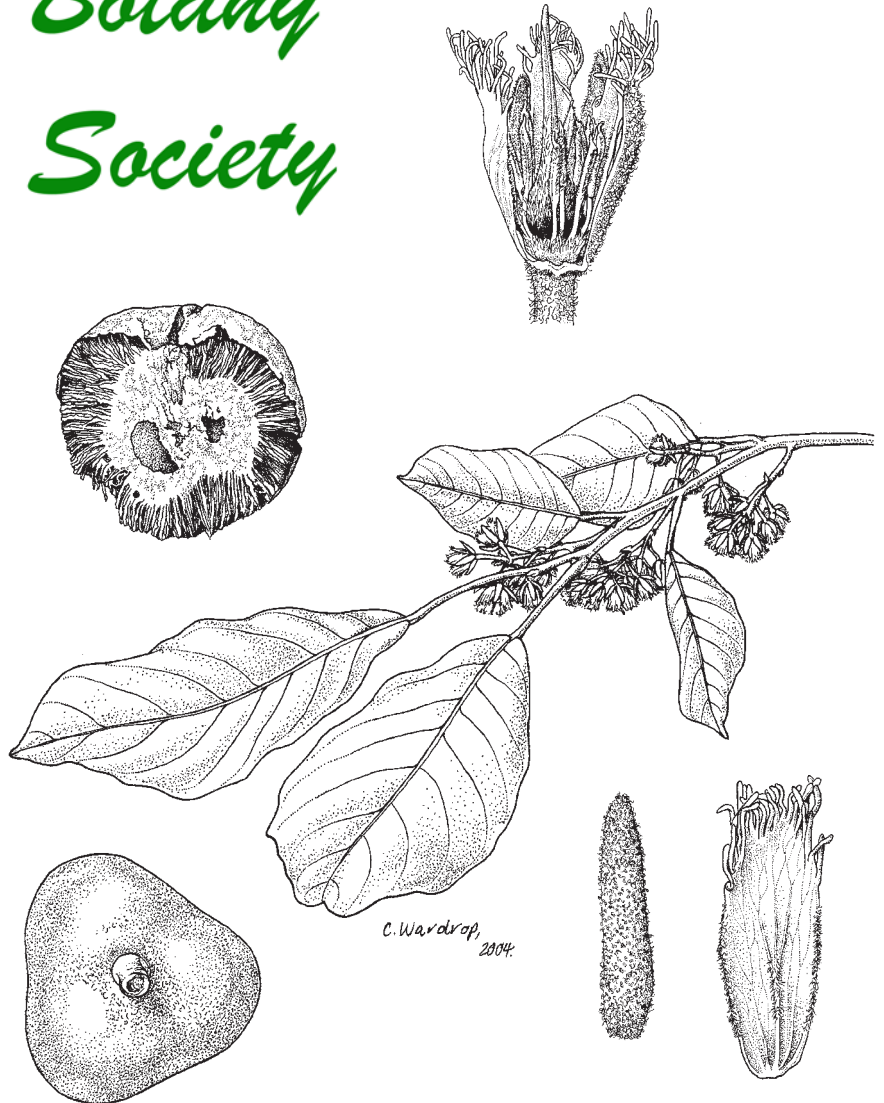


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Cover image: *Elaeocarpus sedentarius* Maynard & Crayn.

Leafy twig with clockwise from top: open flower, petal,
sepal, proximal end of fruit, longitudinally sectioned fruit.
Artist: Catherine Wardrop (NSW).

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From the President

To start I'd like to welcome everyone to 2018 and trust you had a relaxing and peaceful end of year break.

Council

The ASBS Council members who took up their roles from the December 2017 Adelaide meetings have settled in well, and having completed the administrative tasks associated with transfers of responsibility, are functioning collectively at a high level. It's never too early however to look ahead to future Councils. Any interested members are encouraged to think about nominating for the next Council which will take office from the Brisbane meetings in early December. Feel free to contact any of your current office-bearers to get a feel for what's involved. For contact details see the Society webpage (www.asbs.org.au)

Decadal Plan

The writing group is in the latter stages of producing the final draft of the *Decadal Plan for Taxonomy and Biosystematics*. The launch event has been scheduled – 27th April in Canberra. A draft layout has been circulated among the team, and it looks stunning, frankly. One of the communications staff at the Australian Academy of Science (the organisation auspicing the Plan) has gushed about how impressive and compelling is the use case for our discipline, and how cogently it is argued in the Plan. This is very important feedback, as it is those external to our discipline that we need to influence to back us – it's not ourselves we need to convince. As I've said before, the *Thylacoleo*'s share of the credit (to use an indigenous carnivore) for getting to this exciting stage rests with Kevin Thiele as Project Leader, acknowledging that this is our community's document and very many people have made important contributions along the way. The community has laboured long and hard to get to the cusp of the launch and delivering the Plan will be a moment of great pride, and relief! But of course the relief will be brief knowing that most of the real work lies in the implementation phase, which will be a decade long!

Conferences

As preparations continue apace for the ASBS meeting at the Queensland Herbarium in Brisbane this year, members are encouraged to start their

planning now. An update from the organizing committee is provided elsewhere in this issue.

Conferences for the following two years have been pencilled in: Wellington (NZ) in 2019 and Cairns (Qld) in 2020. Wellington is preparing the ground in earnest, including exploring possibilities to meet in conjunction with the New Zealand Plant Conservation Network who are considering holding their annual meetings in Wellington around the same time. That year – 2019 – will of course be the 250th anniversary of Joseph Banks and Daniel Solander's documentation of New Zealand's flora in 1769 and opportunities to commemorate through the conference these momentous achievements and their impacts are being explored.

The following year will be Australia's turn to celebrate the 250th anniversary of Cook's 1770 landings on Australia's east coast. Some ideas already floated for the 2020 Cairns conference include Banks and Solander-themed sessions and possible amphibious field trips that retrace the sea, river and land routes undertaken by the voyagers between Cairns and Cooktown and up the Endeavour River during those c. 50 days in mid 1770. The Endeavour River landing was at least as significant as the universally celebrated Botany Bay landing. Banks and Solander's expeditions there yielded over 310 plant species new to science (vs. c. 130 at Botany Bay), the first collections of many well-known genera such as *Schefflera* and *Lechenaultia*, and encounters with Australian fauna not seen at Botany Bay including large macropods. Here the first records of an Australian language were made, by Cook, through mostly peaceful and respectful interactions with the Indigenous custodians – the Guugu Yimithirr (or Yimidhirr). The word 'kangaroo' is an Anglicisation of the Guugu Yimithirr word 'gangurru'. Here also the first recorded act of reconciliation (following scuffles over ownership of turtles caught by the crew) between Indigenous Australians and Europeans took place, an event that in recent years has become much more deeply appreciated and embraced, especially in the Cooktown area, by Australians of Indigenous and non-Indigenous heritage.

