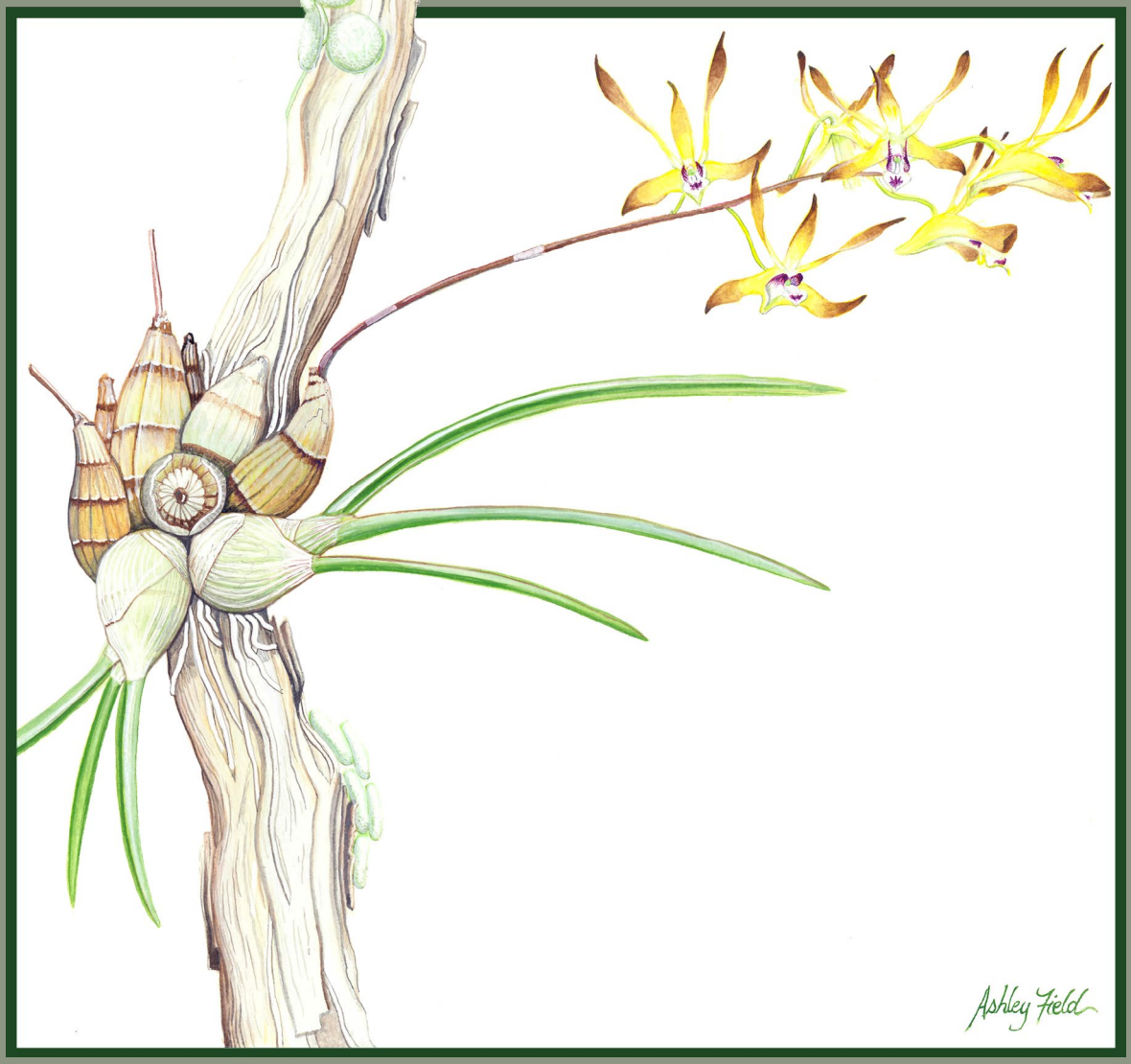
Newsletter

Australasian Systematic Botany Society

No. 196, September 2023



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Australasian Systematic Botany Society (ASBS)

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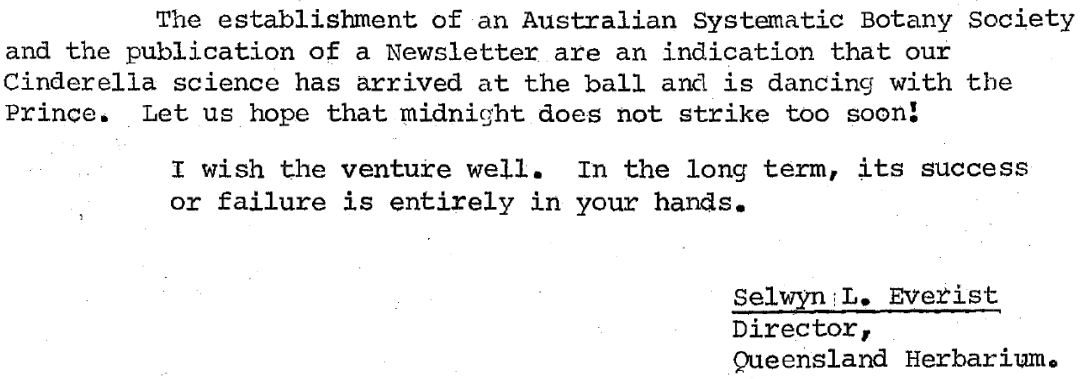
Previous issue No. 195 published:
11 Aug 2023 (digital), 6 Aug 2023 (print)

In this issue

From the President

Katharina Nargar ASBS President



The establishment of an Australian Systematic Botany Society and the publication of a Newsletter are an indication that our Cinderella science has arrived at the ball and is dancing with the Prince. Let us hope that midnight does not strike too soon!

I wish the venture well. In the long term, its success or failure is entirely in your hands.

Selwyn L. Everist
Director,
Queensland Herbarium.

Above Selwyn Everist on the formation of the Australian Systematic Botany Society (*ASBS Newsletter* No. 1, p. 1-2).

Happy 50th anniversary, ASBS! What a wonderful achievement to celebrate! In the early days the success of the newly formed Society was far from certain as highlighted in the above statements from Selwyn Everist's address to ASBS members in the first ASBS Newsletter (*ASBS Newsletter* 1: p 1-2). However, at the first Annual General Meeting held in Perth on the 7th of April 1973, ASBS already counted a remarkable 113 members and was reasonably optimistic that the numbers could climb up to 150 members within its first year (*ASBS Newsletter* 1, p. 5). The Australian systematic community back then was certainly determined to take their fate into their own hands and turn things around for the better. The vibrancy of our Australasian systematic botany community today is a living testament of the fact that this mindset brought us a long way which shall be a great incentive for keeping this spirit alive.

This brings me to the upcoming Biosystematics 2023 conference 'Celebrating the Past – Planning the Future', the first joint conference of the Society of Australian Systematic Biologists, the Australian Biological Resources Study, the Australasian Mycological Society, and our Society, which will be held in Canberra from 27-29 November. The conference program is already looking great and the conference organising committee was very pleased about the great number of talk abstracts received (over 140). We are already excited to welcome and hear from our keynote and plenary speakers including Dr. Olwen Grace, Deputy Director of Science at the Royal Botanic Gardens Edinburgh, Prof. Doug Hilton, new Chief Executive Officer of CSIRO (with a passion for taxonomy), Prof. Rudolf Meier from the Museum für Naturkunde in Berlin, and Prof. Simon Ho from the University of Sydney.

We are very grateful to the organisers and presenters of three conference workshops: Remco Bouchaert and Jordan Douglas who will run a BEAST workshop, Alexander Schmidt-Lebuhn and Nunzio Knerr who will provide an introduction to image classification models for species identification, and Mark Harvey who will provide guidance on how to describe new animal taxa without breaking the rules of the International Code of

Zoological Nomenclature.

Among the very special conference highlights this year will certainly be the conference field trip to Tidbinbilla Nature Reserve and Corin Forest, as well as the big celebratory conference dinner, which will see the world premiere of 'The Presidents'. Many thanks go to Mike Bayly, Michelle Guzik (SASB), Haylee Weaver (ABRS), Claire Stephens (ANU), Camille Truong (ASM) and Brendan Lepschi (ASBS/CSIRO) from the conference organising core committee for their tireless work to make this all happen.

For our New Zealand members who may not be able to attend the Biosystematics 2023 conference in person, I am very pleased to announce a special New Zealand-based 50th anniversary event in December, organised by ASBS chapter convenors Heidi Meudt and Rob Smissen with support from ASBS: 1) an informal ASBS lunch for current and past New Zealand ASBS members at the Allan Herbarium in Lincoln with a presentation by Nancy T. Burbidge medallist (2018) and longstanding ASBS member Ilse Breitwieser, and 2) a one-day Disaster Preparedness workshop covering many aspects of disaster preparedness and recovery of collections. Both events will be held in conjunction with the upcoming New Zealand National Herbarium Network (NZNHN) annual meeting in early December, more details in this newsletter. Thank you, Heidi, Rob and Ilse for arranging for these special celebratory events for our New Zealand members.

Further, it is my great pleasure to announce the successful recipient of this year's Marlies Eichler Postgraduate Fellowship, Lalita Simpson (Australian Tropical Herbarium, JCU) for her postdoctoral research project 'Taxonomy and conservation genomic assessments of threatened orchids'. Congratulations, Lalita!

The Society is welcoming Andrew Thornhill, Director of the NCW Beadle herbarium, as ASBS chapter convenor for Armidale. Thank you, Andrew, for taking on the role of ASBS chapter convenor. We are currently inviting nominations for the Chapter convenor positions for Perth, Sydney and Adelaide. Please contact Council if you are interested in becoming the local ASBS contact for our ASBS members in one of these three regions.

Last, but not least, you are invited to attend the ASBS Annual General Meeting which will be held at 5pm AEST on 29th of November as hybrid meeting (in person and online). The face-to-face meeting will be held at Kambri Cultural Centre, ANU, Canberra. Details on the meeting venue and how to participate online will be emailed to you closer to the date. Special agenda items for this AGM will include the launch of our new and shiny ASBS website (hooraaay!!!) as well as a updates on the design of a new ASBS logo from Patty Chan.

Looking forward to seeing you in person or virtually at the Biosystematics conference and/or the ASBS AGM in November.

Let's keep dancing!

Best wishes,
Katharina

In the beginning...

Friendship, co-operation, support

John Clarkson

As the Society approaches the end of this anniversary year members were invited to contribute some thoughts on what membership of the Society has meant to them. I received a number of responses from members young and old. A common thread ran through all of the replies. They spoke of a society that fostered a cooperative spirit amongst its members which results in a sense of community and acknowledged the valuable support provided to students. Most of all they spoke of the friendships formed through association with the Society.

