far and away the most active supporter of the Society who has never held an official post". David died on the 18th December 2011.

The next member to be honoured was another South Australian, Robyn Barker (Fig. 3). Robyn's award was announced in March 2006 (Clarkson 2006b). She was presented with her certificate at the annual conference held in Cairns in November that year (Dixon 2006). Robyn was a foundation member of the Society and of the South Australia Chapter. At the time of the announcement, Robyn had served six terms on Council, one as a councillor (1995/96) and five as secretary (1996/97–2000/01). She had also served as member of the Research Committee from June 1997 to July 2003. Robyn took on the editorship of the Newsletter with husband Bill in June 2001 (no. 108) and together they had produced 19 issues when the award was announced. Another nine issues were produced before they stepped down in September 2008. They returned as editors in March 2013 (no. 155) and produced another 25 issues. That is 28% of the Newsletters produced to date. Robyn has been involved in organising two ASBS conferences in Adelaide and was one of the driving forces behind the very successful celebration of the Robert Brown bicentenary in 2001/02 (see *Marking the Robert Brown bicentenary* in *ASBS Newsletter* no. 110 to 114).

The Society's fourth life member was announced at the dinner associated with the annual conference held in Lincoln New Zealand in November 2010 (Weston 2010). This was a fitting place for the announcement given the recipient, John Clarkson (Fig. 4), had, during his presidency (Clarkson 2007), facilitated the discussions with New Zealand botanists on strengthening botanical ties across the Tasman that led to members voting for the Society to become Australasian the following year during Peter Weston's second term as president (Weston 2011a). The certificate was presented at an informal meeting of the Society held in Mueller Hall at the National Herbarium of Victoria on the 25th November 2011 (Weston 2011b). John joined the Society in January 1974 when the Brisbane Chapter was formed. When nominated for life membership, he had served two maximum six-year terms as a member of Council – three years as a councillor from 1993/94–1995/96 followed by three years as treasurer from 1996/97–1998/99. After a break of three years, he returned to serve three years as Vice President (2002/03–2004/05) followed by three years as president (2005/06–2007/08). John was a member of the Research Committee from June 1997 to July 2003 and chaired the Committee during his term as Vice President. He was a member of the organising committees for the annual conferences held in Kuranda in 1994 and Cairns in 2006, chairing the former. He too was actively involved in organising the celebration of the Robert Brown bicentenary in 2001/02. Since 2010,

Figure 1 Marlies Eichler. Photo: Alex George.

Figure 2 David Symon. Photo: Bill Barker.

Figure 3 Robyn Barker. Photo: Bill Barker.

Figure 4 John Clarkson. Photo: John Clarkson.

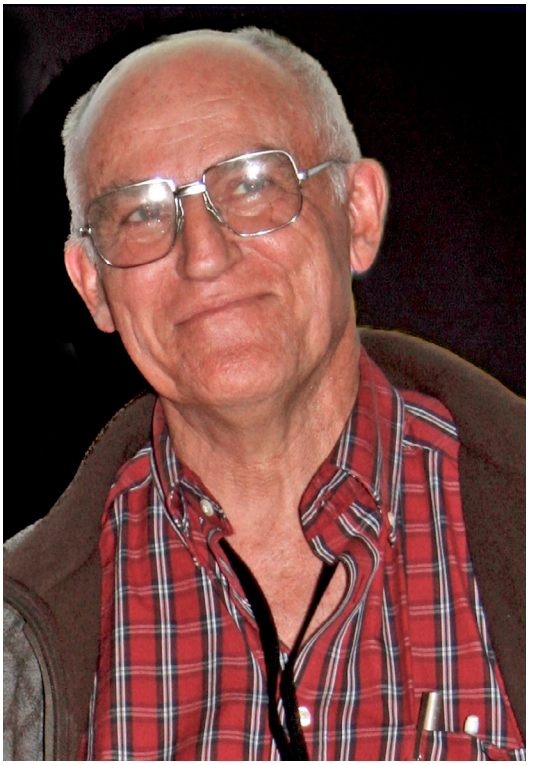

Figure 5 Bill Barker. Photo: Russell Barrett.

John has served two more terms on Council – two years as secretary (2011/12 – 2012/13) followed by four years as treasurer (2013/14 – 2016/17) then, after a break of one year, he is currently in his eleventh term as treasurer (2018/19 –). He has remained active in other roles such as book review editor since January 2011 and as a member of the organising committee for the Society's first virtual conference in 2021.

At its meeting held in association with the annual conference in Perth in September 2012, Council unanimously decided to confer life membership on William (Bill) Barker (Anon 2012) (Fig.5). The certificate was presented to Bill by the president, Peter Weston, at the Annual General Meeting of the Society held at the University Club of Western Australia (Weston 2012). Bill is one of the Society's founding members and a stalwart of the South Australian Chapter. He had chaired or been a member of the organising committee for four conferences hosted on behalf of the Society by the South Australian Chapter, including the first thematic symposium outside of ANZAAS in 1981 and the first joint conference with the Society of Australian Systematic Biologists (SASB) in 1997. He served three terms as vice-president (1999/2000 – 2001/02), was a member of the Hansjörg Eichler Research Committee from August 2009 to November 2012, and chaired the committee between 2000 and 2002 during his term as vice-president. In partnership with his wife Robyn, he had produced 28 issues of the Society's Newsletter between 2001 and 2008. In 2002, together with Barry Conn, Bill undertook a detailed and extensive review of the Society's Rules ensuring these were fully compliant with the rules governing societies incorporated in the Australian Capital Territory. He then went on to produce a history of the development of the Society's Rules since they were first drawn up in 1973 (Barker 2003). As has been common to all life members, Bill continues to actively support the Society after receiving the award serving three years as president from 2012/13 – 2014/15 during which time he proposed the establishment of the grants policy and financial advisory standing committees. He also teamed with Robyn to produce another 25 issues of the Newsletter between 2013 and 2019, and helped host another joint conference with SASB in Adelaide in 2017.