Darren Crayn
President

Current affairs in systematics

Decadal Plan for Taxonomy and Biosystematics in Australia and New Zealand 2018–2027 ready for release

Kevin Thiele

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The *Decadal Plan for Taxonomy and Biosystematics in Australia and New Zealand 2018–2027* has been a long time coming, and is nearly ready for release.

Readers of the *ASBS Newsletter* will recall that the plan to develop a strategic plan for our discipline began at the ASBS meeting in Perth in late 2012. At that time, initial conversations commenced about the best way to bring about a reinvestment in taxonomy and systematics, a reversal of the “death by a thousand cuts” declines in funding that we’ve experienced for many years.

Progress in these conversations was slow at first, but eventually a small working group was formed, which settled on the idea to develop a decade-scale strategic plan covering the whole of biodiversity, living and fossil, eukaryote and protist, marine and terrestrial, and including Australia and New Zealand and their island, marine and Antarctic territories. We then became aware that the Australian Academy of Science has developed decadal plans for a range of sectors of science, and the way forward became clearer. When we were successful in gaining much-needed funding from the Ian Potter Foundation in mid-2017, to commence an intensive project within the Academy, we began to make very substantial progress. Many of you will have participated in the sector-stakeholder meetings last year, or kept abreast of the developing plan through this Newsletter or the presentation at the Adelaide ASBS meeting last November.

The plan will be launched at Parliament House in Canberra on 27 April, with a meeting to immediately follow where we will work on implementation and next steps. No-one should be under any illusions that simply releasing the plan will have an immediate impact. It’s better to see it as a necessary but not sufficient step in achieving our ultimate goal, which is reinvestment in taxonomy and systematics and reinvigoration of our discipline, our institutions and our workforce. The plan is unabashedly positive. We have a great

deal to be proud of as taxonomists and systematics in Australia and New Zealand. Our biodiversity is globally important, we are highly professional and productive, with an excellent history of collaboration and integration. We know that in many respects we lead the world. The plan begins with the premise that we’ve achieved much, then outlines ways in which, with appropriate reinvestment, we can achieve much more.

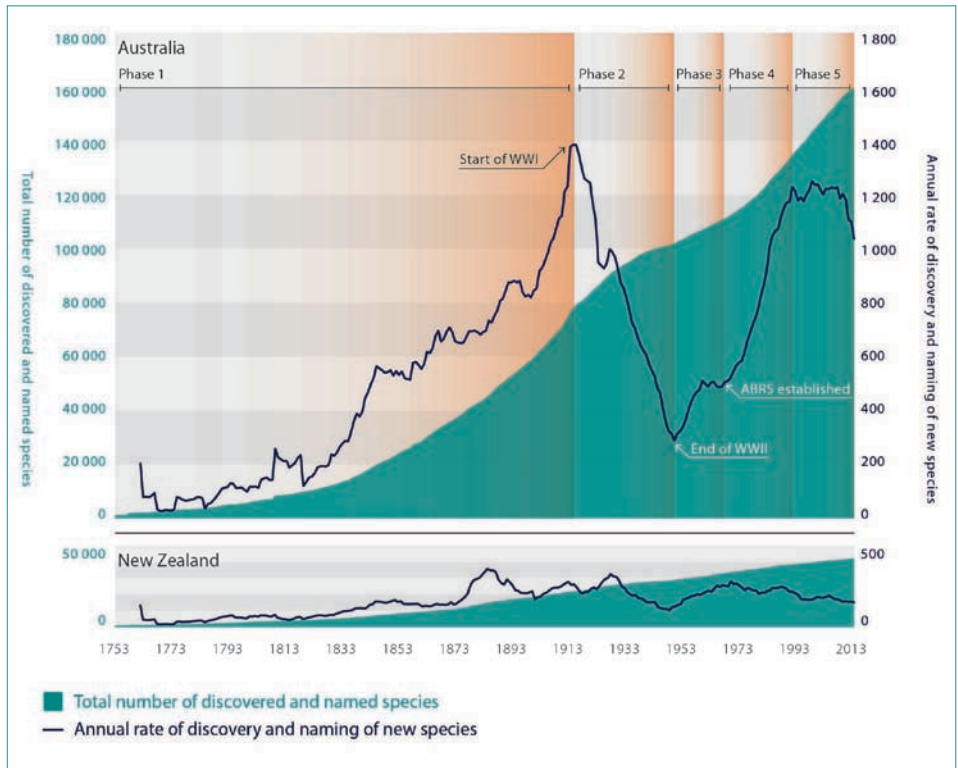
An interesting and important aspect of the plan is the graph we’ve constructed (Fig. 1) showing taxonomic productivity (measured as the rate of accumulation of new species in Australia and New Zealand) over the last 250 years.

I find this extraordinarily interesting, at many levels. The main point for the decadal plan is the obvious upswing in new species that occurred with the establishment of ABRS in Australia in 1973 (a less obvious but still striking thing is the plateau then decline in recent decades as ABRS funding has subsequently declined in real terms). This is important, as it shows that a step-change in discovery and documentation of new species is possible – with dedicated investment. One important goal of the plan is to create another such step change during the next decade.

The plan makes the case for the following strategic goals during the decade 2018–2027:

1. Significantly accelerated species discovery and documentation of Australia’s and New Zealand’s unique organisms
2. The building of a comprehensive framework to understand the evolution of the Australian and New Zealand biota
3. The creation of the world’s most powerful identification system for Australian and New Zealand organisms
4. Enhancement of ready online access to Australian and New Zealand biodiversity knowledge for living and extinct organisms
5. Integration of our dispersed biodiversity collections into a distributed science

Fig 1. Taxonomic productivity (measured as the rate of accumulation of new species in Australia and New Zealand) over the last 250 years.



infrastructure that will support the world's best biodiversity science

These in turn can only happen with appropriate support for and investment in our taxonomists, systematists, collections and collections staff, and infrastructure. To this end, the plan recommends 22 strategic actions grouped into six key initiatives.