Alex George

Perth, WA; joined 1973; Member of inaugural Council; Councillor 1973/75–1977/79; Newsletter editor 1978-1980, 1988, 2020-2021; Nancy Burbidge Medal recipient 2004

"Perhaps arising from my inspiring year as ABLO when, based at Kew, I met so many botanists from around the world, I was excited by the proposal to form the society, realising its potential for fostering communication and cooperation between Australian botanists. At the time, Western Australia seemed rather isolated geographically from the rest of the country, but even locally there was not much communication. As soon as I returned from the inaugural meeting I organised a gathering of locals and we formed the Perth Chapter on 23 July 1973. It became clear that others felt the need, too, for within a few months our membership grew to about 40, pretty good for a small community. This included 'non-professional' people who enjoyed getting together and learning about current and historical research. The very first meeting was national in its thrust, a discussion, led by Paul Wilson, on the *Flora of Australia* project. The chapter met regularly, and then I moved to Canberra where I found a similarly enthusiastic chapter.

I also realised the importance of the *Newsletter*. For many members, then and now, it is the main means of communication. A huge amount of history is now recorded in its pages. The early series '*Know the Herbaria*' was very valuable in this respect. It's time for a repeat, to keep us informed of who's who and who's doing what!

The society's conferences have been highlights in its progress. Those I have attended have been enjoyable both botanically and socially. They contribute to the collegiality of botany in Australia and New Zealand.

Likewise, our publications have been significant contributions, professionally produced and still relevant.

While researching for the new book The Australian Botanical Liaison Officer scheme at Kew, 1937–2009, I came across a comment that 'Somehow one is forced to conclude that the Australian botanists do not have a particularly big amount of the co-operative spirit either born or bred in them.' (You will have to read the book to find out who said it). But we have certainly come far since then, and ASBS has played a big role in that progress."

Robert Hill

Adelaide, SA; joined 1974, Newsletter editor 1998–2001; Nancy Burbidge Medal recipient 2003

"The ASBS has been an important part

of my career, mostly because of its direct relevance and its reliability. When I began my career palaeobotany (in the broadest sense, including palynology) was going through a relatively vibrant time, with several university staff members teaching and researching the plant fossil record and a large number of Honours and Postgraduate students apparently ensuring a healthy future. We even had our own Australian society, with quite healthy membership. However, over time this has slowly declined, for a number of reasons which really need a separate analysis. As this occurred we went through several bleak milestones. The number of university staff with palaeobotanical research and teaching interests was gradually eroded, until we reached the point where a separate professional society was no longer supportable. At that time, I entered negotiations with ASBS office bearers and the result was a seamless transition, where ASBS encompassed the interests of the remaining palaeobotanists (and especially the Honours and Postgraduate students). I remain extremely grateful to the ASBS for this – palaeobotanists were made welcome and the students continue to receive strong support for their research. The next looming crisis will be the eventual closing down of palaeobotany as a research and teaching discipline within Australian universities – we are almost at that point now. I hope that this will not be a permanent situation, but I am sure that the strong support of the ASBS has allowed us the time needed to make a case for palaeobotany as a major part of the toolkit we have for understanding the evolution of the Australian flora.

To finish on a positive note, I have never seen stronger student interest in palaeobotany than we have right now. The relevance has never been higher and the interest matches that. Hopefully, with the support of the ASBS, we will soon see a deserved resurgence in this critical field."

Stephen Hopper

Albany, WA; joined 1974, President 2002/3–2004/5, Nancy Burbidge Medal recipient 2008

"Membership of ASBS has been an important part of my career. I have been publishing new taxa since 1978 and greatly enjoyed discussing matters of mutual interest with colleagues at ASBS meetings, local and national, especially early in my studies and work. We have lived through an exceptional period for systematic biology, spanning the emergence and rise of DNA based studies to the point now where accurate species delimitation is possible using next generation approaches across most genera and families. While healthy argument and debate continues about matters such as taxonomic rank, the power of our science has improved and we are now tackling projects never dreamed of when I was a PhD student grappling with the evolution of kangaroo paws (*Anigozanthos* and *Macropidia*, Haemodoraceae). The shared journey and friendships made along the way through ASBS continue to influence how I think about the world, and facilitated a career in Australia and the UK that otherwise may not have been possible."

Ilse Breitwieser

Lincoln, NZ; joined 1999; Councillor 2011/12–2013/14; Nancy Burbidge Medal recipient 2018

"The Trans-Tasman systematic botany connections have been important for me since my PhD days in New Zealand when I had the opportunity to collect everlasting daisies in Tasmania. The first ever conference I attended was the joint meeting of the Australian Systematic Botany Society and the New Zealand Botanical Society in Auckland in 1991. Colleagues I met at this conference, I'm still friends with today. Numerous Trans-Tasman collaborations followed. These have been collaborations from research on everlasting daisies to

joint student supervision to work on the Council of Heads of Australasian Herbaria to the development of the Decadal Plan for taxonomy and biosystematics in Australia and New Zealand 2018-2027.

That these Trans-Tasman connections have been important for me was also demonstrated in the theme of the 2010 Australian Systematic Botany Society Conference at Lincoln in Canterbury: "Systematic botany across the ditch: links between Australia and New Zealand". The society was still "Australian" at the time. Discussions at the Darwin and Armidale ASBS conferences in 2007 and 2009 respectively and subsequently at the AGM in Lincoln led to a resolution to make the Australian Botanical Society "Australasian". At the AGM in Lincoln members voted for a ballot and a second General Meeting. That was held on 15th March 2011 at the National Herbarium of New South Wales. The name change was successful and became valid on that day. The name change was implemented immediately in the title page of the ASBS newsletter from March 2011. This change aimed at encouraging more New Zealanders, New Caledonians, New Guineans and Fijians to join and become active members of ASBS. I was the first New Zealander on the ASBS Council, followed by Leon Perrie, Jen Tate, and now by Heidi Meudt. I hope most members perceive it now as completely normal and natural that ASBS is Australasian, and that they regard this development as an enrichment. It is probably even more significant for plant systematists in New Zealand, simply because the New Zealand systematic botany community is so small, so finding a home in ASBS makes us much more engaged, gives us enthusiasm, motivation, encouragement, collaborations and friendships."

Bee Gunn

Melbourne; ECR; joined 2011, Inaugural Marlies Eichler Postdoctoral Fellow 2017–18

"I have been a member of the Australasian Systematic Botany Society since 2010 as I am interested in botanical science and belonging to the ASBS is a wonderful opportunity to meet with other botanists at annual conferences, present talks, build collaborations, extend my knowledge about the Australian flora, and importantly provides eligibility for graduate and Early Career Researcher grant support. During my PhD candidature at the Australian National University, I was fortunate to be a recipient of the ASBS Postgraduate Student Travel Grant to attend the XVII IBC during July 24–30, 2011 held in Melbourne to present a lightning talk on "Genetic diversity and phytogeography of wild-sown and cultivated coconuts (*Cocos nucifera* L.)". This International Botanical Congress brought me in contact with specialists in Arecaceae family and the interesting research on genome size variations. This led me to write to Dr. Alain Rival at IRD (Montpellier, France) to work on evaluating the genome size of the coconut and application of flow cytometry techniques. I applied for the Australian French Association for Science and Technology Fellowship in 2012 to travel to Montpellier for training in flow cytometry with the aim to ascertain the absolute genomic size of the coconut. This research project resulted in a publication on Ploidy and domestication are associated with genome size variation in Palms (*American Journal of Botany* 102(10): 1625–1633. doi:10.3732/ajb.1500164)."

In 2017, whilst working as a Postdoctoral Fellow at the Royal Botanic Gardens Melbourne on the phylogenomics of Australian Asparagales and *Lomandra* taxonomy funded by the Australian Biological Resources Study, I was very fortunate to be awarded the Marlies Eichler Postdoctoral Fellowship. This fellowship allowed me to study the evolution polyploidy in Australian Asparagales. This funding provided salary support to extend my Postdoctoral Fellowship and the materials to ascertain absolute genome sizes

together with chromosome numbers to understand polyploidy across the Australian Asparagales. This MEPF also enabled me to train two university science students in flow cytometry, cytology and morphology for their projects.

I'm very thankful to the ASBS organization and the many opportunities it has offered me as an Early Career Researcher in Botany."

Melody Fabillo

Brisbane, QLD; ECR; joined 2011, Hansjörg Eichler Grant recipient 2014

"The Australasian Systematic Botany Society (ASBS) has been instrumental in my academic journey, offering vital support and resources that greatly facilitated the completion of my PhD research project. During my first attendance at the ASBS conference in Perth in 2011, I presented my PhD project plans on resolving the taxonomic puzzle in the Australian resurrection grass, *Tripogonella loliiformis*. In a bold move during my presentation, I requested fellow members who are doing field work to assist with collecting plant specimens for my research. The response was overwhelming, with numerous members contributing to my collection efforts. This collaborative spirit showcased the sense of community and shared botanical passion that defines ASBS. The unwavering support by ASBS was extended throughout my PhD studies, culminating in the prestigious Hansjörg Eichler Scientific Research Fund Award, which allowed me to meticulously examine type specimens of *T. loliiformis* at the National Herbarium of Victoria (MEL) and further enriching my research. ASBS has been a constant support, fostering connections and nurturing my professional growth. To me, it represents not just a membership but a vibrant community that transformed my PhD project into passion and significant contributions to plant systematics and to the Queensland Herbarium and Biodiversity Science where I am now affiliated as botanist and one of its grass curators."

Rachael Fowler

Sunshine, VIC; ECR; joined 2015; Marlies Eichler Postdoctoral Fellow 2020–21

"In 2015, as a new PhD student, I first signed up to be a member of ASBS. The annual conferences were the talk of the lab amongst the other students and I was curious to see what all the fuss was about. At my first conference (Canberra, 2015) I was hooked. My initial nerves about not knowing many people dissipated quickly as seasoned members and other students alike welcomed me into the fold. I immediately felt at home and couldn't believe a group of such like-minded people, passionate about all things plants/systematics/phylogenetics actually existed. In the years since my first conference I feel incredibly lucky to have been the recipient of student funding and travel awards, and more recently a Marlies Eichler postdoctoral fellowship. These opportunities have allowed me to expand my research and given me the confidence, and a track record, to apply for other funding opportunities. I also feel truly lucky to have made such strong friendships with many other members. Each year I still look forward to the ASBS annual conference, both to hear about the latest research being undertaken but also to catch up with great mates. With the recent arrival of a new baby, this year I won't be able to make the conference but look forward to joining in again for many years into the future."