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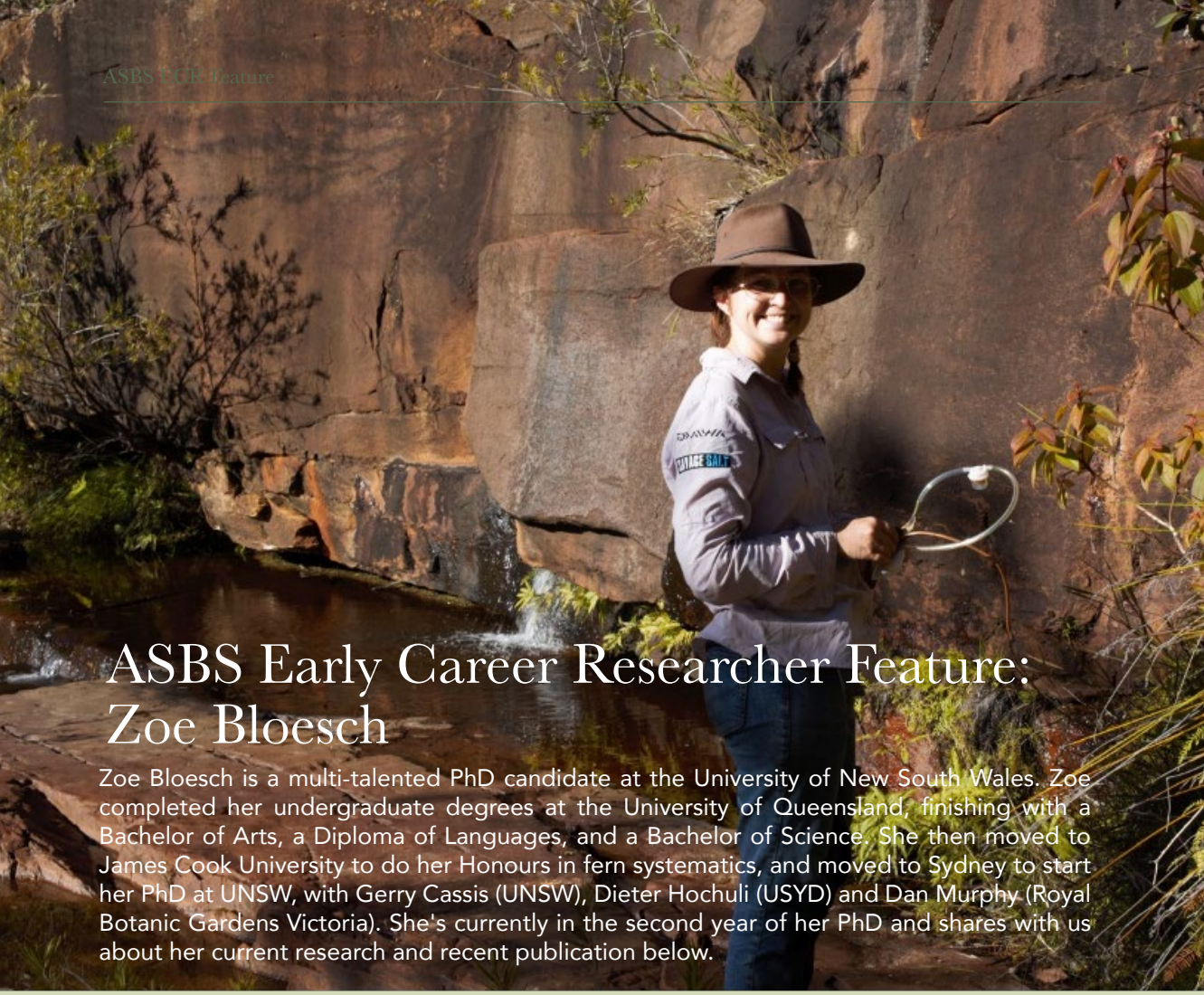


ASBS Early Career Researcher Feature: Zoe Bloesch

Zoe Bloesch is a multi-talented PhD candidate at the University of New South Wales. Zoe completed her undergraduate degrees at the University of Queensland, finishing with a Bachelor of Arts, a Diploma of Languages, and a Bachelor of Science. She then moved to James Cook University to do her Honours in fern systematics, and moved to Sydney to start her PhD at UNSW, with Gerry Cassis (UNSW), Dieter Hochuli (USYD) and Dan Murphy (Royal Botanic Gardens Victoria). She's currently in the second year of her PhD and shares with us about her current research and recent publication below.

What gets you excited in taxonomic and systematic research?

My main interest at the moment is insect-plant co-evolution, and particularly the evolution of interactions between sticky plants and Hemipteran insects. I'm also interested in microevolution and comparative phylogeography of symbiotic species, for example how insects move on hairy or sticky plants, and whether carnivorous plants and their symbiotic infauna are or are not co-speciated.

What is your current study group?

Right now I'm working on the interaction between *Drosera* (carnivorous sundews) and carnivorous true bugs in the genus *Setocoris*. They are really cool because the bugs live as kleptoparasites on the plant, stealing the invertebrate prey caught by the plant. We don't know much (yet) about the effect this kleptoparasitism has on the plant, or whether the plant and bug have co-speciated. Carnivory is obviously the most fascinating interaction carnivorous plants have with insects, but they also suffer from kleptoparasites, herbivores and have pollinators that they need to avoid killing. For the most part, we don't know which insects fulfil these roles.

Paper in focus

Bloesch, Z., Nauheimer, L., Almeida, T.E., Crayn, D. and Field, A.R. (2022). HybPhaser identifies hybrid evolution in Australian Thelypteridaceae. *Molecular Phylogenetics and Evolution*, p.107526.

This paper presents the results from my

A *Setocoris limatus* bug standing on *Drosera binata* in Dharawal country, Royal National Park, NSW. The bug is able to walk on the plant without getting trapped by its sticky glandular hairs. It waits for invertebrate prey to become stuck on the plant, then sucks their guts out. Photo: Z. Bloesch.

Honours research project. I was working with Darren Crayn and Ashley Field on a couple of populations of ferns that appeared to be hybrids. For example, one group, "Russell River fern", have the pinna size of the genus *Pronephrium* and the lobed pinna margins of the genus *Christella*. We wanted to see whether we could determine whether these were really hybrids using phylogenetic methods, especially since they might have come from a hybridisation between two different genera. We also wanted to know whether they might be in the process of speciating, or whether they might be a vehicle for introgression between two species/genera.