A key recommendation is the establishment of a dedicated, resourced, professional and independent body in each country to carry the plan forward, to develop the detailed implementation plans that need to underpin the decadal plan and to advocate the plan, and taxonomy and systematics, to government, industry and the community. The success or otherwise of the plan depends on our next steps as a community.

It's important that we take a long view of this plan: we need to think not only of the next decade, but the subsequent ones, and to use this decade to set our community on a path for further advances in the next. It's perhaps a bit cute (and it's certainly aspirational), but the plan introduces the idea that, in addition to creating a step change in capacity in our discipline in the next decade, we want to build capabilities

to drive an acceleration to hypertaxonomy—the comprehensive documentation of Australian and New Zealand species before mid-century. We make the argument that this is a responsibility for the Australian and New Zealand community, government and industry, given that we have stewardship of two of the world's most extraordinary and diverse biotas.

This will be the last report in the *ASBS Newsletter* before the launch and release of the plan. I'd like to take this opportunity to express heartfelt thanks to all those who have helped this plan along and contributed such great ideas, visions, stories and opinions. It would not have been possible to achieve this without an enormous amount of hard work from the project's Working Group, without sound strategic advice from the Advisory Committee, and without the enthusiasm and vision of the entire community. I've sensed, and many people have expressed to me, that the development of the decadal plan has brought us as a community even more closely together, and that we've achieved a visionary but workable consensus.

So – onwards and upwards.

Combined Research Fund report

Molecular phylogenetics of *Pimelea* Banks & Sol. ex Gaertn. (Thymelaeaceae)

Charles Foster

School of Life and Environmental Sciences, University of Sydney

¹*Pimelea* Banks & Sol. Ex Gaertn. (Thymelaeaceae) is a large genus of flowering plants comprising ca. 150 species. Most of the taxonomic diversity is present within Australia, with ca. 95 endemic species found in a diverse range of habitats. The next highest diversity is in New Zealand, where ca. 35 species of *Pimelea* can be found. Two species of *Pimelea* are also now considered to be distributed in New Ireland and the Philippines.

As expected in such a large genus, there is a considerable degree of morphological variation within *Pimelea* (Rye and Heads, 1990). Species range from being small and herbaceous to being larger, woody trees; and inflorescence structure is also variable. Additionally, *Pimelea* exhibits a range of life-history strategies, with species ranging from hermaphroditic annuals to variously dioecious, gynodioecious, or hermaphroditic perennials (Burrows, 1960; Rye, 1988; Rye and Heads, 1990). The genus is important economically, with some species causing large losses to the livestock industry through poisoning of cattle (Fig. 1), and others being cultivated for their attractive inflorescences (Fig. 2).

A recent attempt to use a molecular systematic approach to estimate the phylogeny of *Pimelea* and the as-then recognised genus *Thecanthes* achieved very little phylogenetic resolution (Motsi et al., 2010). The molecular markers that were used exhibited very little variation, which is surprising given the extensive morphological variation of both genera. However, some trends were still apparent, including the possibility that *Thecanthes* was nested within *Pimelea*.

As part of my PhD, supervised by Professor Simon Ho and Associate Professor Murray Henwood, I aimed to use a molecular phylogenetic approach to resolve the phylogeny of *Pimelea*. To do so, I devised two complementary studies. Firstly, I aimed to build on the study of Motsi et al. (2010) by sampling the same molecular markers

from a broader sample of taxa, and then estimate the *Pimelea* phylogeny. Secondly, I aimed to generate a plastome-scale data set for a reduced set of taxa to allow an in-depth investigation of the evolutionary history of *Pimelea*.

To fund the research into *Pimelea*, I successfully applied for funding from two schemes associated with, and advertised by, the Australasian Systematic Botany Society. I received \$2000 towards the projects (the maximum amount available at the time) from the Hansjörg Eichler Scientific Research Fund. I also received \$5000 in research funding, and \$2000 towards conference attendance, from the Australian Conservation Taxonomy Awards (administered by The Nature Conservancy and The Thomas Foundation).

I generated a preliminary data set by obtaining from GenBank all available sequences for *Pimelea*, *Thecanthes* and other outgroup taxa from Thymelaeaceae. After carrying out Bayesian and maximum-likelihood phylogenetic analysis of this data set with optimal data partitioning schemes, I obtained a modest improvement on the results of Motsi et al. (2010). However, the phylogenetic resolution was generally still quite low.

I presented these preliminary results at the 2015 ASBS conference in Canberra. After my presentation, I learned that Professor David Cantrill's research group in Melbourne were also working towards resolving the *Pimelea* phylogeny. It is a testament to the collegial spirit of the Australasian botanical community that rather than claim ownership of the *Pimelea* project, Professor Cantrill proposed that we join forces to work towards an overall stronger study. Accordingly, I was provided with novel sequence data and genomic DNA samples for many additional species of *Pimelea*.

After combining the novel sequences with my preliminary data set, the final data set contained sequences for five molecular markers from 81 *Pimelea* taxa. At the time, this represented the largest taxon sample of *Pimelea* for a

¹ This is a combined Hansjörg Eichler and Australian Conservation Taxonomy Award report.

Fig. 1. *Pimelea* poisoning, also known as St George disease, causes large losses for the livestock industry. It can be caused by several species, including *P. decora* (pictured).

Ph. Trevor Wilson

phylogenetic study. Careful and extensive phylogenetic analysis of this data set resulted in an improved estimate of the *Pimelea* phylogeny (Foster et al., 2016). We were able to identify several clades of interest, reinstated the species *P. eyrei* F.Muell., and found strong enough support to reduce *Thecanthes* to synonymy with *Pimelea*. However, phylogenetic resolution was still poor in many parts of the phylogeny.

For the next study, I used the moderately to strongly supported clades from the first study as a guide for taxon sampling for a plastome-scale data set. I sampled from herbarium specimens from the National Herbarium of New South Wales (Royal Botanic Gardens, Sydney), National Herbarium of Victoria (Royal Botanic Gardens Victoria), and the Queensland Herbarium (Brisbane Botanic Gardens, Brisbane). Additionally, I sampled from cultivated collections at the Australian National Botanic Gardens, Canberra. I then extracted genomic DNA from these samples, and sent this for high-throughput sequencing at several facilities. The sequencing was largely successful, and I generated a plastome-scale data set containing both protein-coding and non-protein-coding markers from 33 species of *Pimelea* and eight outgroup taxa.