Sophie Newmarch

Manawatu, NZ; student member; joined 2019; Hansjörg Eichler Grant recipient 2020

"Being a member of ASBS has been key to me pursuing research in systematic botany. I became a member in 2019 and attended my first ever conference (Wellington, ASBS-NZPCN conjoint conference) when

I was a summer student. Here I was inspired by other ASBS members and their research to turn my summer project into a MSc. Some of the connections I made at the conference later proved critical to fieldwork I have gone on to do, for example in the upper South Island. These connections have also turned into friendships and we support each other's research journeys today. The online ASBS conference in 2021 again inspired me and contributed to me converting my MSc into a PhD, and also helped boost motivation after what was a turbulent few years for many. My project expanded to include another genus and fieldwork in isolated locations (e.g. Chatham Islands, Stewart island, and Great Barrier Island) where again members of ASBS assisted me and all trips were very successful. I am really looking forward to the upcoming conference in November to reconnect with ASBS members, present some of my results, and be inspired yet again."

Ryan O'Donnell

Braddon, ACT; student member; joined 2019; Hansjörg Eichler Grant recipient 2022

"I first joined ASBS when I was a Masters student at UNE, and it's been a wonderful group to be a part of. The Society has been nothing short of friendly and supportive and it has provided such a safe and welcoming space to fresh researchers such as myself. I hope that the next generation of systematists coming through continues to push the envelope and seek out innovative ways to understand this diverse continent that we are so privileged to be able to study. I look forward to what the next 50 years has in store."

Patricia Chan

Madison, WI USA; student member; joined 2020; Hansjörg Eichler Grant recipient 2023

"As a PhD candidate based in USA and studying Australian flora, membership in ASBS means strength in connections professional with colleagues across the world. Through last year's SECR conference, ASBS enabled invaluable connections between me and my peer researchers that I wouldn't have had otherwise, allowing us to share ideas on the cutting edge of plant systematics. The Hansjörg Eichler grant is funding a section of my studies on understanding the biodiversity of Western Australia - which would not be possible without this generous support. I appreciate that ASBS is not only open to, but encouraging of interdisciplinary pursuits between botanical sciences and the arts- and has made it clear that its earlier career members are valued in shaping the future of the society. As an early-career international scholar, I've felt welcomed into ASBS with open arms and am grateful to be part of this intellectual community."

Duncan Nicol

Dunedin, NZ; student member; joined 2020; Hansjörg Eichler Grant recipient 2020

"Meeting other members at the combined ASBS-NZPCN conference in 2019, along with seeing a whole range of interesting talks, lured me into continue studying systematics. Not only had I found a group with similar evolutionary interests, but ASBS was also willing to support my research. I've spent five summers collecting around the South Island, New Zealand, with support from ASBS through the Hansjörg Eichler Research Fund. After meeting a bunch of interesting and enthusiastic SECRs at last year's conference, I'm very much looking forward to what ASBS will get up to over the next several decades."

Chasing a ghost through Gondwana's history – the fossil record of the 'seed fern' *Komlopteris*

Miriam Slodownik University of Adelaide, *Robert Hill* University of Adelaide, *Stephen McLoughlin* Swedish Museum of Natural History

Pteridosperms, also known as 'seed ferns', represent an extinct polyphyletic group of plants with fern like fronds. Unlike true ferns, which reproduce with spores, pteridosperms reproduce with seeds. They were particularly common in the Paleozoic and Mesozoic, but declined noticeably with the diversification of angiosperms. They were long believed to have gone extinct at the end-Cretaceous mass extinction 66 million years ago (e.g.,

Figure 1 Examples of *Komlopteris* species from Australia. **A–E** *Komlopteris cenozoicus* from the early Eocene of Tasmania: **A** reconstruction of a frond; **B** UV fluorescence image of a frond; **C** close-up of UV fluorescence image of a frond with visible intraveinal resin bodies; **D** scanning elecron microscopy image showing the inner cuticular surface including a stomate with dicyclic subsidiary cells; **E** photo-micrograph of stained cuticle. **F** *Komlopteris victoriensis* from the Aptian Stage (Early Cretaceous) of Victoria. **G** *Komlopteris boolensis* Valanginian Stage (Early Cretaceous) of Victoria. Scales: A–C and F–G = 1 cm; D, E = 50 µm.

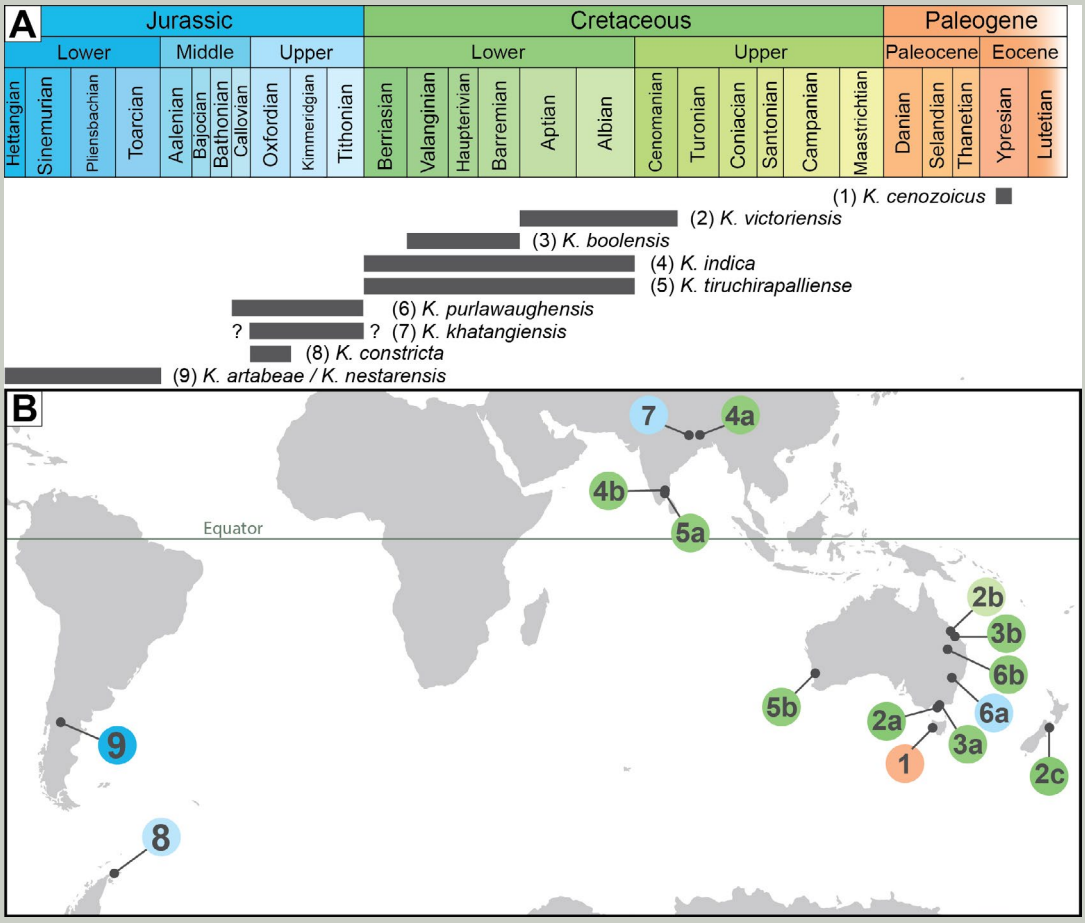


Figure 2A Geochronological scale indicating the range of Southern Hemisphere *Komlopteris* species. **B** Selected localities of Southern Hemisphere *Komlopteris*: 1) *K. cenozoicus*: Lowana Road outcrop, Macquarie Harbour Fm, Tasmania, Australia; 2) *K. victoriensis*: a, Koonwarra Fossil Fish Beds, Eumeralla Fm, Victoria, Australia; b, Styx Coal Measures, Queensland, Australia; c, Warder Fm, Canterbury, New Zealand; 3) *K. boolensis*: a, Rintoul Creek Fm, Victoria, Australia; b, Stanwell Coal Measures, Queensland, Australia; 4) *K. indica*: a, Rajmahal Fm, Bihar, India; b, Sivaganga Formation, Tamil Nadu, India; 5) *K. tiruchirapllliense*: a, Sivaganga Formation, Tamil Nadu, India; b, Leederville Formation, Macintyre Gully near Gingin, Western Australia; 6) *K. purlawaughensis*: a, Talbragar Fossil Fish Bed, Purlawaugh Formation, New South Wales, Australia; b, Injune Creek Group, Surat Basin, Queensland, Australia; 7) *K. khatangiensis*: upper fossiliferous shale bed, Khatangi Hill, Dubrajpur Formation, Bihar, India; 8) *K. constricta*: Upper Mount Flora Formation, Antarctic Peninsula; 9) K. artabeae and K. nestarensis: Nestares Formation, near Alicurá, Neuquen, Argentina.

Taylor et al., 2006; Taylor et al., 2009).

Recently, however, a 53 million year old pteridosperm species, *Komlopteris cenozoicus*, was discovered at the west coast of Tasmania near Strahan, post-dating the end-Cretaceous extinction by about 13 million years (McLoughlin et al., 2008). The discovery of this 'ghost lineage' prompted new excavations at its type locality, which led to the recovery of 52 new leaf specimens of *K. cenozoicus*. Meticulous preparation of the retrieved hand samples revealed that the new *Komlopteris* specimens were more complete than those first described and offered the opportunity to study the frond architecture and micromorphology. The fronds had long petioles and entire pinnae with decurrent to constricted bases, a prominent mid-vein and bifurcating secondary veins (Fig. 1A–C). Scanning electron microscope images confirmed the presence of dicyclic

stomata (two rings of cells surrounding the stomata; Figs. 1D, E) that are diagnostic for the genus (Barbacka, 1994). Furthermore, a striking detail was discovered by illuminating the specimen with ultraviolet light: small resin bodies between the veins (Fig. 1C).

With the new characters retrieved from the Tasmanian fossils, an extensive literature review and a study of unpublished material from museum collections, we were able to trace the Komlopteris lineage through Jurassic to Eocene strata of Gondwana (Slodownik et al., 2023) (Fig. 2). In addition to *K. cenozoicus*, we identified nine more species that have pinnate leaves with a range of entire to dissected pinna margins (Fig.1F–H) and sometimes include traces of resin bodies (Fig. G). Many published fossils of Komlopteris-like leaves have been assigned to *Komlopteris*, some were previously assigned to various other taxa, and others had not yet been described or published. The oldest records that we recognised are derived from the Lower Jurassic of South America. Late Jurassic *Komlopteris* can be found in Antarctica, India and Australia, while the Cretaceous record is concentrated in India, Australia, and New Zealand. The youngest occurrence is of *K. cenozoicus* from Tasmania. Another fossil from South America, which is of similar age as the Tasmanian material, has stiking similarities with *Komlopteris*, but needs further study to confirm its affinity (Slodownik et al., 2023).