We had samples from past visits to the site, as well as for 20 species of Queensland Thelypteridaceae. I made DNA extractions of the samples and we sent them to RAPiD Genomics (Florida, USA) for sequencing, using a targeted capture sequence bait set designed for ferns. We used a novel phylogenetic pipeline, HybPhaser, that was introduced recently by Lars Nauheimer, to generate phylogenetic trees of these new populations and known species of their putative family, Thelypteridaceae, and to identify hybrid samples. With this software we were able to split each putative hybrid sample into two samples that theoretically represented the divergent alleles in the hybrid. Then in the phylogenetic tree we generated, each "allele set" was in a different place, theoretically placed with the parent species of the hybrid.

We were only looking at two putative hybrids in the beginning, but the HybPhaser output showed that there were six putative hybrid samples in our data set. Species of the *Christella* genus were much less diverged than we expected in our analysis, suggesting that something is going on there. In addition, HybPhaser output told us that when we separated the divergent alleles in a hybrid sample by matching DNA fragments to possible parent sequences (phasing), they phased in interesting proportions. We expected 1:1 proportions if they were F1 hybrids, but for some we got e.g. 1:2 and 3:2 – this might mean a later generation or backcrossing is going on, but it was unclear for our samples.

The obvious challenge was that I undertook this study in 2020 and we all know what happened then. Luckily the problems like no fieldwork, overseas labs closing and not

In the lab at James Cook University in 2020, doing DNA extractions of Thelypteridaceae ferns.

being allowed at university were worked around and I got my thesis in on time.

The most interesting result in this paper is the evidence that the putative hybrid "Russell River fern" is in fact a hybrid between two genera, *Abacopteris* and *Christella*, as hypothesised. This is the first case of an inter-generic hybrid fern in Australia. The second putative hybrid "Tully River fern" is a hybrid between two species in the *Christella* clade, but since this clade wasn't clearly resolved in the phylogeny, it's hard to say which species are the parents. The third main result we found was that there appears to be more hybridisation in the *Christella* clade than previously thought, and *Christella dentata* in particular is better described as a species complex than as a discrete species. Hybridisation does occur more readily in ferns than angiosperms, and the HybPhaser pipeline makes it much easier to detect.

What is the next step in this research?

The Russell River fern appears to be persistent and is reproducing vegetatively, although in a very restricted area. Since it may be on the path to speciation and may benefit from having some status in conservation legislation, it will be formally described as a nothogenus (paper in preparation).

It would be also be very interesting if someone used the HybPhaser tool to analyse known F1, F2, etc. hybrids and known results of backcrosses, to elucidate what complicated phasing proportions means.

Have you seen bugs on *Droseras*?

As part of my current research, I'm compiling natural history notes of interactions between several East Coast *Drosera* species (*D. auriculata, D. gunniana, D. hookeri, D. lunata, D. peltata,* and *D. binata*) and kleptoparasites, herbivores and/or pollinators. If anyone has observed something interesting going on and has photos, I would love to see them!

Follow Zoe and find out more about her research here:

Twitter: @zbloesch

A beautiful field of *Drosera serpens*, *D. indica* and several *Utricularia* species at "Sundew Spring" in Willinggin country, East Kimberly. Photo: Z. Bloesch.

Kirsten Cowley retires from CANB

Anna Monro & Brendan Lepschi

Kirsten Cowley (left) and Laurie Adams (right) sorting and checking specimens, Australian National Herbarium, 1987 or 1988. Photographer: probably Colin Totterdell, CSIRO.

Kirsten Cowley retired from her role as a Research Assistant at the Australian National Herbarium (CANB) on 31 March 2022. Kirsten started at the Herbarium in 1986 as a Research Assistant to Bryan Barlow, later taking on a variety of roles and contributing to a wide range of projects during her 36-year tenure. These included:

- Revisionary studies of *Melaleuca s.s* with Bryan Barlow and Lyn Craven
- Character coding for LUCID identification key to the *Cassinia* group (Asteraceae) with Alexander Schmidt-Lebuhn
- Finalising manuscripts on New Guinea *Syzygium*, following Lyn Craven's death in 2014, with Kipiro Damas (LAE)
- Revisionary studies of *Colobanthus* (Caryophyllaceae) with Judy West
- Co-authoring two editions of *Plant Systematics Research in Australasia* with Chris Puttock
- Co-authoring *The CSIRO Handbook of Australian Weeds* (1997) with Mike Lazarides and Pennie Hohnen
- Compiling *Resources of Australian Herbaria* (1999) with Judy West and updating online version for many years after publication

- Curation of a wide range of taxonomic groups, especially pteridophytes, Moraceae, *Acacia*, and Malvaceae *s.l.*

- Participating in large-scale rearrangements and other physical curation tasks to apply taxonomic revisions to the collections (particularly in Myrtaceae and Sapotaceae)

- Working as Loans and Exchange officer for a period in 1987

- Compiling scientific program and other behind the scenes work for 2011 International Botanical Congress in Melbourne

- Extensive fieldwork as part of the Norfolk Island Quarantine Survey with Brendan Lepschi during 2014 and co-authoring report on vascular plants

- Entering vast amounts of bibliographic, nomenclatural and taxonomic data into the *Australian Plant Name Index* and *Australian Plant Census* to ensure currency and accuracy

- Participating in painstaking testing of the developing *National Species List* infrastructure, forming a valuable collaboration with the Integrated Biodiversity Information System team

- Serving as Librarian for the Herbarium and liaison with CSIRO's Black Mountain Library

- Providing a regular "research round-up" to the Australian Network for Plant Conservation for publication in Australasian Plant Conservation bulletin

- Serving as ASBS Public Officer 2003–2009

- Serving on ASBS Council: Councillor 2005–2006, Secretary 2006–2009

Kirsten was a true "quiet achiever" at CANB — someone who always managed to get astounding amounts of work done in very short order, and her colleagues were often awed by her high level of personal organisation and attention to detail. Coupled with a perpetual willingness to assist with just about anything asked of her, she was a highly-valued member of the herbarium team. We will all miss Kirsten but fully respect her decision to disappear into the sunset to find adventures in the world beyond plant specimens and names.