I estimated the phylogeny for the new data set using a similar suite of analyses as in the first study, including both maximum-likelihood and Bayesian phylogenetic analysis. Combined analysis of both protein-coding and non-protein-coding markers resulted in the most strongly supported phylogeny for *Pimelea* to date, particularly with respect to the backbone of the phylogeny. However, several relationships closer to the tips still remain only poorly to moderately supported, and analysis of the protein-coding and non-protein-coding markers separately revealed strongly supported differences in tree topologies.

To further investigate gene tree discordance within the chloroplast genomes of *Pimelea*, I estimated



gene trees for each of the protein-coding genes. By estimating the Robinson-Foulds distances between each of these gene trees and using clustering algorithms, I was able to determine that the protein-coding genes from the chloroplasts of *Pimelea* form three distinct clusters of topologies. I compared the three clusters based on several important factors, and found that the cluster with a topology closest to our most strongly supported and resolved phylogeny contained gene trees with significantly longer branch lengths. It is most likely that the gene tree discordance is caused by some genes evolving too slowly to allow resolution of the evolutionary relationships.

We also estimated the evolutionary timescale of *Pimelea* using a Bayesian molecular dating approach. We inferred that crown-group *Pimelea* first arose 9.44–5.42 Ma in the mid-Miocene, and that extremely short branch lengths along the backbone of the *Pimelea* phylogeny correspond to a rapid radiation early in the evolutionary history of the genus. This rapid radiation has likely contributed to the difficulty in resolving the relationships within *Pimelea*.



Fig. 2: Some species of *Pimelea* are horticulturally and floriculturally important, such as *P. ferruginea* (pictured).
Ph. Murray Henwood

Overall, the studies into *Pimelea* have resulted in a greatly improved understanding of the evolutionary history of the genus. The first project has been published (Foster et al., 2016), and a manuscript for the second project is currently under review. I am hopeful that the results of both studies will provide a useful platform for future investigations into *Pimelea*.

Acknowledgements

I am very thankful for the financial assistance from both the Hansjörg Eichler Scientific Research Fund and Australian Conservation Taxonomy Awards. The funding from both sources was awarded for broadly the same proposed work, and without combining the funding this research would not have been possible. I firstly used the funding from the Eichler fund to purchase a DNA extraction kit and other lab reagents. I then combined the remainder of the Eichler funds with the funding from the ACT Award, as well as funding from the University of Sydney, to cover all library preparation and sequencing costs associated with generating the novel data. Finally, the additional funding from the ACT Awards for conference attendance covered my expenses

associated with attending the 2016 ASBS conference in Alice Springs, and the *Systematics 2017* conference in Adelaide.

I also thank the Directors of the National Herbarium of New South Wales, the National Herbarium of Victoria, and the Queensland Herbarium for providing permission to extract from herbarium material. Paul Carmen is gratefully acknowledged for providing assistance with sampling from the living collection of the Australian National Botanic Gardens, Canberra. I also thank David Cantrill, Elizabeth James, Anna Syme, Rebecca Jordan, Rachel Douglas and Gareth Holmes from the National Herbarium of Victoria for collaborating on parts of

the project and providing genomic DNA for sequencing. Additionally, I must thank my supervisors Simon Ho and Murray Henwood for their great assistance.

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Articles

An inconvenient truth? Notes on Australian plants in Persoon's *Synopsis plantarum* 1805–1807

David J. Mabberley

This article discusses the inconsistent treatment of Australian plant names in Persoon's *Synopsis plantarum* (1805–7) and issues surrounding names in *Callitris*, *Conospermum*, *Cryptandra*, *Drosera* and *Xanthorrhoea* raised: these need resolution by specialists.

Introduction

When Allan Cunningham first came to Australia in 1816, he had little literature to use as reference (Orchard and Orchard 2015: 3), and he relied heavily on one of his limited sources, the diminutive (and thus portable), but remarkable, *Synopsis plantarum* [TL-2 7732] in two volumes (1805–1807) by Christiaan Hendrik Persoon (1761–1836). The first volume was issued in Paris and Tubingen (early 1805), the second in two parts, the first only in Tubingen, November 1806, the second in September 1807. Complete with 'In parvo copia...' in the title page, it is a duodecimo book printed by J.-L. Scherff in Paris in the minute 'parisienne' font of the time; it was issued simultaneously on fine and ordinary paper.

Arranged according to the Linnaean sexual system (following Persoon's 1797 edition of Linnaeus's *Systema vegetabilium*, which also appeared as French editions in 1798 and 1803, though here there are elements of a natural system, e.g. discussion of Rubiaceae in 1: 195), the *Synopsis* is credited with being among the first to use 'subspecies' (Boivin 1962; Chater & Brummitt 1966). It deals with 2 300 genera (some 20 000 species) and according to the 'AVIS'¹ preceding volume two was to be followed by a supplement with keys, 'un Clavis generum', but such has not been seen. An enlarged edition in six volumes (1817–1822), entitled *Species plantarum*, was in effect 'a slightly amended reprint' (TL-2 7733).

Persoon

Christiaan Persoon² was a South African botanist, principally a mycologist. A Dutch citizen, he was educated in Germany (Göttingen with both Link and Humboldt – see Anon. 1860) but from 1802 lived in Paris, yet he left his last herbarium

¹ A notice about the publication.

² [TL-2].

to the Dutch, it now being in Leiden (L) with his first, as is his surviving correspondence. He is commemorated in the genus *Persoonia* Sm. (Proteaceae), James Edward Smith writing to him from Norwich, England:

I have for some time wished to name a plant *Persoonia*, & have fixed on a very fine genus of the order Proteaceae, or rather perhaps more allied to the Loranthi - I am about to describe it, with some others, for the Linn. Socy's 4th. volume.³

And on 17 April 1798 added: 'It is a fine genus of New South Wales'⁴.

Indeed, in his *Synopsis*, Persoon went on to describe three new *Persoonia* species himself, one of them still recognized today, *Persoonia hirsuta* Pers.