Furthermore, we noticed striking macromorphological similarities with the umkomasialean (or 'corystospermalean') leaf taxa *Kurtziana* and *Dicroidium* which were common in the Triassic but disappeared at the end-Triassic mass extinction (Anderson and Anderson, 1983; Anderson and Anderson, 1989), while pollen typical of these taxa persisted until the early Paleogene (e.g., Harris, 1965; McKellar, 1974; Dettmann, 1986). On the one hand, the leaf architecture of *Komlopteris* resembles that of *Kurtziana*, of which, however, the cuticular morphology is unknown. *Dicroidium*, on the other hand, which always has characteristically forked fonds, has been shown to have interveinal resin bodies. Nonetheless, similar resin bodies are also present in the leaves of Late Triassic *Nilssoniopteris* sp. (Bennettitales) from China (Xu et al., 2021). This suggests that this trait might have been more common among plants from the middle Mesozoic Era than previously thought.

Umkomasiales played a pivotal role in the ecosystems of Gondwana during the Triassic period, contributing significantly to the coal formation. Our research supports the sustained existence of the Umkomasiaceae beyond the Triassic, albeit with reduced dominance. Specifically, the *Komlopteris* lineage persisted throughout the Jurassic and Cretaceous epochs and endured as relictual populations into the Paleogene era.

Acknowledgements

I thank the ASBS for funding this research by awarding me the Hansjörg Eichler Award. The funding allowed the study of the collections at the Victorian Museum in Melbourne, Australia, the Natural History Museum in Stockholm, Sweden, and the British Antarctic Survey in Cambridge, United Kingdom. Furthermore, preparation materials, scanning electron microscopical and palynological analyses were funded by the award.

This research has now been published in the journal *Review of Palaeobotany and Palynology* (Slodownik et al., 2023). We thank the Editor Prof. José Carrión for the support during the publication process and Dr Evelyn Kustatscher and one anonymous reviewer for their input and feedback.

We thank Helen Caville for fossil site access, Prof. Gregory Jordan and Dr Chris Mays for fieldwork support and technical discussions, Tim Ziegler for collection access at Museums Victoria and David Summerhayes for photography support. We thank Dr Margret Steinthorsdottir for travel support to Stockholm and valuable feedback. This work was further supported by the University of Adelaide, Gostralia! [PhD scholarship to Miriam Slodownik] and the Swedish Research

Council [VR grant numbers 2018-04527 and 2022-03920 to Steve McLoughlin].

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Frederick Manson Bailey (1827–1915), as seen by Archibald Meston

Philip Short

WARNING Some material in the following article, which is reproduced verbatim from the official report of the Meston-led scientific expedition to Bellenden-Ker Range *Bellenden-Ker Scientific Expedition*, includes language and remarks that could be distressing for some readers. These views, reflecting the attitudes of the original author, are not those of ASBS Council or the *ASBS Newsletter* editors.

Above Frederick Manson Bailey, date unknown. Source: Wikimedia Commons.

Above Archibald Meston, c.1895. Source: John Oxley Library, State Library of Queensland.

Residing in Melbourne in the 1980s I took a brief interest in rhododendrons. With the splendid gardens at Olinda in the Dandenong Ranges nearby, it was rather difficult not to. I even went so far as buying a couple of vireyas (*Rhododendron* sect. *Vireya*) to grow in a fernery in my backyard and searched for relevant taxonomic literature regarding Australian species. At the time, only *R. lochiae* F.Muell. (Mueller 1887) was recognised and I read the account of the European discovery of *R. lochiae* by plant hunter William Sayer and his companion Alexander Davidson on Mount Bellenden-Ker (Sayer 1887).

Some years later I learnt that *R. viriosum* Craven (Craven 2002) had been described for the more northern populations of native Australian rhododendrons. It was not recognised in the *Australian Plant Census* 2010 and it is evident that not everyone agrees as to its status (Rouse & Hancock 2017; Worboys

2017, 2018). I also happened upon Archibald Meston's accounts of the scientific expedition he led to the Bellenden-Ker Range in 1889. One of the scientific gentlemen accompanying him was the Queensland botanist Frederick Manson Bailey (1827–1915) who, during the expedition, collected and later described many new species. Meston's opinion of scientific collectors and their actions, especially Bailey, took my attention and may be of interest. Thus, an abridged account of an article by Meston, titled '*Bellenden-Ker Scientific Expedition*' first published in *The Brisbane Courier* (Meston 1889a) is included below.

To appreciate this article, it is perhaps necessary to briefly introduce some pertinent information about Archibald Meston (1851–1924) mostly taken from an obituary (Brisbane Courier, 1924). Archibald emigrated from Scotland to Australia with his father and other family members when quite young; "In subsequent years his name came prominently before the public in regard to literature, exploration, ethnology, and athletics." He was editor of some local Queensland newspapers at an early age, and throughout his life was to publish many articles and is said to have "wielded a facile pen … [that] his articles were invariably interesting and well written" and that "He had a retentive memory, which stood him in good stead." Dowe & Broughton (2007) rightly referred to his "somewhat romanticized account of the Bellenden-Ker Range Expedition" but I mostly like the exuberance of his writing. That said, from reading many of his reports related to the expedition I have also concluded that he was somewhat self-absorbed and that some of his statements may be exaggerated and inaccurate.

Warning: The official report of the Meston-led scientific expedition to Bellenden-Ker Range (Meston 1889b) appears to have been published, along with the earlier articles penned by Meston in the *Courier*, in December 1889 *(Brisbane Courier* Dec. 1889) and is available online (see References). Although I largely enjoyed reading Sayer's and Meston's articles about their exploits, I regret to say that their choice of words and various commentary is likely to cause offence or distress for some readers. I particularly refer to the section on aboriginal people published in Meston's official report, and at an earlier date in the *Brisbane Courier.*

> "The following is the preliminary chapter of an account of the first expedition of the kind ever sent out in Australia by any Australian Government. Those who by some artless process of reasoning, or more likely by an abrupt arrival at a conclusion without the assistance of any reason whatever, conceived an idea that the expedition was a picnic excursion, one prolonged holiday of calm ecstatic sensuous joy, will be required to part from that idea, with or without a pang. When the attention of the Colonial Secretary was called to the desirableness of Queensland obtaining the first knowledge of her own scientific resources, and my own services were offered gratuitously as the leader of a scientific party, Mr. Morehead remarked at once that the proposal commanded his earnest approval, and the whole preliminary business, so far as he was concerned, was settled in ten minutes, while in the Lands Office, Mr. Black displayed an equally admirable decision. Mr. Bailey and myself left Brisbane on board the *Elamang* on the 4th June. We arrived at Cairns on the 9th, and were met there by Mr. Kendall Broadbent, the museum zoological collector, who had come down from the Herberton Ranges to join the expedition. In three days all preliminary preparations were completed, and we started on the 14th from Cairns. The party consisted of Mr. F. M. Bailey, colonial botanist; Mr. Broadbent, the ornithologist; my 14-year-old son Harold; a colonial-experience young man, named Walter Beman, sent out to me from Yorkshire; three Tanna Island kanakas; and myself. ...
>
> Having greatly relieved myself by these philosophic remarks [here omitted], it is time to mention the overwhelming sense of responsibility thrown on me by undertaking to escort the Colonial Botanist to

the summit of Bellenden-Ker, and bring him back right side up with every possible care.

Mr. Bailey was described to me as a man never known to quail in danger's stormy hour if there was the remotest prospect of running against a new plant, falling over a log of unknown timber, or treading on some giant species of previously unclassified mushroom. Too well I know that he was loaded to the muzzle with a full charge of botanical names before which the bravest man would quail, and sensitive vegetation curl up like a pumpkin leaf in a sharp frost. Having effected an insurance on his life for half-a-million, and made a will bestowing sixteen tons of dead and dried plants on anybody who would cart them home, he boldly announced to his anxious friends that he was now prepared to face the land where the *Bulbophyllum* Baylei [*Bulbophyllum baileyi*] was one of the champion orchids, where the O*phyoglossium pendulum* [*Ophioglossum pendulum*] and *Denbrobium hispidium* [*Dendrobium hispidum*] adorned the noblest trees, and the shy P*ogonatherum saccharoideum* [= *P. paniceum*] peeped bashfully from the crevices of the granite rooks. Little was known of Mr. Bailey's endurance and dauntless spirit by those who prophesied that he would never reach the top of Bellenden-Ker, that if he did arrive there he would never come back, and in any case would be carried off by a tree-climbing kangaroo, perish dismally of jungle fever, or fall over one of the loftiest precipices and remain for ever tombless and epitaphless, in that lone solitude where mosquitoes cease from troubling, and scrub hens are never at rest. These prophets of imaginary disaster will do well to follow the example of the Hibernian prisoner who was unable to say if he was guilty until he had heard the evidence. ...

In the afternoon of the 16th we arrived at the foot of Mount Toressa, on the bank of a splendid creek, containing a large stream of natural baths, cut clean out of the solid rock.

The camp here was to be our base of supplies during the whole time on the Bellenden Ker Range. We were at the head of a narrow valley, with Toressa (2600ft.) on one and the Coast Range, over 3000ft., on the other.

This was the last point to which the horses could be taken, all beyond being only accessible on foot.

When the horses were unloaded and the camps fixed we went down to the creek to bathe. While seated on a rock in the middle in Adamite costume, there was a wild splash in the pool below me, and there rose to the surface a mysterious form that might be either Neptune or the bunyip! Immortal Powers! It had the same effect on me as the spirit that appeared to Job.

> *"Along my bones the creeping flesh did quake,*
> *And as my damp hair stiffened thus it spake,"*
> *"Behold the Colonial Botanist!"*

And then there came another splash, and the museum zoologist rose from the depths and briefly remarked "Hooray!"

This was the first appearance of the scientists in their great back action double splash natatorial feats, and certainly the agility they displayed and the observations they made, and the hilarious levity of their general proceedings, seemed to be a truly sublime performance by gentlemen of their regular habits and usually grave and reverend demeanour. But the glories of that bath were enough to send any man into temporary oblivion of all but his own delight.

About sunset we had supper. There was no regular cook in the camp, the bulk of the cooking all through the expedition falling to my share, ably assisted by Mr.

Bailey during the manufacture of porridge. I believe he had already a dark suspicion that he was to be fed on porridge all through the trip. Whether this arose from his knowledge of Caledonian habits, or was caused by a sight of the formidable array of bags of oatmeal in camp, is a question not yet fully explained.