The botanical life of a plant punk

Phil Novis Allan Herbarium, Lincoln NZ

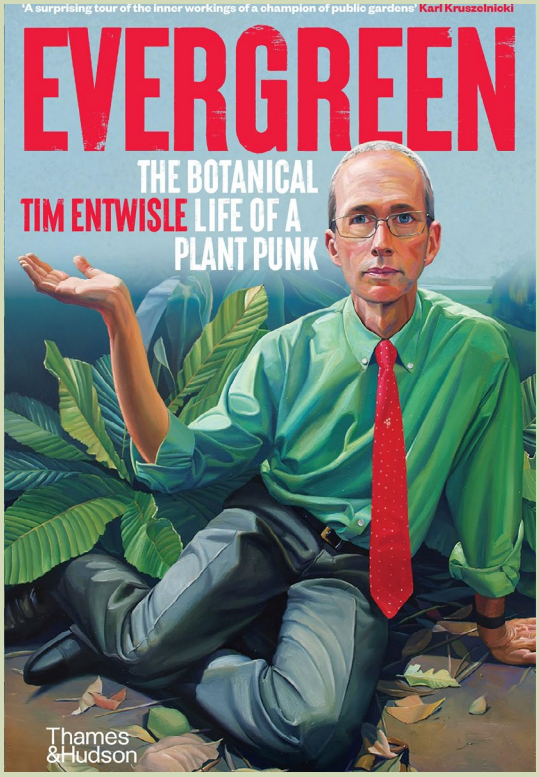
Evergreen: The Botanical Life of a Plant Punk

Tim Entwisle

ISBN 9781760762254 (paperback), 153 x 233 mm

Thames & Hudson Australia, 2022, pp.360

RRP AU$39.99



Who knew? It turned out there was an empty niche in Australian public life, something like "famous botanist/botanic gardener, with seasoning of algae". Tim Entwisle evolved to fill it, and his latest book documents the process.

It is difficult for me, from across the Tasman, to accurately appreciate Tim's status as a household name in Australia. But if he is less well known outside botanical circles, he has certainly rubbed shoulders with the upper echelons, relating his experiences with such luminaries as Barry Humphries, Nick Cave, Paul Keating (apparently as prone to lecturing as any university academic), and David Attenborough. His proximity to the top tier creates an intriguing prospect for an autobiographical work. I can imagine Tim asking himself: how interesting am I to the layperson? How closely can I flirt with the mundane without jumping into bed with it? To paraphrase from the book itself, when should I take up the "opportunity to say nothing"?

Tim sidesteps much of this dilemma by focusing on the plants: the book is subtitled as his "botanical life". To be sure, forays outside his professional career are commonplace in the book, but the deeply personal is seldom exploited for material, and the plants are rarely far away. When he does explore his background there is no self-pity. It is easy to sympathise with the fate of a ten-year-old suddenly finding himself the middle of seven siblings as the result of blended families, but this, like most potential adversity, receives a positive spin, and the author quickly moves on. The early loss of his biological father clearly affected him, but he prefers to emphasise his appreciation for his "second Dad" over dwelling on his bereavement. And although Tim's wife Lynda features repeatedly, their relationship is kept largely off-limits. It would be fascinating to know Lynda's perspective on following her famous husband's botanical antics around the globe. However, you will close the book still wondering what she thinks.

From somewhere, though, Tim developed a steely resilience. The young Entwisle seems to have readily formed insights about himself, such as an unabashed acceptance that nature need not be appreciated via trials by wilderness. There were early signs of a restless intellect, self-confidence and introspection that founded his later successes.

However, this is no autohagiography – for instance, the failure of his student idealism to translate into meaningful action is given fair treatment, and he objectively critiques his letters to authority at the time. Tim was eminently distractable – in his words, "like a dog diverted by a squirrel or rabbit". Perhaps this explains his subsequent failure as a copy editor. During his hippie phase Tim adopted the standard unshorn countenance, and I mentally swapped the roles of student and supervisor in his fuzzy photo with Gerry Kraft before I read the caption.

Collaborating with Gerry sparked Tim's interest in algae. There cannot be many books that describe finding and naming algae as "God's work", nor are there many self-identifying phycologists who possess a claim to popular fame on any level. Yet this brings up a second dilemma for the author, one shared with any work of popular science (or if you like, "popular botanic gardens"): how technical to make the topic. Stephen Hawking famously included a single equation in A Brief History of Time, having been warned that each extra formula would halve his readership. This problem is particularly acute when one's chosen subject is algae, about which the layperson has little idea. And this is not the only subject in which Tim needed to exercise careful judgement, given his other interests (or "obsessions", as he very frequently calls them) in philosophy and culture.

On the whole, the book manages to maintain a relatable style, despite provocation from this potentially dense material. But it is not a completely clean slate. There are rare outbreaks of technicality; the origin of chloroplasts, something that easily confuses the layperson, is mentioned in passing with minimal explanation, and Latin names always follow the common names of plants, which is more understandable. Occasionally an unintentionally elitist tone surfaces, for example "I got obsessed for a while with Jean-Paul Sartre, as I expect everyone does at some stage" – when was your Sartre period? – and the highest-flown language can sometimes be found mugging an innocent sentence ("prospicient", anyone?). But this is very far from the rule. The book flows nicely and should be enjoyable for a wide readership.

If you, like me, are interested in the author's first-hand perspective on the "Moreton Bay Massacre", you won't be disappointed; indeed, you may do as I did and skip straight to this section, to return later to page 1. This political whirlwind, stirred up by the removal of aging fig trees from a Sydney domain, was Tim Entwisle's first major test as a leader. The metaphorical forces of darkness in triumvirate form - the newly minted mayor, the richest man in Australia, and Alan Jones – seem to have scented easy blood and conquest of political capital. Unfortunately for those aspirations, the fledgling Director was about to soar. A legal fragging and an enforced reversal of position completed the humiliation of the story's antagonists. There is certainly no dalliance with the mundane in this section, which is a cracking read. You may find it otherwise if you don't share Tim's position, in which case you will appreciate the facing illustration: a protest sign asserting "Dr Tim Entwhistle [sic] is a murderer".

This chapter of the book, an "interlude" simply named "Ficus", is the centrepiece. It is referred to repeatedly before and after and seems to have been the major formative event in Tim's administrative life. You might wonder what, after this trial by fire, would motivate someone to pursue this line of work, but the answer is disarmingly simple: he wanted to be the boss. Many of us might harbour such aspirations but be reluctant to admit to them; not Tim, whose ambitions were of the refreshingly naked variety. He was quite open to admitting to his superiors that he wanted their jobs (I think, once, even during a job interview for a lesser position). More than that, as he freely admits, he wanted to be famous, and he courted the media to that end, as well as from a desire to educate the public about plants. At some point this must have affirmed his decision to follow the management route rather than pursuing a research role. He claims, as above, to have been "too easily diverted" for the latter, quite a glib assessment

for my taste. Research is very hard to do well, with ever-diminishing returns, and the financial incentives are lower. On the other side of the coin, science seems to employ a veritable army of management these days, but a truly good leader is golden, and these seem thinner on the ground. I like to think that Tim wanted not only to be a leader, but to be a good one.