With regard to the Australian flora in general, Persoon circumscribed and named in this book the families Cycadaceae and Rhizophoraceae, besides many familiar new genera including *Heteropogon* (Gramineae/Poaceae), *Hypolytrum* (Cyperaceae), *Ottelia* (Hydrocharitaceae), *Podocarpus* in the sense used today (Podocarpaceae), *Tephrosia* (Leguminosae/Fabaceae), *Thuarea* (Gramineae/Poaceae), *Trisetum* (= *Trisetaria*, Gramineae/Poaceae) and *Uncinia* (= *Carex*, Cyperaceae). He made the combinations that are now the current names in use for many plants in Australia, e.g. *Cynodon dactylon* (L.) Pers. (Gramineae/Poaceae), *Goodenia radicans* (Cav.) Pers. (Goodeniaceae), *Ottelia alismoides* (L.) Pers., *Samolus repens* (J.R. Forst. & G. Forst.) Pers. (Primulaceae), *Sorghum halepense* (L.) Pers. (Gramineae/Poaceae), *Tephrosia pumila* (Lam.) Pers. and *T. purpurea* (L.) Pers. (Leguminosae/Fabaceae).

Hitherto apparently neglected issues

In short, Persoon's book has been known in Australia for over 200 years, with its new names

³ JE Smith to Persoon 17 January 1798 (University Library Leiden, The Netherlands, Persoon Archive - BPL 243 unfoliated).

⁴ JE Smith to Persoon 17 April 1798 (ibid.).

listed in standard indices, and is therefore in no way ‘obscure’. However, recent examination of a copy raises some matters that appear not yet to have been addressed formally.

In his book, Persoon was one of the first to coin species names in genera named without such in J.E. Smith’s ‘The characters of twenty new genera of plants’ (*Trans. Linn. Soc.* 4: 213–223, 1798), 19 of them being Australian. *Lambertia* Sm. (Proteaceae) is exceptional in Smith’s paper in being accompanied by a binomial engraved *L. formosa* on the Ferdinand Bauer plate (Mabberley 2017b: 62–63), a name not in the text but traditionally ascribed to Smith, while the non-Australian genus is the African *Afzelia* Sm. (Leguminosae/Fabaceae), with Persoon’s *A. africana* Sm. ex Pers. (1805) as type. Recognized examples of such Persoon names, besides *Afzelia africana*, are the Australian *Eriostemon australasius* Pers. (Rutaceae) and *Xanthorrhoea resinosa* Pers. (Asphodelaceae).

However, there are two other such Smith generic names involving Persoon:

1. *Conospermum smithii* Pers., *Syn. Pl.* 1: 116 (1 April–15 June 1805, Proteaceae) – Following the generic description, this, the only described species, has as diagnosis merely ‘Frutex’; it is debatable whether or not this validates the name. Nick Turland (in litt. ii. 2018) points out that ICN Art. 38.12 would seem not to apply because of Persoon’s observation, “Plurus species hujus generis existere videntur”, but inclines to accept the name as valid. *C. smithii* antedates the conspecific *C. longifolium* Sm. [1 April 1806].
2. *Cryptandra australis* Pers., *Syn. Pl.* 1: 250 (1805, Rhamnaceae) – This has a longer, but still brief, species description. The name antedates the conspecific *C. ericoides* Sm. (27 June 1808).

Besides new *Persoonia* spp., Persoon described other new Australian species, his published names such as *Ficus macrophylla* Desf. ex Pers. (1807, Moraceae) being accepted today. Others are the basionyms of currently accepted names of Australian plants, e.g. *Mimosa dodonaeifolia* Pers. (1806) = *Acacia dodonaeifolia* (Pers.) Balbis, these two and others being described from plants growing in Paris gardens, notably the Jardin de Plantes and Cels’s garden.

For some new species, Persoon relied on material

seen in the herbarium of, or received from, his correspondent ‘Thibaud’; José Pavon wrote⁵ about ‘Thibaud’ in a letter to Persoon from Madrid 20 February 1806: ‘J’ecrivais a notre ami Monsieur Thibaud’; with Hipolito Ruiz Lopez, Pavon had by then named *Thibaudia* (sic; Ericaceae) after him. This is apparently Étienne Thibaud (c. 1762–), author of *Stephani Thibaud... Disquisitio utrum in plantis existat principium vitale, principio vitale, principio vitali in animalibus analogum?* (Montpellier 1785; with his Latinised first name), and later ‘procureur général de la commune de Montpellier (1796), commissaire du pouvoir exécutif (1798)’ (Web ref. 1) He spent time in Madrid when building his herbarium (de Candolle 2004: 499) and his specimens came to be preserved in G-DC (bought by de Candolle when in Montpellier) and MPU (from Dunal who bought the rest)⁶. Many species accounts in de Candolle’s *Prodromus* refer to material ‘ex Herb. Thibaud.’

Two of Persoon’s Australian novelties require attention:

1. *Cupressus australis* Pers., *Syn. Pl.* 2: 580 (1807, i.e. *Callitris australis* (Pers.) Sweet, Cupressaceae) – Persoon notes that it was growing in Cels’s garden and there are specimens in Persoon’s herbarium at Leiden labelled ‘*Cupressus australis*’ (L1187088) and ‘*Juniperus australis*’ (L1187078) in his hand; both are identified by Hans Hallier as *C. rhomboidea* R.Br. ex Rich., though *C. australis* has sometimes been put in the synonymy of other species. It is apparently the earliest published epithet applied to any species of *Callitris*. The type needs examination by a specialist.
2. *Drosera pedata* Pers., *Syn. Pl.* 1: 337 (1 April

⁵ J Pavon to Persoon 20 February 1806 (University Library Leiden, The Netherlands, Persoon Archive - BPL 243 unfoliated).

⁶ It is not clear whether or not he is the same physician-botanist referred to in other sources as the ‘M. Thibaud’ who was said to be a physician who took on the botanic garden at Strasbourg, France, in 1801 but did not accept the chair of botany, so stepped down in 1803 (Web ref. 2). He is not to be confused with Arsèn[n]e Thiébaud de Berneaud (1777–1850), a soldier-naturalist and agronomist, pupil and friend of Parmentier and Thouin, active in the Linnean Society of Paris and author of *Nouveau manuel complet du cultivateur français* (1829; second edition 1841), because this man wrote the botanical entries in a popular encyclopaedia, referring ‘l’herbier de docteur Thibaud de Strasbourg’ (Web ref. 3).

– 15 June 1805, Droseraceae) – Persoon notes ‘Vidi in Herbario D. Thibaut’. The description is unquestionably that of the sundew later named *D. binata* Labill. (September 1805; Mabberley 2017a: 186, t. 88), as is confirmed by ‘Thibaud’ material in G-DC (G00210251) which has ‘*Drosera pedata* 12. Herb. Thibaud 1815 Pers: Synopsis [where species 12. is *D. pedata*]’, with a second label apparently in the maturer hand of Robert Brown, ‘*Drosera ramosa* D. B[anks?] B [?].B.’. Brown visited de Candolle in Geneva in 1824 and 1835 (Mabberley 1985: 254, 330) but whether or not this material was collected by Joseph Banks in Australia is unclear.