Next morning we had breakfast at 7 o'clock, Mr. Bailey personally superintending the porridge, which he stirred with a stick cut from an adjoining Eucalyptus corymbosa. Previous to this trip I would have called it bloodwood.

Then came the adjustment of packs and the selection of all things most urgently required. Each boy took about 50lb., Whelan and myself carrying 40lb. besides our guns and ammunition. Mr. Broadbent and Harold also took their share, and Mr. Bailey carried a handbag and his specimen satchel.

On a lovely morning we crossed the creek and started up the long grass-covered lightly timbered slopes of Barnard's Spur, all the peaks of Wooroonooran [aboriginal name for the Bellenden-Ker Range] rising ahead outlined against the clear blue sky, Sophia on the left, and the Main Range on the right. From the crest of Barnard's Spur we looked down on either side into deep dark scrub-covered ravines. ...

We [subsequently] descended … through dense scrub down 700ft. on a very deep descent into the junction of the two creeks at the WHELANIAN POOLS.

This was the site chosen for our second base of supplies, between the first camp and the top of the mountain. The tents were erected on the bare granite rocks, on each side a glorious stream rushing madly down the gorge, and lost in the curving vista far below. Overhead, all round towered the tall steep mountains, covered by magnificent vegetation.
The intention was to allow Mr. Bailey and Mr. Broadbent to collect here for a couple of days before starting up the mountain, and to enable the boys to bring up more supplies from the lower camp. The first night here was the first and last occasion on which I attempted to compose a poem.

It was written in emulation of that heroic youth who carried the excelsior banner among the Alpine avalanches. [Referring to Excelsior by Henry Wadsworth Longfellow (1841).]

The influence of the companionship of the Colonial Botanist will be traced here and there by the observant reader.

The shades of night were falling fast,
As o'er the mountain summit passed
A botanist man, extremely nice,
Who bore a plant with strange device,
"Dendrobium Hispidium." [D. hispidum]

His brow was stern, his beard below
Looked white as the Antarctic snow,
And like a silver bugle rung
That weirdly scientific tongue,
"Pogonatherum saccharoideum."

In tall old trees he saw the bright
Orchidian blossoms, pink and white.
Above the spectral mosses shone,
And from his lips escaped a groan,
"Bulbophyllum purpurascens."

"Try not to climb," the young man said,
"Beware the loose rocks overhead;
That granite creek is deep and wide."
But loud that fearless voice replied,
"Polypodium suba[u]riculatum."

"Oh stay," the leader said, "and rest
A half-hour on this turkey's nest;"
A tear stole slowly from his eye,
But still he answered with a sigh,
"Acrosticum neglectum."

"Beware of every snake you see,

Beware the awful stinging tree,
Beware where cry[p]togams you seek,"
A voice replied across the creek,
"Alsophila Rebeceae." [A. rebeccae]

At midday there as in the shade
The pious men of that brigade
Uttered a brief impromptu prayer,
A voice called through the startled air
"Hymenophyllum Javanicum."

A botanist in the evening fog
Was found beside a bean-tree log,
Still grasping like a patent vice
A plant which bore the strange device
"Bulbophyliium nematopodon." [Bulbophyllum nematopodum]

There in the twilight cold and gray
So peacefully serene he lay,
But at this stage—if not before—
Two wild-eyed men with excess swore,
"We'll kill you, Bailey!"

From this stage henceforward the reader will find we had other work than poetry to meditate upon, and heights to climb far above Parnassus and the Heliconian Spring."

In this same article I noted that Meston, as had Sayer, erroneously reported that the Bellenden-Ker Range was named by Flinders – it was Philip Parker King following a request by Allan Cunningham to do so – and as you will have noted, Meston (or was it the typesetter) understandably struggled with the spelling of botanical names. None of which is important, we all make mistakes, but I disliked his contention, forcibly expressed elsewhere, that Sayer had never reached the summit of Mt Bellenden-Ker. Charles French, a cousin of Sayer, disputed Meston's assertion in the Brisbane Courier on two occasions (French 1889 a, b) and was rather convincing. Indeed, I was happy recently to read in Worboys (2017, p. 77) "First specimen collected of *Rhododendron lochiae* from Mt Bellenden Ker in 130 years".

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The Officer family of 'Zara'

Peter Wilson *National Herbarium of New South Wales*

There are numerous specimens attributed to 'E. Officer' in herbaria, collected in the first two decades of last century. Many were collected on the family property 'Zara', which is located c. 13 km NW of Wanganella, New South Wales. There are just over 400 specimens held at NSW, and a few at MEL, mostly collected between 1902 and 1922. It turns out that there were two people named 'E. Officer': Ernest Officer and his sister Edith. Both Ernest and Edith were known for their interest in native plants.

Ernest and Edith were two of the twelve surviving children of William Officer (1835–1913) and his wife Mary Grace, née Hebden (1845–1908). William Officer, the son of a prominent Tasmanian politician, purchased the property in 1860 some years before he and Mary Grace were married in Toorak in February 1866. The property remained in family hands until 1927, when it was sold for around £250,000, described as "the biggest transaction of the kind in recent years." (1) The sale of the property appears to have occurred after the death of William's eldest son, George Officer, who died on January 15, 1927, aged 59.

Edith Officer

An online account of history of the Officer family quotes Ernest Officer's son Colin on the life of his aunt:

> 'Edith Officer was born on 19 December, 1872, and died on 4 August, 1908. Educated privately, then at Burnley Horticultural School for Women. Edith and my father Ernest were most interested in Australian native plants, and Edith certainly grew them at Zara around 1900 or earlier. She was still remembered for this in Deniliquin [Deniliquin Historical Society] in quite recent years. Edith was strong minded enough to overcome the patriarchy (or was it matriarchy?) and start a nursing course at the Alfred Hospital. Here unfortunately she developed an infection from which she died. Unmarried.' (2)

Notice of her death in Punch tells us that she 'was a nurse in the Alfred Hospital, where she was very much beloved by all the patients with whom she came in contact. She was a very pretty, fair girl, and possessed of a particularly sweet manner' and that the infection that caused her death was typhoid (3).

Above Ernest Officer, date unknown. Source: *The North Midland Times* January 15, 1937

Ernest Officer

Ernest, the second surviving son of William and Mary, was born on 29 December 1870, at Zara, and died on 1 December 1936, at his home in Toorak, Victoria. According to his obituary in *The Age*, he "was educat-

ed at Geelong Grammar School and Trinity College, Melbourne University, where he graduated Master of Arts and studied law for two years before returning to Zara and giving his whole attention to pastoral affairs." (4) After the property was sold in 1927, he moved to Melbourne to live. Ernest married late in life (May, 1923) to Doris Lyne Veale, whose Wikipedia page notes him as "an English-Australian physician and paediatrician," (5), and an accomplished woman who was presented at Court in London (6).

Ernest Officer and the Michael Terry Expedition

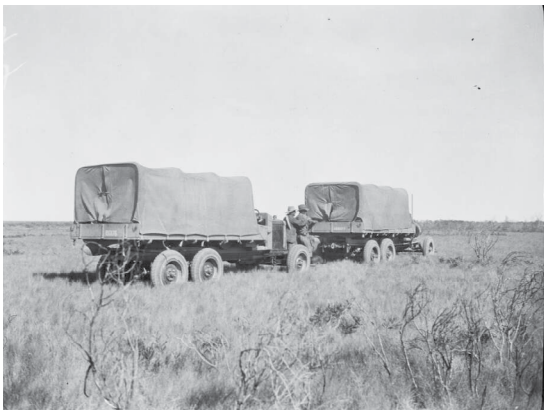
In 1928, Ernest joined the Michael Terry Expedition. Michael Terry was born in Britain in 1899 and, after a stint in the Royal Navy moved to Australia in 1919. He made his name as an adventurer in 1923 when he and a friend drove from Winton, Queensland, to Broome, Western Australia, in a 1913 T-model Ford. Terry is said to have made numerous trips to Central Australia many of which were privately financed by mining companies undertaking exploration. (7) The 1928 expedition seems to have had the same objective since the *Adelaide Advertiser* said that its purpose was to 'study matters relating to the customs of the natives, botany, zoology and minerals' in northern Australia (8).

The Terry Expedition left Fremantle on April 27, 1928, by the motor vessel *Koolinda*, for the north-west of Western Australia and was equipped with two six-wheeled Morris trucks. Terry planned to traverse the country between Broome and the Northern Territory and, from there, travel through Central Australia to reach Adelaide around the end of the year. The expedition team consisted of 'Mr. Ernest Officer (of Riverina, botanist), Mr. L. Birks (Adelaide, engineer). Mr. Michael Terry (leader), and Mr. Tom Campbell (of Kalgoorlie, prospector)' (8).

Outcomes from Ernest's participation in this expedition:

- Michael Terry named Officer Hill, in Tanami Desert after Ernest (9)

Tom Campbell and Ernest Officer at Eil Eil Spring, Western Australia during the Michael Terry Expedition, 1928. Photo by Michael Terry. Source: Trove, National Library of Australia.



Left Ernest Officer and Tom Campbell building a cairn in the Mount Morris region, Western Australia during the Michael Terry Expedition, 1928. **Above** Two Morris Commercial trucks on the Michael Terry Expedition in Western Australia, 1928. Photos by Michael Terry. Source: Trove, National Library of Australia.