On his appointment at RBG Sydney, journalist John Huxley wrote: "[Entwisle has] a keen sense of humour, boyish enthusiasm, scientific flair, solid research achievements, and, he believes, the necessary administrative ability". Self-belief is one of Tim's strengths but, compared to the fig tree saga, it is harder to evaluate his abilities as a day-to-day manager. Some staff interactions described in the book suggest he may not have been universally popular at Sydney, and some management boilerplate ("it wasn't enough to simply do good science") gave me pause. On the other hand, he understands that a good science team has a diverse skill set, and specifically notes that not all members need to excel at public outreach – a significant concession coming from a talented communicator, pointing to a coherent vision of "diversity" that implies more than lip service.

However, the subject of this book is not just Tim Entwisle but also botanic gardens – specifically, the question of what botanic gardens are all about, or "should" be about. I find I have less to write about this for the simple reason that they are outside my professional experience (although not, of course, my personal appreciation). But this is the framework according to which the book is structured, and it mostly works well. A tour of many of the world's botanic gardens is provided, in Oceania, Europe, Asia, and the Americas, for Tim is a prolific traveller, and the high-ranking positions he has occupied at several major botanical institutions make him an ideal guide. There are many informed and pithy statements to be found, or at least statements with the appearance of wisdom to this layperson, such as "botanic gardens are best when they combine science, nature, and culture rather than try to serve a single purpose", or "any gardens are made better by attractive or provocative design and a connection to local culture", or "a garden should never be complete". You will find more. The resolution of some problems turns out to require complex solutions, such as convincing 20,000 roosting bats to make their homes elsewhere, or ultrasounding large branches to evaluate their structural integrity for the safety of the public.

There are repeated claims that botanic gardens offer a solution to climate change, but I found this more tenuous. The stored carbon at Melbourne Botanic Gardens is quoted in the thousands of tonnes – a paltry amount compared to emissions by the Melbourne population. But other suggestions, around sustaining local environments and protecting species threatened by climate change, are good ones, and well within the remit and ability of a botanic garden.

Eventually a clever segue is executed from the colonialist aspect of botanic gardens in Australia, and indigenous dispossession, to one of Tim's favourite hobbyhorses, for which he is well known. This is the matter of seasons, particularly those in Australia vis-à-vis those in England (analogous to an earlier critique in the book against Euro-centric biological classification). His two years stationed at Kew gave him an opportunity to compare their climates directly. I had assumed that the climate (or at least some salacious scandal) had precipitated Tim's resignation from Kew after a relatively short tenure, but it turns out to be run-of-the mill ambition once again: the top spot at Kew was unavailable and an alternative presented itself at Melbourne. In any case, Tim uses the opportunity to summarise the contents of Sprinter and Sprummer, his book on the subject of seasons. This makes a case for updating the traditional seasons for parts of the world outside Europe. I once attended one of Tim's talks on the subject, some of which was hilarious; I found this chapter informative but a little less satisfying than the

material I witnessed first-hand.

I would say the same about the definition of taxonomy offered in an earlier chapter: "taxonomy is in many ways more than science: part nomenclatural law, part history and part artistic artifice". This calls to mind Bill Bryson's version in A Brief History of Nearly Everything: "[it] is described sometimes as a science and sometimes as an art, but really it's a battleground". Tim's definition is the more sanguine, but in my opinion inferior to one of his earlier offerings: "a horizontal slice through a vertical continuum of evolutionary change". Leaving aside discrete evolutionary events (such as ploidal changes) for simplicity, I have always appreciated this elegant definition, which illustrates the perils of comparing species backwards in time ("when did species A become species B?"), shows the absurdity of the "God of the gaps" argument found in creationist literature, and offers an intuitive model for the relationship between evolution and taxonomy that anyone should be able to grasp. I would have enjoyed something like this definition making it into the present work. I actually spent some time during the early pages of the book wondering if the term "evolution" was consciously being avoided, à la Neil Shubin in Your Inner Fish, but thankfully Tim gets into his Darwinian stride in later chapters.

So, what exactly is a "plant punk"? I found myself still wondering this at the end of the book. Punk culture is anti-establishment, and Tim cleverly links his appreciation of "difficult" music with the struggles of others to appreciate an "adventurous art installation" in a botanical garden. Nonetheless, my personal jury is still out as to whether this works as a metaphor for the Entwisle model of botanic gardens as a whole. Although Tim's perspective on botanic gardens is certainly not shared by all, it doesn't seem too far outside the mainstream to me. The man surely doesn't look like a punk, but the cover illustration – a bespectacled and formally dressed Entwisle lounging in a botanical setting – is attractive and arresting. Even though this was not commissioned for the book, it works as a nod to both his status as a director and administrator as well as his genuine dedication to his work – plant scientists and their subjects.

John Clarkson, book review editor of this newsletter, pitched this book to me as "an easy-to-read memoir of an interesting life", and I think that is a fair description. It is also testament to a career towards which a young botanist might aspire – or avoid, for those more introverted (his advice for the young: "say yes to everything"). Surprisingly, Tim implies that he himself is an introvert, on the strength of his "thriving" in online meetings during covid lockdowns. But it's a special kind of introvert who openly enjoys tussles in the public square, some of which involved sparring with seemingly mendacious opponents, not to mention his numerous appearances in the media, actively sought and embraced with relish. It reminded me of another apparent incongruity – the accomplished rock climber Warren Harding describing himself as "lazy" – and is a useful reminder that the world does not always see us the way we see ourselves.

I enjoyed this book as I have enjoyed the company of Tim Entwisle himself. It is thoughtful, frequently witty, and generous in scope. There is much to appreciate and some to argue about, and I have the feeling that Tim, ever the professional, would appreciate that, and probably even enjoy it. Recommended.