Reasons

All these Persoon names have long been in the mainstream literature (not recently brought back to light, having been disregarded for often prejudicial reasons (Mabberley 1991, Barker & Barker 1999, Mabberley 2018) or, during the compilation, largely from secondary (and mainly British) sources, of *Index Kewensis*, discarded by Joseph Hooker (Meikle 1971; Mabberley 1991) and being patiently restored by IPNI staff ⁷), yet the issues they raise have still to be dealt with over 200 years after Cunningham came to Australia.

The masking of this ‘inconvenient truth’ may well be the result of either or both of two things. Firstly Banks’s Curator-Librarian Jonas Dryander could not take into account Persoon’s almost contemporary work in what was effectively the first Australian plant check-list, prepared no doubt to aid Robert Brown’s work after Flinders’s *Investigator* voyage: *Chloris Novae Hollandiae* (1806), a ‘baseline’ list of all names of Australian (though not Norfolk Is.) plants published up

⁷ It is an unfortunately widespread myth that IPNI contains all names in current use, or even all names ever published; resources are such that current names found in *Index Londinensis* (1929–1931, 1941) and even some type-species names in *Index Nominum Genericorum* are yet to be incorporated in IPNI; only very recently, for example, has the name for the commercial freesia been added; cf. Smith et al. [2016]). Many names relating to Australian plants in French publications have also recently been added (see Mabberley (2018) for discussion, though one relating to the current name of an Australian cycad early spread in cultivation in Napoleonic France has not: *Cycas riedlei* Dum.-Cours., Bot. Cult. ed. 2, 2: 39 (1811); Noisette, Manuel Complet 3: 14 (1826) = *Macrozamia riedlei* (Dum.-Cours.) C.A. Gardner, named after its collector, Anseme Riedlé (1765–1801) gardener at the Jardin des Plantes, Paris and head gardener on Baudin’s Pacific voyage

until that time. Nonetheless, Brown cites ‘Per. syn.’ from time to time in his ground-breaking *Prodromus* of 1810, which volume did not cover conifers, Droseraceae or Rhamnaceae (so one would not expect to find some of Persoon’s germane names), but Brown does not even cite Persoon’s *Conospermum smithii* (or *Xanthorrhoea resinosa*⁸).

Secondly, and more likely, these names, especially the ones associated with ‘his’ genera, were no doubt deliberately ignored by Smith, President of the Linnean Society and self-proclaimed doyen of the Australian flora – and therefore the botanical establishment in Britain, and perhaps thus his friend Brown and subsequent followers. Smith was very prickly in such matters, riding roughshod over priority as it suited him (as, indeed, did his arch-rival, Richard Anthony Salisbury), for example heavily chastising even Brown (Mabberley 1985: 150), for taking up *Hakea* Schrad. (Jan. 1798, Proteaceae) over Smith’s *Conchium* (24 May 1798):

I am told Hake [Baron Christian Ludwig von Hake (1745–1818), a councillor of Hanover and patron of botany] has no claim to the honour, but if he has, another genus might be given him. I should have taken it as a particular favour if you had kept up my name.

Conclusion

After consideration of the foregoing, specialists may wish to prepare conservation proposals (or appropriate rejection proposals for Persoon’s earlier names) for *Callitris* ? *rhomboidea*, *Cryptandra ericoides* and *Drosera binata*, or let the rules of priority prevail, i.e. recognising *Callitris australis*, *Cryptandra australis* and

⁸ Brown’s name for this species was indeed a Smith one instead: *Xanthorrhoea bastile* R.Br., Prodr.: 288. 1810, but Brown did not refer to Smith, whose name was first published by J. Dryander, *Cat. Bibl. Banks* 3: 476. 1797 as ‘*Xanthorrhoea Hastile* Smith.’, without description. ‘Hastile’ is a noun in apposition, meaning javelin shaft, and should not be ‘corrected’ to ‘hastilis’. An earlier name for the plant is *Acaroides resinifera* Kite (1795 = *X. resinifera* (Kite) E.C.Nelson & D.J.Bedford), which name should perhaps be considered for rejection, because if, on re-examination, it is argued to be with adequate description, it would provide an earlier generic name for *Xanthorrhoea* Sm. (1798); it is no doubt a corruption of Solander’s MS ‘Acoroides’. A proposal in the 1990s for conservation of *Xanthorrhoea* against *Acaroides* was declined, as deemed unnecessary. I am grateful to Werner Greuter (B) for advice here.

Drosera pedata. Moreover, the names *Acaroides resinifera* and *Conospermum smithii* need to be tested or re-tested by the appropriate nomenclatural committees to ascertain whether or not they have enough descriptive material to be considered validly published.

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The psychological collections of the National Herbarium of Victoria

Doris Sinkora (posthumous extract)

On 17 August 1981, Doris gave a talk at the National Herbarium of Victoria (MEL) to visitors from the International Botanical Congress in Sydney about the psychological collections (accompanied by a display of specimens). Edited extracts from this presentation, enumerating the richness, diversity and significance of the collections, are reproduced below.

Sara Maroske

[Ferdinand] Mueller did not work or publish on evascular cryptogams himself, and sent all these collections to various specialists. Here, too, he maintained a large exchange and donations program. Algae were sent to O. W. Sonder initially, but soon also to others, especially S. R. Lenormand in France and J. E. Areschoug and J. G. Agardh in Sweden.

The Australian collections consist in the main of Mueller's own collections and those of his many collectors, of W. H. Harvey's collections and of the 'Algae Muellerianae' distributed by Agardh. These latter collections are not, as the name might imply, just Mueller's collections, although some of them are. Rather, they are part of the collections mostly and in later years almost exclusively sent to Mueller by his collectors, and passed on to Agardh by Mueller. Probably about 40–50% of the Australian collections are from Sonder's herbarium.