- Michael Terry and Ernest Officer applied for mining leases in the Tanami (10)
- Ernest made at least 44 collections while on the Terry Expedition. According to AVH, all but one is held at the Melbourne Herbarium; mostly tagged as 'Ex Herb. W.R.A. Baker'. Baker worked at Royal Botanic Gardens, Melbourne, for more than 40 years where he served as Keeper of the Herbarium and the Museum of Economic Botany,

Botanical legacy of Edith and Ernest Officer

- Edith Officer collected the type of *Podolepis cupulata* Maiden & Betche (Oct. 1903)
- Ernest Officer collected the type of *Kochia cheelii* R.H.Anderson (Dec. 1913)
- Ernest Officer collected the type of *Frankenia latior* Sprague & Summerh. (Mar. 1917)
- Edith's collections were also cited by J.H. Maiden in *The Forest Flora of New South Wales* Volume 7 (Parts 61–70) under *Acacia oswaldii* (Part 63, page 118) and *Acacia stenophylla* (Part 64, page 187)

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(3) Web ref.: https://trove.nla.gov.au/newspaper/article/176018152/20529170

(4) Web ref.: https://trove.nla.gov.au/newspaper/article/205937453

(5) Web ref.: https://en.wikipedia.org/wiki/Doris_Lyne_Officer

(6) Web ref.: https://trove.nla.gov.au/newspaper/article/101686723

(7) Web ref.: https://adb.anu.edu.au/biography/terry-michael-15670 [accessed 16 Aug 2023]

(8) Web ref.: https://trove.nla.gov.au/newspaper/article/49376718

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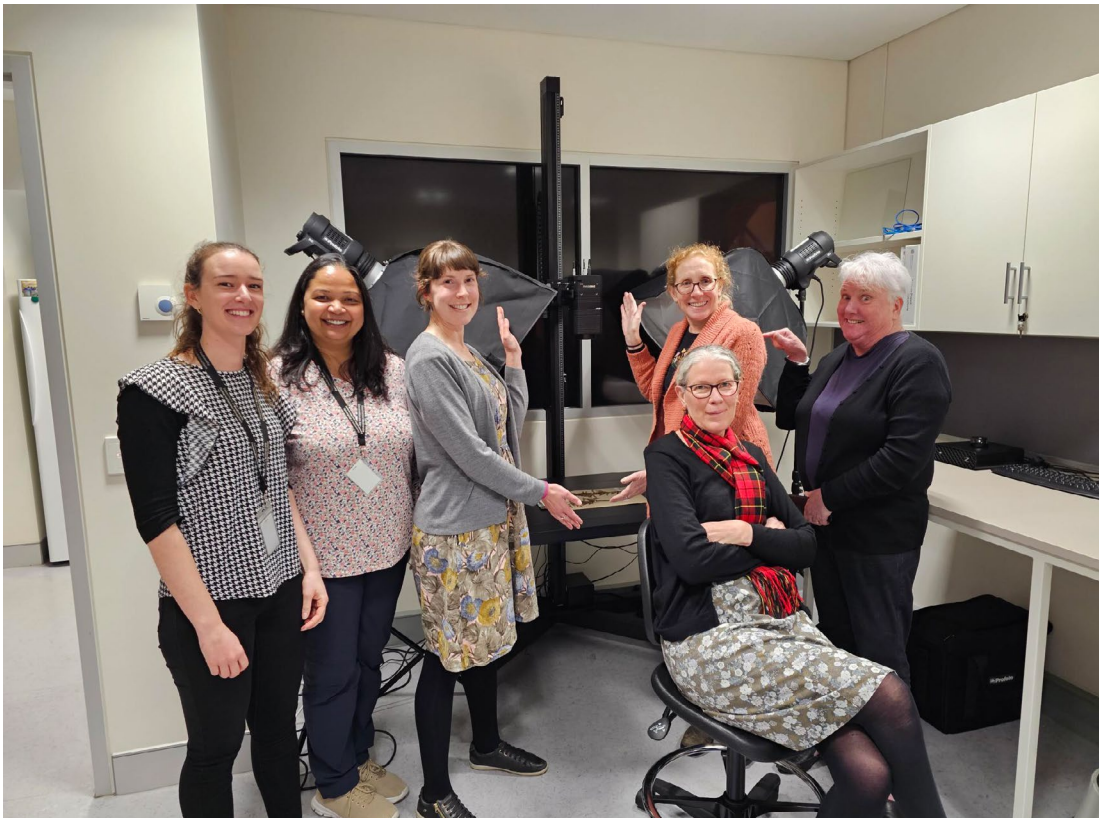
Flash, beep, you're captured: New camera at PERTH

Shelley James Western Australian Herbarium

The Western Australian Herbarium has welcomed its latest addition to the team — a new high resolution 150MB PhaseOne imaging system. Time to image the collection! Thanks to C.R.Kennedy Imaging for helping us to acquire and set up the system. With the help of keen volunteers, we look forward to delivering images of the entire PERTH collection soon.



Above The new system and a keen team: (left to right) Renee Gugiatti, Supreema Sinha, Julia Percy-Bower, Skye Coffey (seated), Shelley James, and Cheryl Parker.

Sad news from WELT

Te Papa's Botany team (c/o leon.perrie@tepapa.govt.nz)

Patrick Brownsey, long-time curator at the WELT herbarium of the Museum of New Zealand Te Papa Tongarewa, has died after a short illness. He was with his family and very loved. The family have held a private funeral, with the intention of a public memorial in the near future. Pat was expert on the ferns of New Zealand and the southwest Pacific, a prolific collector especially of mosses, an advocate for the museum and its people, and a friend and mentor to many.

Feedback invited for NT flora site

Hi all,

Please find below a link to the survey we have implemented for the FloraNT website as part of the Flora Systems Review. Some of you have already been involved in this and once again thanks!!! This survey is aimed at gaining a wide range of user (or prospective user) feedback on the current functionality of the website and what might be important in the future. It is live now and will be open until the end of November.

https://haveyoursay.nt.gov.au/flora-nt

This survey is being conducted in the context of a broader review of all our flora data systems (Holtze specimen database, VSD site database etc.), how they integrate and how well they suit our (and our stakeholders) needs.

Flora NT is the primary means we have of converting our data into information for public consumption and is an important tool in increasing knowledge and awareness of the plants of the Northern Territory. However, we recognise it is not perfect and are seeking feedback on what works well and what does not work so well in its current form to help guide improvements to the website.

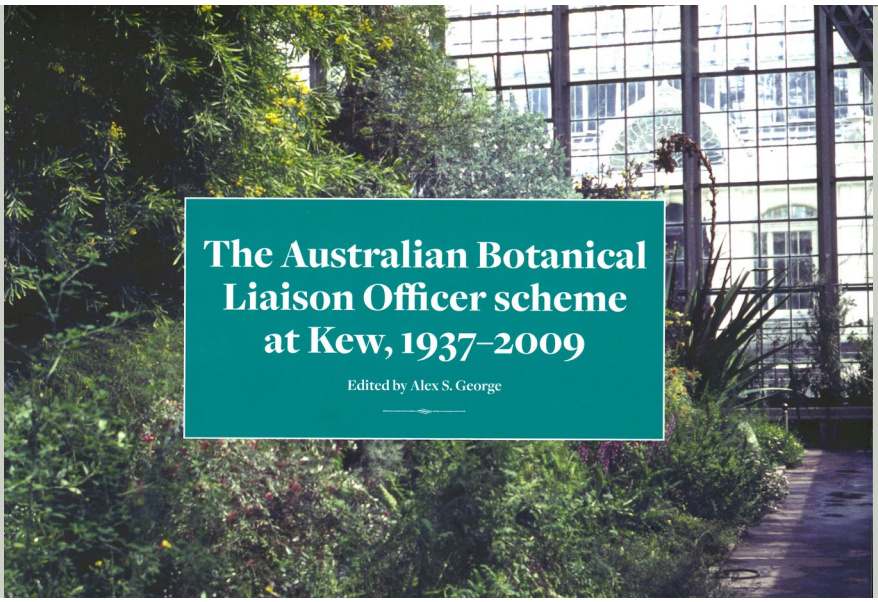
The survey is not long but will be invaluable in helping us evaluate the future direction of our systems so your involvement is encouraged and much appreciated! Please feel free to distribute to your staff, associates and networks that you may know who currently utilise the website (or might like to in the future) and publish to any media feeds that may be appropriate.

Please contact me directly if you have any questions, queries or feedback you would like to provide directly and once again thanks for your help!

Regards,

Nick Cuff

Chief Botanist, Northern Territory Herbarium
Flora and Fauna Division
Department of Environment, Parks and Water Security, Northern Territory Government



New book alert: *The Australian Botanical Liaison Officer scheme at Kew, 1937–2009*

From 1937 to 2009 the Australian Federal, State and Territory Governments, jointly, stationed a succession of botanists at the Royal Botanic Gardens, Kew. Their role was twofold: first, to service inquiries from Australia for information from the vast collections of plant specimens, literature and archives, information not readily accessible here but essential for research on the Australian flora; second, to conduct research on their own special areas of interest.

Fifty-two botanists spent terms averaging a year at Kew (one twice), with visits to other herbaria in Britain and on the Continent. The information gathered supported immeasurably the quality of thousands of scientific books and papers. Further, by updating the nomenclature on specimens (often unchanged since the 19th century), they improved the standard of collections both in the herbaria visited and in Australian herbaria. They formed associations with foreign botanists that often continued in their later careers.

Much history is bound up in the scheme, in the people who held the post, in the progress of Australian systematic botany, and in the progress of Kew itself.

The book contains an essay on the history of the scheme, and an essay on each person who held the post. It is illustrated with photographs of each ABLO, of staff at Kew, and of many aspects of Kew and other herbaria.

Book details:
The Australian Botanical Liaison Officer scheme at Kew, 1937–2009
Edited by Alex George
362 pages, A4 landscape format
Price $90 plus postage
Published by Four Gables Press, Kardinya, Western Australia
Available from Alex George: a.george@murdoch.edu.au

***The Australian Botanical Liaison Officer scheme at Kew, 1937–2009* will be available for purchase at the Biosystematics 2023 Conference in November.**

A review will appear in the December issue of the *ASBS Newsletter*.

International Botanical Congress news

Lizzy Joyce

Planning for the International Botanical Congress in Madrid, July 2024 is well underway, and the website is now up to date with useful information: https://ibcmadrid2024.com/index.php.

The conference boasts an exciting list of invited speakers from around the world addressing a broad range of topics. The list of excursions is also very interesting with a variety of one day and multi-day excursions planned [fancy a six-day sojourn to Tenerife Island, anyone?]. Information about the Nomenclature Section has now also been posted online. The organisers of the IBC are now inviting submissions of abstracts for oral presentations, poster presentations, and satellite meetings and workshops! Online registration is now open with an early registration discount. More details can be found below, and on the conference website.

Abstracts

See the guidelines for abstract preparation here and the list of 233 accepted symposia here. Prepare your abstract according to the specifications and select 1-3 symposia that are the most appropriate for your presentation. The organizers intend to have abstract acceptance decisions completed before the early registration deadline.

Abstract deadline for oral presentations: November 30, 2023

Abstract deadline for poster presentations: February 1, 2024.

Registration

Register now to receive the early registration discount, which expires on 29 February 2024. Registration information is found here.

If you have not already done so, be sure to sign up for newsletters from the IBC organisers to stay up to date on IBC news. The link for this is on the IBC homepage.

ASBS symposia

A number of ASBS members are organising symposia at next year's XX International Botanical Congress in Madrid, Spain, as summarised on the following page. Be sure to check them out!