Next (hybrid) AGM on 17 Nov 2022

Heidi Meudt ASBS Secretary

You are invited to join the ASBS Annual General Meeting on Thursday, 17 November 2022 at 11.00 AWST (Perth), 12.30 ACST (Darwin, Alice Springs), 13.00 AEST (Cairns, Brisbane), 13.30 ACDT (Adelaide), 14.00 AEDT (Sydney, Canberra, Melbourne, Hobart), 16.00 NZDT (Auckland, Wellington). The AGM will be held both in person and electronically. Details to participate in the videoconference will be emailed to you closer to the date. Please note that, as was the case last year, we have obtained confirmation from the Registrar-General that we are authorized to once again hold our AGM via methods of communication other than in person, because of the ongoing COVID-19 crisis. The AGM will be part of the hybrid 2022 ASBS student and early career researcher (SECR) conference being held at Mt Annan, Sydney from 15-17 November 2022.

Notice of special resolution to alter the Rules of the Society

Heidi Meudt ASBS Secretary

This is a notice of a special resolution to alter the Rules of the Society. A number of changes to the Rules of the Australasian Systematic Botany Society Inc. were outlined in two recent issues of the ASBS Newsletter (189:24-29 and 190:8-14). The proposed changes received no feedback or comments from members so far. As Secretary, I have received a letter signed by four members of the society, stating that the proposed changes, as published in the newsletters, will be tabled and discussed at the 2022 AGM on 17 November 2022 as a special resolution pursuant to Rule 34 and subrules 25(2), 30(5) and 30(6). Please familiarise yourself with the proposed changes ahead of the AGM. Any changes to the proposed Rule changes arising at the AGM will be voted on in a postal/email ballot. Anyone who has not voted in the postal/email ballot can cast their vote at a second meeting which will be held electronically (online) on Wednesday 1 February 2023 at 11.00 AWST (Perth), 12.30 ACST (Darwin, Alice Springs), 13.00 AEST (Cairns, Brisbane), 13.30 ACDT (Adelaide), 14.00 AEDT (Sydney, Canberra, Melbourne, Hobart), 16.00 NZDT (Auckland, Wellington). Details to participate in this online meeting will be emailed to you closer to the date.

IBC 2024 Call for Symposia

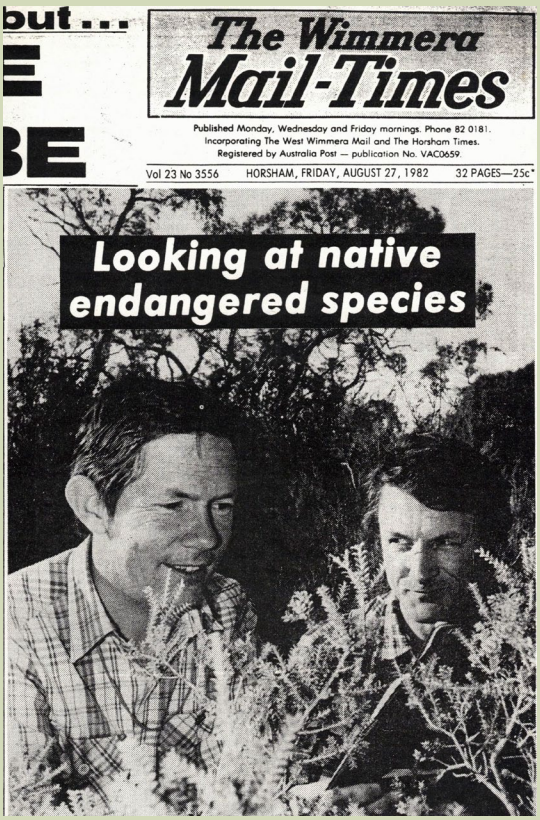
The Organizing Committee of the XX IBC

Two years ahead of the XX IBC, we are pleased to launch the Call for Symposia. We encourage researchers worldwide to submit symposium proposals on a variety of topics through the IBC website.The scientific committee will evaluate symposium proposals based on potential audience interest, scientific quality, and diversity of speakers in terms of gender, career stage, and geography, among others. Symposium proposals that bridge two or more of the 31 proposed topics, including novel views and/or multi-disciplinary research perspectives are especially encouraged. We will make an effort to accept as many proposals as possible. Each symposium will last for 2 hours and will consist of six 20-minute oral communications (15 min presentations + 5 min Q&A). To maximize the interchangeability of participants among concurrent symposia, changes to this schedule will not be allowed. Deadline for symposium proposals 30 December 2022 at: https://ibcmadrid2024.com/index.php?seccion=scientificArea&subSeccion=symposiumProposal1

Neville H. Scarlett

5th October 1944 - 10th August 2022

by R.F. Parsons


but ...

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Looking at native endangered species

Photograph of Neville Scarlett (right) and Bob Parsons from a newspaper article about their work on rare plants in the *Wimmera*. Source: *The Wimmera Mail Times*, August 27, 1982

Neville Scarlett was a botanist/ecologist who spent much of his life working on the classification, ecology and conservation of the Australian flora, the last 50 years of it at La Trobe University, and the last few years as an honorary research person there.

Neville was brought up in Geelong and then graduated with a BSc from the Botany School, University of Melbourne. He then studied the plant ecology of the Brisbane Ranges for his PhD with Dr David Ashton before withdrawing over the scope of the project.

From then onwards, he was usually employed on grants as a Research Officer for the La Trobe botanist Dr Bob Parsons. For a number of years in the 1970s and 80s, the work involved attempting to locate all surviving populations of every native plant species in Victoria thought to be threatened with extinction Australia-wide. It quickly became clear that Neville had an extraordinary gift for finding and reading old documents, examining old herbarium specimens and then searching for and re-discovering threatened plants in the field. His rate of output of stunning discoveries was amazing – e.g. *Ballantinia antipoda* (not seen since the late 19th century), *Taraxacum cygnorum* (not seen since 1907) – the list goes on and on. This 'rediscovery project' remains the greatest single contribution to Victorian plant conservation that there has been. This led to an ambitious project to re-establish populations of some of the rarest species into secure conservation reserves. Neville pioneered propagation and planting techniques, creating some of the earliest threatened species recovery plantings in Australia.

Since then, a lot of Neville's work has been on the taxonomically very difficult plant genera *Lepidium* (peppercresses) and *Taraxacum* (dandelions), correcting past errors and providing workable keys to their constituent species. His *Taraxacum* revisions are available in the floras of Australia, Victoria and South Australia and his *Lepidium* revision in the latter. Many of his excellent plant collections are housed at the National Herbarium of Victoria.

Neville had a profound passion for plants and a great gift for recognising and describing their differences. He usually worked alone, but was generous with his time, frequently identifying difficult species for naturalists and professional botanists. Those who knew him will regret the number of important, unfinished projects he leaves behind.