The extra-Australian collections are probably at least 80% from the Sonder herbarium. Other major contributors are Lenormand, whose material came here as direct exchange to Mueller as well as through Sonder's and Steetz's herbaria. Dr Bill Woelkerling, who has seen both collections, thinks we have more Lenormand material here than the Lenormand herbarium in Caen. Through Lenormand came collections from François Joseph Chauvin, Hippolyte Marie and Pierre Louis Crouan, H. Giraudy, A. J. J. Solier, E. D. É. Vieillard's New Caledonian algae and others. Mueller acquired large numbers of algae from J. E. Areschoug, largely of Scandinavian marine algae and Characeae and some South American collections in several consignments in the early 1860s. The herbarium contains Harvey collections from Britain, South Africa, New Zealand, North America and the Pacific, which all came through the Sonder herbarium. Sonder's herbarium contained large numbers of historic collections, which he acquired by purchase or exchange from all over the world, including collections from Nikolaus Binder, J. G. C. Lehmann, substantial material from Jacob Agardh, especially his Mediterranean algae, and in the Characeae large numbers of specimens from Alexander Braun and from Carl Otto Bulnheim.

MEL has many specimens, including types of new species, of Friedrich Traugott Kützing, who borrowed heavily from the Sonder herbarium for his volumes of the *Tabulae Phycologicae*. These specimens are found here, not in the Kützing herbarium in Leiden.

Last, but not least, Mueller also acquired material from W. J. and J. D. Hooker at Kew, and from the British Museum, which included collections from Dawson Turner among others.

Exsiccatae

The collections contain large numbers of exsiccatae. It is impossible to say whether any sets are complete, as all the material is incorporated and dispersed through the collections. Most of the older sets came through Sonder's herbarium. There are many exsiccatae that remain unidentified. The major sets represented in large numbers are:

1. Anon.—Flora Hungarica exsiccata.
2. Areschoug, J. E.—general marine algae & Characeae.
3. Bullock-Webster, G. R.—Characeae exsiccatae.
4. Farlow, W. G., Anderson, C. L. & Eaton, D. C.—Algae Exsiccatae Americae Borealis, 1878–1889.
5. Groves & Bullock-Webster—Characeae exsiccatae.
6. Groves, H. & J.—Characeae Britannicae exsiccatae, 1892–1900.
7. Harvey, W. H.—Friendly Island Algae. Australian algae. Ceylon algae.
8. Hohenacker, R. F.—Meeresalgen.
9. Holmes, E. M.—Algae britannicae rarioris exsiccatae, 1883–1910.
10. Jürgens, G. H. B.—Algae aquaticae quas in littor Maris Dynastium Jeveranum et Frisiam Orientalem alluentis rejectas, 1816–1824.
11. Kerner von Marilaun, A. J.—Flora exsiccata austro-hungarica a museo botanico universitatis edita.
12. Kotschy, C. G. T.—Iter Syriacum 1855.
13. Lenormand, S. R.—six collections d'hydrophytes, issued through Buchinger
14. Nordstedt, C. F. O. & Wahlstedt, L. J.—Characeae scandinavicae exsiccatae, 1871–1874.
15. Rabenhorst, G. L.—Die Algen Europa's, 1861–1879.
16. Threde, C. H.—Die Algen der Nordsee und die mit denselben vorkommenden Zoophyten, gesammelt und herausgegeben.
17. University of California Herbarium—algae distributed by.
18. Welwitsch, F. M. J.—Cryptotheca lusitana, 1842–1850. Phycotheca lusitana, 1842–1850.

Expeditions

Mainly through the Sonder herbarium samples from many of the major expeditions are represented at MEL. Some material from British expeditions came to Mueller through the Hookers, and a few specimens from French expeditions came through exchange from Paris (Table 1).

There is no doubt that the arrival of the Sonder herbarium brought not only a dramatic increase to the phycological collections, especially in the extra-Australian algae, but also greatly increased the value of the herbarium to taxonomists due

Table 1. Exploring expeditions that are sources of collections in the National Herbarium of Victoria.

Date	Commander	Ship	Botanist/Naturalist
1768–1771	Cook	<i>Endeavour</i>	Banks & Solander
1791–1794	d'Entrecasteaux	<i>Recherche</i>	Labillardière
1800–1804	Baudin	<i>Geograph</i>	Peron & Bory de St Vincent
1800–1804	Freycinet	<i>Casuarina</i>	several
1801–1805	Flinders	<i>Investigator</i>	Brown
1803–1806	Krusenstern		Tilesius
1815–1818	Kotzebue	<i>Rurik</i>	Chamisso
1817–1820	Freycinet	<i>Uranie & Physicienne</i>	Gaudichaud
1822–1825	Duperrey	<i>Coquille</i>	Dumont d'Urville
1826–1829	Dumont d'Urville	<i>Astrolabe</i>	Lesson
1826–1829	Lütke	<i>Senjawin</i>	Mertens & Haenke
1836–1837	Vaillant	<i>La Bonite</i>	Gaudichaud
1837–1840	Dumont d'Urville	<i>Astrolabe & Zelee</i>	Hombrom
1838–1842	Wilkes	<i>Peacock & Porpoise</i>	Rich, Brackenridge & Pickering
1857–1859	Wüllerstorff-Urbair	<i>Novara</i>	Jelinek, Hochstetter
1859–1862	Eulenburg	<i>Thetis</i>	von Martens

to the very high percentage of type material and autographic material it contains. German mycologist Richard Sadebeck, in his obituary of Sonder stated that 'Sonder's algal herbarium is more extensive and richer than that of any public collection, and thus directed attention always in the first instance to Sonder, when it was a case of undertaking critical examinations and studies

on extra-European algae' (translation into English from Sadebeck 1882).

Reference

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How many spicate species of *Acaena* are there in Australia?

Tony Orchard

Some years ago (Orchard, 1969) I wrote a paper on the spicate species of *Acaena* in Australia. In that paper I recognised two normal species (*A. echinata* Nees and *A. agnipila* Gandoger), and noted that the type specimen of *A. ovina* A.Cunn. seemed to be a hybrid between these taxa, and should be rendered as *A. ×ovina* A.Cunn. Other similar hybrids between the two species, collected subsequent to the type, were also noted. I also observed that members of this complex occasionally hybridised with *A. anserinifolia* (J.R.Forst. & G.Forst.) Druce, *s.l.* (now considered to be correctly, or in part, *A. novaezelandiae* Kirk), and named the hybrid result *A. ×anserovina* Orchard. Later (Orchard, 1973) I discovered the same pattern of variation in introduced spicate *Acaena* taxa in New Zealand, and also (Orchard, 1974) the same hybrids between the spicate and globular-headed taxa. In the 1969 paper I recognised a number of varieties of both *A. agnipila* and *A. echinata*. Most later

authors have chosen to ignore these, probably correctly, as they seem to be in many cases just edaphic variants.