Useful links:

https://ibcmadrid2024.com/index.php?seccion=scientificArea&subSeccion=abstractGuidelines
https://ibcmadrid2024.com/index.php?seccion=scientificArea&subSeccion=symposiums
https://ibcmadrid2024.com/index.php?seccion=registrationArea&subSeccion=registrationInfo

Title	Topic 1	Topic 2	Topic 3	Organisers
A Continental Scale Consortium Approach To Building Genomics Capacity And Resources: Genomics For Australian Plants - Session 1	Conservation Biology	Phylogenetics and Phylogenomics	Systematics	Lalita Simpson *et al.*
Biogeography And Diversification Of Intercontinental Tropical Plant Diversity	Macroevolution	Biogeography	Phylogenetics and Phylogenomics	Francis Nge *et al.*
Comparative Spatial Phylogenetics Of Mediterranean-Type Floras Of The World	Phylogenetics and Phylogenomics	Biogeography / Phylogeography	Conservation Biology	Mario Fernández-Mazuecos & Andrew Thornhill *et al.*
Evolutionary History Of Arid Floras And Their Underlying Biological Survival Mechanisms	Biogeography / Phylogeography	Phylogenetics and Phylogenomics	Macroevolution	Anze Zerdoner Calasan *et al.*
Interdisciplinary Approaches In The Visual Arts And The Botanical Sciences	Education and Outreach	Botanical History	Paleobotany	Ashley Hamersma & Patricia Chan *et al.*
Mechanisms Underlying Plant Diversity Patterns In The East Asian–Australasian Region	Biogeography / Phylogeography	Paleobotany / Archaeobotany	Systematics	Buntarou Kusumoto & Daniel J. Murphy *et al.*
Orchid Phylogenomics: Diversification, Trait Evolution And Biogeography I	Phylogenetics and Phylogenomics	Systematics and Taxonomy	Macroevolution	Katharina Nargar *et al.*
Orchid Phylogenomics: Diversification, Trait Evolution And Biogeography II	Phylogenetics and Phylogenomics	Systematics	Macroevolution	Katharina Nargar *et al.*
Sapindales: Understanding Angiosperm Evolution By Integration Across Data, Space And Time	Biogeography Phylogeography	Phylogenetics and Phylogenomics	Systematics	Elizabeth Joyce *et al.*

Invitation to NZ Chapter's Anniversary Celebration

Dear botanical colleagues,

It is my great pleasure to invite you to the New Zealand ASBS chapter's celebration of the 50th anniversary of the Australasian Systematic Botany Society! The event will be held at Allan Herbarium (CHR), Manaaki Whenua - Landcare Research, Lincoln and on Microsoft Teams on Wednesday 6 December. It will be held in conjunction with the New Zealand National Herbarium Network (NZNHN) AGM and workshop. A summary of the NZNHN program is below, with the relevant ONLINE/VIRTUAL event highlighted in orange:

6 December 2023

10:00 am start of the NZNHN AGM (NZNHN members)
12:30 Lunch (ASBS and NZNHN members combined)
1:30 pm Celebration including Ilse's presentation and other in person/online greetings etc. **(ONLINE 1:30 – 2:15)**
2:00 pm Cake!
2:30 pm Herbarium tour/glasshouse Tour3:30 pm or 4:00 pm Afternoon tea

7 December 2023

All day NZNHN Disaster Preparedness workshop (NZNHN members)

This invitation is for ONLINE attendance only. If you would like to attend the celebration virtually, please contact Ines Schönberger for the Teams link at SchonbergerI@landcareresearch.co.nz. For IN PERSON attendance, please respond to the other invitation or ask Ines to send you one. For those attending online, the livestream on Teams will commence at 1:30. Longtime ASBS member and Senior Researcher (Botanist) at Allan Herbarium, Ilse Breitwieser, will say some brief words about the society and this historic event. The floor will be opened for anyone online or in person who would like to say a few words on the theme of "My birthday wish for ASBS..." An anniversary cake will be cut and served around 2:00 pm. The online stream will then conclude.

We would like to thank ASBS for generously supporting this event by funding the lunch catering and cake on 6 Dec, and the NZNHN Disaster Preparedness workshop on 7 Dec.

What we need from you now:

- An RSVP to this invite as soon as possible, confirming your attendance ONLINE from 1:30 – 2:15 pm on Wed 6 December (NB if you are attending in person, please use the other IN PERSON invitation coming shortly or ask Ines to send you one).
- Some preparation for what you would like to say on the day on the theme "My birthday wish for ASBS" (optional).

Please feel free to forward this invitation to other current and future members of ASBS who may wish to attend VIRTUALLY/ONLINE.

Ngā mihi,

Heidi Meudt
ASBS Secretary and New Zealand Chapter convener

In the News

The exposed roots and fruits of *Pinanga subterranea*. Photo: Royal Botanic Gardens, Kew/The Guardian

Online and in the media

Please send me anything that you think is of interest for the ASBS community, otherwise the news is just what I see on Twitter/X — Todd McLay todd.mclay@gmail.com.

'Mind-boggling' palm that flowers and fruits underground discovered

In the lush rainforests of Borneo, scientists have unveiled an astounding botanical discovery – *Pinanga subterranea*, a previously unknown palm species capable of flowering and bearing fruit underground. While the identity of its pollinators remains a mystery, bearded pigs have been found to play a crucial role in consuming and dispersing the palm's fruit.

Link to story: https://tinyurl.com/m73cyrpn

American man willingly stings himself with gympie-gympie

What would compel someone to do this? Clicks, I guess.

Link to video: https://www.youtube.com/watch?v=VF-mKXc8Fyc

Above *Dendrocnide* v. Coyote Peterson. Source: YouTube.

Threatened Species Day cake

Threatened Species Day Bake-Off is a delightful annual event where bakers create treats inspired by endangered species, raising both awareness and funds for conservation efforts. Plants are often under-represented, but this *Zieria murphyi* cake is a stand-out!

Link to story: https://tinyurl.com/2k7d6stm

Zieria murphyi cake by Sarah McInnes

Ancient clonal tree, King's lomatia, excites scientists in Tassie

Boasting a tiny wild habitat of just 1.2 square kilometers in the remote mountains of south-western Tasmania is King's lomatia, *Lomatia tasmanica*. This species remains a puzzle due to its genetic uniformity and the absence of sexual reproduction, presenting a fascinating case of survival through climate shifts and ice ages, but rendering it critically endangered in its secluded kingdom.

Link to story: https://tinyurl.com/hyuxwerb

Ilma Grace Stone honoured

Bryologist Ilma Grace Stone (1913–2001) has been commemorated with the place name, Ilma Stone Way in the ACT suburb of Macnamara. The naming theme for the new ACT suburb of Macnamara is Science and Technology, the purpose being to posthumously commemorate the names of ten people for their contributions to Australia through their work in science or technology. Find out more about Ilma Grace Stone's contribution to bryology: Ilma Grace Stone (1913–2001): *Journal of Bryology*: Vol 24, No 2 https://doi.org/10.1179/jbr.2002.24.2.173.

Scientists rush to save Australia's loneliest tree from the brink of extinction

The Mongarlowe mallee, once widespread in southern New South Wales, now teeters on the brink of extinction, with just six known survivors, scattered too far apart for natural reproduction. Conservation efforts led by the NSW government's 'Saving our Species' team include hand cross-pollination, with the hope of repopulating the wild and eventually offering gardeners the chance to grow this unique species.

Link to story: https://tinyurl.com/7knhunm6


The Mongarlowe mallee. Photo: Craig Allen/ABC News

Farmers defying dryland salinity crisis with salt-tolerant vegetables in WA

A farm in Western Australia is growing halophytes on degraded land affected by dryland salinity, with the salt-tolerant plants being supplied to top restaurants in Australia. The initiative has garnered significant attention, with exponential growth in orders and a variety of salt-tolerant plant species, including samphire, karkalla, sea purslane, warrigal greens, and crystal iceplant, being cultivated.

Link to story: https://tinyurl.com/ynwv9x7a

Exposing Australia's online trade in pest plants

There is an extensive online trade of invasive plants and prohibited weeds in Australia, facilitated by a lack of consistent regulations and public awareness, posing significant threats to the environment, agriculture, and native cultures. This research uncovered 155 prohibited plant species advertised online, constituting 12.5% of all prohibited plants in Australia, emphasizing the need for enhanced online monitoring, e-commerce platform cooperation, and public awareness to combat the issue and align trade prohibitions across jurisdictions.

Link to story: https://tinyurl.com/bdt3z43f
Link to the paper: https://neobiota.pensoft.net/article/104472/

Papers and publications

Articles can be provided by request to Todd at todd.mclay@gmail.com.

How to fill the biodiversity data gap: fieldwork or curation?

To improve biodiversity data is it better to collect more or to curate more? This study, using the Flora de Bogotá project, found that curating collections increased the number of records per species and expanded spatial coverage (and decreased richness through removal of errors and synonyms). Fieldwork contributed to a slight increase in species richness but was less efficient. This suggests that focusing on curatorial work first can be a cost-effective way to improve biodiversity

data quality and identify gaps, and allows for more targeted and efficient fieldwork.

Read the paper: Vargas *et al.* (2023) How to fill the biodiversity data gap: Is it better to invest in fieldwork or curation? *Plant Diversity* https://doi.org/10.1016/j.pld.2023.06.003

Identification of herbarium specimen images using deep learning

Cutting-edge computer vision techniques were applied to thousands of imaged herbarium specimens to train a model to extract text and trait data from herbarium specimen images. Using a YOLOv5 and 3371 University of Melbourne Herbarium images, the model was able to achieve high precision and recall on eleven different herbarium sheet components, including institutional labels, specimen name, and colour swatches. The model was also tested on images from other herbaria.