Nathalie Nagalingum

17th March 1975 - 22nd August 2022

by James Clugston

It is with great sadness that I share the loss of our colleague, friend and fellow member Dr Nathalie Nagalingum, McAllister Chair and Associate Curator of Botany at the California Academy of Sciences. Nathalie passed away peacefully in Melbourne, on August 22 surrounded by her family and husband.

Nathalie was a great colleague and friend to many of us and a brilliant, inspiring scientist and researcher. Her research has had a tremendous impact on the field of conifers, ferns, and cycads which, no doubt, will play a role in their future conservation. It is no exaggeration to say that she fundamentally shaped the way we think about cycads and their evolutionary relationships. Nathalie's tenacity and capacity to innovate, combined with her openness for new ideas and new techniques, ensured that her research and that of others around her was always at the forefront of technology.

Nathalie took great pride in her academic achievements in research and conservation, and I feel she had an even deeper satisfaction for her work as a mentor, advocate and supervisor. With great courage, drive and perseverance, she not only challenged assumptions but broke barriers and enhanced opportunity and inclusion in botany and plant systematics as a woman of science.

Nathalie cared very much about outreach and was an excellent science communicator but for the many people with whom she connected, Nathalie offered something far more than a fascinating science narrative - she reminded us to slow down, to look around, and to marvel at the incredible beauty, diversity and complexity of our natural world. Nathalie was born in Melbourne. She loved Australia and travelled widely to marvel at the country's glory and diversity. She encouraged us to ask questions and to be guided by our own passions and curiosities. I myself have been shaped by her teachings and mentorship as a supervisor. She is someone who made a deep impact on me and my career and I am proud to have been able to call her a colleague and friend.

Due to Nathalie's work and passion for ferns the American Fern Society is in the process of establishing funding to set up a Nathalie Nagalingum Research Award. This award will help to support student research in Nathalie's name.

I encourage you to take time to honour this remarkable woman.

In the News

Eucalyptus camaldelensis
Photo: Wikimedia commons

Please send me anything that you think is of interest for the ASBS community, otherwise the news is just what I see on Twitter - Todd McLay todd.mclay@rbg.vic.gov.au.

Online and in the media

Australia's favourite tree

A bit of excitement around the vote for Australia's favourite tree. After three rounds of eliminations, we ended up with the river red gum (*Eucalyptus camaldelensis*). The campaign was accompanied by two episodes of ABC's Catalyst, who travelled around the country interviewing experts and getting some nice footage of trees.

Link to story: https://www.abc.net.au/news/science/2022-07-29/vote-for-your-favourite-australian-native-tree/101210764

Watch it here:
Part 1: https://www.abc.net.au/catalyst/australias-favourite-tree-part-one/14021222

Part 2: https://www.abc.net.au/catalyst/australias-favourite-tree-part-two/14030316

Saving cycads

James Clugston (NSW) shares his passion for cycads, and the threats they are under globally.

Link to story: https://www.abc.net.au/news/2022-08-19/cycad-dinosaur-plants-conservation-botanic-garden-sydney/101347332

Wildfire recovery severely underfunded

Federal government spending post 2019-2020 megafires is estimated to have been 13 times less than what was required (~$2.7 billion).

Link to the stories: https://phys.org/news/2022-08-wildlife-recovery-australia-mega-fires-billion.html

https://conbio.onlinelibrary.wiley.com/doi/10.1111/cobi.13936

Contribute to IPNI/POWO directly

There is now a tool to add new your newly described plant species to IPNI and POWO, to help both platforms become even better.

Add it here: https://ipni.org/registration/

Pterostylis cycnocephala
Photo: Lachlan Copeland

Deceitful orchids

More evidence of the lengths orchids will go to get pollinated. The swan greenhood (*Pterostylis cycnocephala*) uses physical and chemical deception to attract a foolish gnat, which then traps the gnat inside the hood. The gnat can be trapped for up to 38 minutes, and upon release is covered in the pollen of the orchid.

Link to story: https://www.australiangeographic.com.au/news/2022/08/sexual-deception-orchid-tricks-and-traps-gnat-in-pollen-den/

New euc in Sydney

New species can be hiding in plain site, including the suburbs of Sydney apparently! Cool bit of taxonomy in the media from Trever Wilson (NSW) and friends.

Link to story: https://www.abc.net.au/news/2022-07-21/new-eucalypt-species-sydney-botanic-gardens/101255680

Twitter thread on how to switch to Zotero from Mendeley

If you're looking to move out of the Mendeley/Elsevier ecosystem for your reference management, this Twitter thread has a great step-by-step breakdown of what you need to do to ensure your reference library is maintained. The Google Docs integration with Zotero is delightful.

Read the thread here: https://twitter.com/RemyLevin/status/1543679716003020803?t=yrd04F-7nat6MTv7hZYz2Cw&s=19

Papers and publications

Articles can be provided by request to Todd at mclay@rbg.vic.gov.au.

Botanical education extinction

Another paper on the decline of botanical teachings at university level, this time in the UK. While the manuscript starts with the bleak state of affairs, there are some great points to be taken from their sections on the risk of botanical teaching extinction, and mechanisms to reverse the decline.

Read the paper: Stroud *et al.* 2022. The botanical education extinction and the fall of plant awareness. *Ecology and Evolution*: https://doi.org/10.1002/ece3.9019

Underground pitcher plant

A funky new pitcher plant has been named, *Nepenthes pudica*, described from Indonesia, that is unusual in producing pitcher-traps underground. Despite it being underground there's a good chance you've heard of it, as the article has set popularity records for the journal *PhytoKeys*.

Read the paper: Dančák et al. 2022. First record of functional underground traps in a pitcher plant: *Nepenthes pudica* (Nepenthaceae), a new species from North Kalimantan, Borneo. *PhytoKeys*. https://phytokeys.pensoft.net/article/82872/

Read the media release: https://www.sciencenews.org/article/pitcher-plant-underground-new-species-carnivorous

Article about popularity of original paper: https://phytokeys.pensoft.net/news/278

Can CRABS help us estimate diversification rates?

Interested in estimating diversification rates from your phylogeny, but the unidentifiability issues raised in recent years [see Louca & Pennell (2020) *Nature*] are making you question your life choices in becoming an evolutionary botanist? A new method out of the Höhna group (LMU Munich) has been published to try to deal with these unidentifiability issues. Maybe we don't have to give up our day jobs afterall...