Read the paper: Thompson *et al.* (2023) Identification of herbarium specimen sheet components from high-resolution images using deep learning *Ecology and Evolution.* https://doi.org/10.1002/ece3.10395

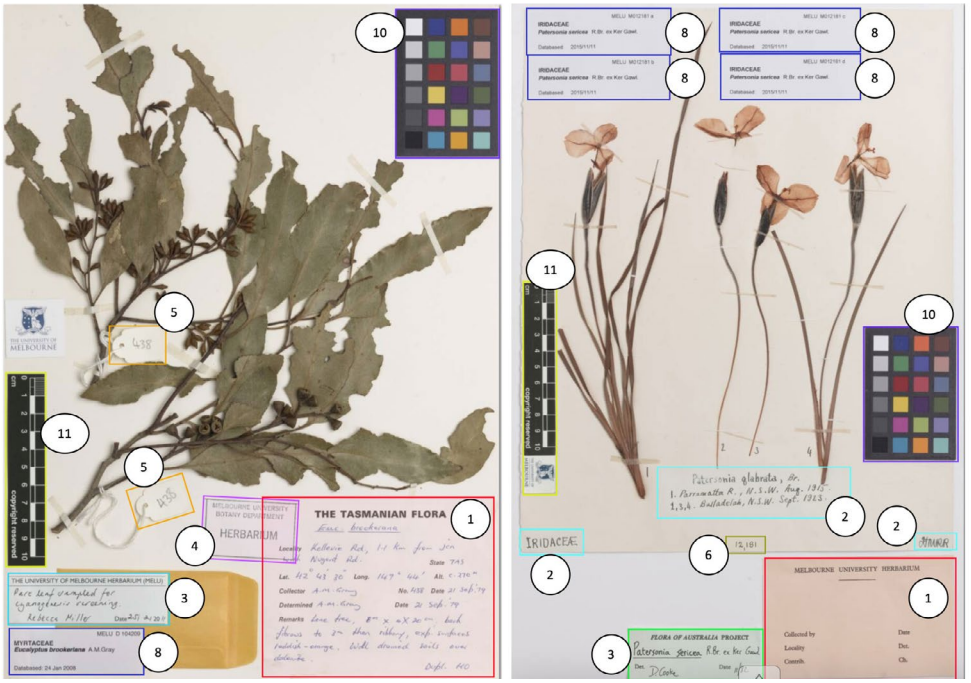
Sexual systems of *Solanum* in the Australian monsoon tropics

To understand the impact of sexual systems on genetic diversity, Cantley et al. compared closely related species of *Solanum* from Northern Australia with different sexual systems (including dioecy and hermaphroditism. They established a population genetics baseline for species with different sexual systems and revealed that dioecious species exhibit less genetic structure and greater admixture than cosexual species in the same locations

Read the paper: Cantley *et al.* (2023) A foundational population genetics investigation of the sexual systems of *Solanum* (Solanaceae) in the Australian monsoon tropics suggests dioecious taxa may benefit from increased genetic admixture via obligate outcrossing. *Plants.* https://www.mdpi.com/2223-7747/12/11/2200

Ancient DNA genomics and the renaissance of herbaria

As part of a Science special issue on 'Ancient DNA', this article outlines how herbaria are increasingly valuable for genomic research,



Above The 11 components of herbarium sheets identified through deep learning by Thompson *et al.* (2023). Image: Thompson *et al.* (2023)

with DNA from preserved specimens offering insights into plant evolution and ecological changes, presenting opportunities for combining modern and historical data to understand plant community evolution and inform conservation efforts in the face of environmental challenges.

Read the paper: Burbano and Gutarker (2023) *Science*. https://doi.org/10.1126/science.adi1180

Global plant diversity and distribution – joint Special Collection

Two journals, *New Phytologist* and *Plants, People, Planet*, collaborated on a joint Special Collection 'Global plant diversity and distribution'. This Collection aims to study global and regional patterns of plant diversity and distribution, assess current risks to plant diversity, and guide future research and conservation efforts.

Browse the Collection: https://nph.onlinelibrary.wiley.com/hub/global-plant-diversity-and-distribution-special-collection

Some highlights below.

The big four of plant taxonomy – a comparison of global checklists of vascular plant names

This study compared four vascular plants global checklists (*Leipzig Catalogue of Vascular Plants, World Checklist of Vascular Plants, World Flora Online*, and *WorldPlants*) with *The Plant List* (TPL) to assess differences in taxon names and accepted names. They found substantial discrepancies among the checklists, with approximately 60% of plant names being consistent. These discrepancies exhibit geographic variation and substantial phylogenetic variability across plant families.

Read the paper: Schellenberger *et al.* (2023) *New Phytologist* https://nph.onlinelibrary.wiley.com/doi/10.1111/nph.18961

Three in four undescribed plant species are threatened with extinction

Revealing a concerning trend, plant species described in 2020 are estimated to face a high risk of being classified as threatened, with risk intensifying over time, particularly for Endangered and Critically Endangered categories. This mirrors similar trends in vertebrates, emphasizing the importance of thorough assessments for newly described plant species due to their restricted distribution and ongoing population decline. I think this pattern likely holds up in Australia (or might be worse?).

Read the paper: Brown *et al.* (2023) *New Phytologist* https://nph.onlinelibrary.wiley.com/doi/full/10.1111/nph.19214

Phylogenomics sheds new light on the drivers behind a long-lasting systematic riddle: the figwort family Scrophulariaceae

A well-supported and well-sampled phylogeny of Scrophulariaceae, including nearly 900 nuclear genes and 87% of the genera. The family underwent significant diversification about 60 million years ago in Gondwanan landmasses, and most modern tribes are of Southern African origin, with exceptions in the Americas and Australia

Read the paper: Villaverde *et al.* (2023) *New Phytologist* https://nph.onlinelibrary.wiley.com/doi/10.1111/nph.18845

Eremophila lachnocalyx (Scrophulariaceae). Photo: Wikimedia Commons.

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
Masters students		
Aiden Webb	The University of Melbourne	aidenw@student.unimelb.edu.au
Jessica Bruce	Edith Cowan University	jessica.l.bruce90@gmail.com
Leo Carlo Sarion	University of Auckland	lsar983@aucklanduni.ac.nz
Molly Bloomfield	The University of Melbourne	bloomfieldm@student.unimelb.edu.au
PhD students		
Catherine Clowes	The University of Melbourne	cclowes@student.unimelb.edu.au
Grace Boxshall	The University of Melbourne	boxshall@student.unimelb.edu.au
Matthew Adeleye	Australian National University	matthew.adeleye@anu.edu.au
Patrick Fahey	The University of Melbourne	psfahey@student.unimelb.edu.au
Paulo Baleeiro	The University of Queensland	p.baleeirosouza@uq.edu.au
Tombo Warra	James Cook University	tombo.warra@my.jcu.edu.au
Zoe Bloesch	The University of New South Wales	zoe.bloesch1@gmail.com
Ryan P. O'Donnell	Australian National University	Ryan.ODonnell@anu.edu.au
Helen Kennedy	University of New England	hkenned6@myune.edu.au
Andrew McDougall	The University of Adelaide	andrew.mcdougall@adelaide.edu.au
Duncan Nicol	The University of Otago	d.nicol001@gmail.com
Early Career Researchers		
Jessie Prebble	Manaaki Whenua - Landcare Research	prebblej@landcareresearch.co.nz
Lalita Simpson	Australian Tropical Herbarium	lalita.simpson1@jcu.edu.au
Maren Preuss	Victoria University of Wellington	Maren.Preuss@vuw.ac.nz
Tim Hammer	The University of Adelaide	timothy.hammer@adelaide.edu.au
Lizzy Joyce	Ludwig-Maximillians-Universität München	E.Joyce@lmu.de
Janet Gagul	University of Papua New Guinea	gagulj@upng.ac.pg
Francis J. Nge	University of Western Australia	francisnge@yahoo.com
Tim Collins	NSW Department of Planning and Environment	tim.collins@aapt.net.au

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.

Printing Printed by Create Print & Design, Cairns.

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.

The ASBS annual membership subscription is AUD $45, and a concessional rate of AUD $25 is offered to full-time students, retirees and unemployed people. Payment may be by direct credit, credit card or by cheque made out to Australasian Systematic Botany Society Inc., and remitted to the Treasurer. All changes of address should be sent directly to the Treasurer as well.

Chapter conveners

Adelaide
Robyn Barker
State Herbarium of SA
(+618)/(08) 8222 9348
robyn.barker@sa.gov.au

Armidale
Andrew Thornhill
University of New England
andrew.thornhill@une.edu.au

Brisbane
Gill Brown
Queensland Herbarium
(+617)/(07) 3199 7699
Gillian.Brown@des.qld.gov.au

Cairns
Katharina Nargar
Australian Tropical Herbarium, CSIRO
(+617)/(07) 4232 1686
katharina.nargar@csiro.au

Canberra
Alexander Schmidt-Lebuhn
CSIRO
(+612)/(02) 6246 5498
Alexander.S-L@csiro.au

Christchurch
Rob Smissen
Allan Herbarium
(+643)/(03) 321 9803
smissenr@landcareresearch.co.nz

Darwin
Ian Cowie
Northern Territory Herbarium
(+618)/(08) 8999 4511
ian.cowie@nt.gov.au

Hobart
Miguel de Salas
Tasmanian Herbarium
(+613)/(03) 6226 1806
Miguel.deSalas@tmag.tas.gov.au

Melbourne
Frank Udovicic
National Herbarium of Victoria
(+613)/(03) 9252 2313
frank.udovicic@rbg.vic.gov.au

Perth
Juliet Wege
Western Australian Herbarium
(+618)/(08) 9219 9145
Juliet.Wege@dbca.wa.gov.au

Papua New Guinea
Janet Gagul
The University of Papua New Guinea
(+675) 7232 9121
gagulj@upng.ac.pg

Sydney
Peter Weston
National Herbarium of NSW
(+612)/(02) 9231 8111
peter.weston@rbgsyd.nsw.gov.au

Wellington
Heidi Meudt
Museum of New Zealand Te Papa Tongarewa
(+644)/(04) 381 7127
HeidiM@tepapa.govt.nz

Major Australasian herbaria and systematics institutions contacts

AD
(+618)/(08) 8222 9307
stateherbsa@sa.gov.au

HO
(+613)/(03) 6226 2635
herbarium@tmag.tas.gov.au

MEL
(+613)/(03) 9252 2300
pina.milne@rbg.vic.gov.au

NSW
(+612)/(02) 9231 8111
herbarium.nsw@rbgsyd.nsw.gov.au

CANB
(+612)/(02) 6246 5084
cpbr-info@anbg.gov.au

BRI
(+617)/(07) 3199 7699
queensland.herbarium@qld.gov.au

CNS
(+617)/(07) 4232 1837
enquiry@ath.org.au

PERTH
(+618)/(08) 9219 9130
herbarium@dbca.wa.gov.au

NT
(+618)/(08) 8951 8791
herbarium@nt.gov.au

DNA
(+618)/(08) 8999 4516
herbarium@nt.gov.au

AK
(+649)/(09) 306 7060
info@aucklandmuseum.com

CHR
(+643)/(03) 321 9999
schonbergeri@landcareresearch.co.nz

WELT
+64 21 406 310
bridget.hatton@tepapa.govt.nz

Australian Biological Resources Study (ABRS)
(+612)/(02) 6250 9417
abrs@environment.gov.au

Council of Heads of Australasian Herbaria (CHAH)
Chair: Carlos Lehnebach
chair@chah.org.au

Australian University Herbaria
Rep.: Kristina Lemson
Edith Cown University
k.lemson@ecu.edu.au

Taxonomy Australia
taxonomyaustralia@science.org.au

ISSN 2204-910X (Digital)
ISSN 1034-1218 (Paper)
$5.00

Cover image: *Dendrobium canaliculatum* R.Br. by Ashley Field