Read the paper: Höhna *et al.* (2022). CRABS: Congruent rate analyses in birth–death scenarios. Methods in Ecology and Evolution.

Nepenthes pudica Photo: Dančák *et al.* 2022

Senecio madagascariensis Photo: H. Rose

https://besjournals.onlinelibrary.wiley.com/doi/abs/10.1111/2041-210X.13997

Crazy for daisies

The new Compositae newsletter has been released for all you capitulum fans. Includes an article where Alexander Schmidt-Lebuhn (CANB) and colleagues use phylogenetics to identify relatives of weedy species (and a surprise new genus!).

Read the paper: Schmidt-Lebuhn *et al.* (2022). Invasive *Senecio madagascariensis* Poir. and the *Senecio pinnatifolius* A.Rich. complex (Senecioneae): Evolutionary relationships and their implications for biological control research. http://www.fagro.edu.uy/~bioveg/capitulum_02_1.html

How do rainforest plants burn?

Have you ever wondered what would happen if you tried to set a bunch of rainforest plants on fire? Wonder no more, as these researchers from JCU have tried it. They burned 124 plant species and looked at how growth form, traits, and evolutionary lineage impacted flammability.

Read the paper: Potts *et al.* (2022). Growth form and functional traits influence the shoot flammability of tropical rainforest species. Forest Ecology and Man-

Burning rainforest plants Photo: Potts *et al.* (2022)

agement, 522: https://doi.org/10.1016/j.foreco.2022.120485

Flowering periods patterns in Australia correlate to climate

Stacks and stacks of data, and some impressive data wrangling went into this paper on flowering time associations with different biomes by PhD student Ruby Stephens (Macquarie University). They found patterns in flowering times associated with different biomes in Australia: desert flowering is aseasonal, alpine flowering is very intensive over summer. Patterns temperate/tropical biomes a less climate-associated.

Read the paper: Stephens *et al.* (2022). Climate shapes community flowering periods across biomes. *Journal of Biogeography*, 49 (7): https://onlinelibrary.wiley.com/doi/10.1111/jbi.14375

Article about the work: https://journalofbiogeographynews.org/2022/06/29/flowers-biomes-and-a-mountain-of-data/

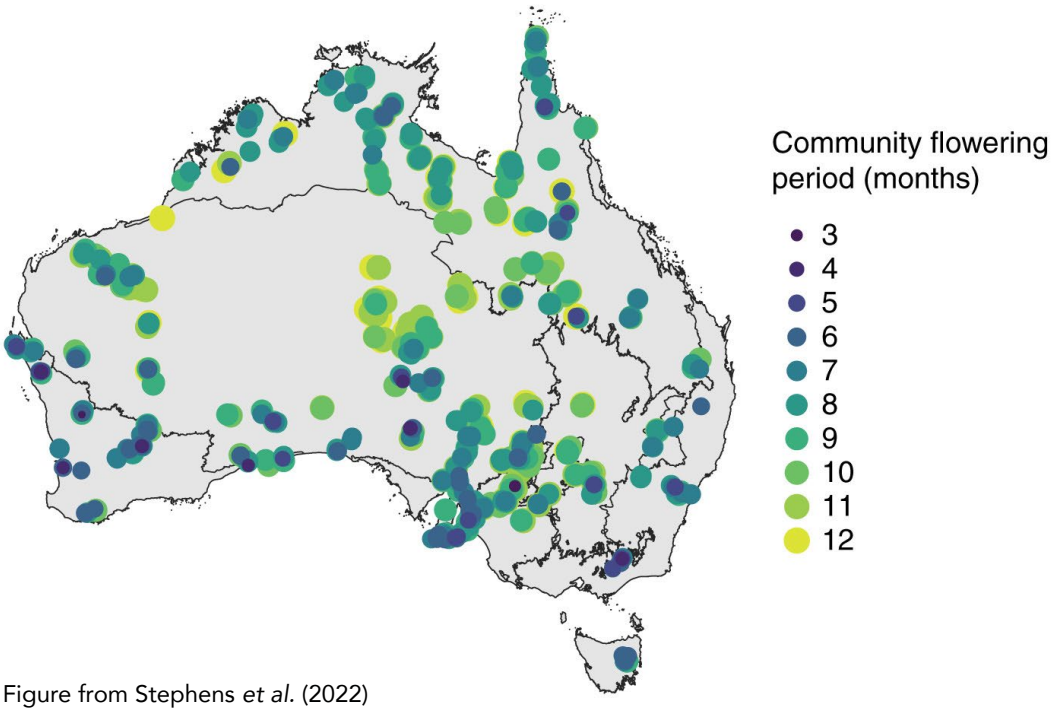

Figure from Stephens *et al.* (2022)

ASBS student and ECR register

In order to promote the connectivity and visilbility of our students and early career researchers (ECRs) in ASBS, ASBS Newsletter publishes a student and ECR register. If you're a student or ECR and would like to opt-in to this register follow this link: https://forms.gle/wxSzGA9F-pBTNXB6j8. For any questions or to change your details, contact Lizzy at editor.asbsnews@gmail.com

Name	Institution	Email
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Tim Hammer	The University of Adelaide	timothy.hammer@adelaide.edu.au
Lizzy Joyce	Ludwig-Maximillians Universität München	E.Joyce@lmu.de

The newsletter

The ASBS newsletter keeps members informed of society events and news, and provides a platform for debate and discussion. The newsletter is published quarterly on the ASBS website and in print. Original articles, notes and letters (not exceeding ten published pages in length) are encouraged for submission by ASBS members.

Have an article or an idea for the newsletter?
Send it to Lizzy at
editor.asbsnews@gmail.com

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Advertising Advertising space is available for products or services of interest to ASBS members at the following rates (AUD):

Full page: $200
Half page: $100
Flyers: $250

A 20% discount applies for regular advertisements. ASBS members are exempt from advertisement fees but not insertion costs for flyers ($50). For advertising enquiries please contact the editor.

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The society

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

Membership is open to all interested in plant systematics. Members are entitled to attend general and chapter meetings, and to receive the ASBS *Newsletter*. Any person may apply for membership by filling in a membership application form available at http://www.asbs.org.au/membership.html, and forwarding it to the Treasurer. Subscriptions become due on 1 January each year.

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