Recently the *Australian Plant Name Index* and *Australian Plant Census* sank *A. agnipila* into *A. ovina*, recognising just two species of spicate *Acaena* species for Australia, *A. ovina* and *A. echinata*, both non-hybrid in origin. The reason for this is not clear, but seems to have been done without reference to the type material of *A. ovina* in Kew.

At the time of my original paper I did not have access to the Kew types either, and relied on correspondence with Arthur Court, then ABLO at Kew, who provided me with details of the putative type (labelled "Holotype"). At that time I believed that there was only one relevant sheet in Kew. Subsequently, on visits to that institution I have discovered that there were several. Based on Court's advice I lectotypified *A. ovina* on the

above sheet which has subsequently had two Kew accession numbers added (*K 730131* and *K 730132*). The entire sheet is from Hooker's herbarium.

Cunningham's herbarium had a very complex history of dispersal (Orchard, 2014). The specimens now in Kew came from several sources:

- donations of Allan Cunningham specimens to William Hooker in Glasgow either by Richard Cunningham or directly by Allan Cunningham, and then passed to Kew with Hooker's herbarium in 1866;
- donations of Cunningham's personal herbarium by Cunningham's legatee Robert Heward to Hooker in 1862 when Hooker was Director at Kew;
- donations by Cunningham, and/or Heward and/or Hooker to George Bentham, and then donated with Bentham's herbarium to Kew in 1854;
- specimens donated by Heward to the Linnaean Society, and then by them to Kew in 1915; and
- a few other specimens given to various botanists by either Cunningham or Heward, and subsequently donated to Kew.

Cunningham's description of *Acaena ovina* was published in Field (1825), along with 99 other taxa, mostly new. The specimens on which Cunningham's descriptions were based mostly came from his first independent inland expedition along the Cudgong River from September 1822 to January 1823. However, not all were from the inland (western) side of the ranges. Cunningham included some from the approaches to, and traverse of, the Blue Mountains, and he probably also relied on some earlier collections, particularly those from early in the Oxley expedition of 1817. The *Acaena* specimens, though, almost certainly came from the Cudgong River district.

In Orchard (1969) it was pointed out that spicate *Acaena* specimens in Australia fell into two main groups. The first group, called *A. echinata*, were sparsely hairy plants, often with rather coarsely serrate leaflets, and the fruits had very unequal spines, the largest of which had broad expanded bases which often gave the fruits an angular appearance. The second group, called *A. agnipila*, were densely hairy plants, with usually finer, more regular serrations on the leaflets, and fruits which were ovoid (not angular), with numerous fine equi-sized spines lacking the enlarged bases seen in *A. echinata*. *Acaena echinata* had an

original distribution which seemed to be centred on southern New South Wales, Victoria and South Australia, while *A. agnipila* was more common in Victoria and eastern New South Wales, but the two showed considerable overlap, and obvious dispersal into additional areas, as would be expected for taxa with fruits well adapted for transport by large furry animals.

The lectotype sheet of *A. ovina* bears four stems of plants in young flower, and a spike of reasonably mature fruits. Two numbers have been affixed, although there is no reason to doubt that all of the material on the sheet was collected by Cunningham, probably at the same time, but with a mixture of taxa. The plant at upper right (*K 730131*) has only very young flowers, but seems from its indumentum to be *A. agnipila*. All other specimens on the sheet (*K 730132*) are less hirsute and likely represent a single collection (the presence of both young flowers and almost mature fruits on the same plant is not unusual in these species). The fruits in this specimen have uneven spines, but they lack the massive bases of core *A. echinata*. The leaves are somewhat hairy, but intermediate between core *A. agnipila* and *A. echinata*, and the serrations are nearer to *A. echinata* than to *A. agnipila*. This intergradation between the characters of *A. agnipila* and *A. echinata* leads me to believe that this lectotype specimen (*K 730132*) represents a hybrid.

Another sheet (with three numbers, *K 730136*, *730137* and *756170*) is definitely a mixed collection. The specimens *K 730136* and *K 756170* are Robert Brown collections, with mss names "*Acaena interrupta*". They appear (only very young fruits) to be *A. ×ovina*, but are of course not type material. The remaining specimen (*A. Cunningham 80*, Western Interior, Oct. 1822, *K 730137*) bears only young flowers, but is rather hairy and probably represents *A. agnipila*. This last is from the Cudgong expedition, and the specimen came to Kew from Cunningham via Heward. The Brown specimens seem to have been donated to Kew by Bennett in 1880. They would not have been available to Cunningham at the time he wrote his description of *A. ×ovina*.

A third sheet (also with three numbers, *K 7301333*, *730134* and *730135*) is also of mixed provenance. The specimen on the right (*K 730135*) is a Victorian collection by Robertson. The central specimen (*K 730132*) is from the Murrumbidgee, collected by McArthur. Both of these specimens are obviously not types, but

represent *A. ×ovina*. The specimen on the left (*K 730134*), the base of a plant plus detached spike, is by Cunningham, and has as its origin the generalised locality “Bathurst”. It is probably a syntype and represents *A. ×ovina* (young fruits).

All the above sheets are available for viewing on-line through the Kew Catalogue (Web ref.). A fourth sheet (*A. Cunningham s.n.*, Sydney, K, herb. Hooker.) is not illustrated. It bears four parts of plants, three sterile and one with a spike of almost mature fruits. The latter is *A. ×ovina*, and the sterile parts appear to be part of the same gathering. “Sydney” may be taken as a generalised locality, making this another potential syntype. It is from Hooker’s herbarium. It is noticeable that Cunningham specimens in Hooker’s own herbarium usually have rather cryptic and abbreviated associated data, as compared to those donated later by Heward, but specimens from the two sources can often be matched.

In summary, the lectotype and many of the syntypes of *A. ovina* confirm that it is probably hybrid in origin (but most closely resembling *A. echinata*), while a few residual syntypes are possibly *A. agnipila*. *Acaena* probably has an unusual breeding system, akin to that in some of its relatives (e.g. *Rubus*). Most species are variable, and hybridism is not unusual. Even hybrids between the spicate and globular-headed taxa are common. The suggestion that the lectotype of *A. ovina* is probably of hybrid origin is not therefore unexpected. Is it plausible? Even the current distributions of *A. agnipila* and *A. echinata* suggest that they comprise a species of northerly range vs one of southerly range, respectively. The two are partly allopatric, partly sympatric, with the overall pattern confused by animal dispersal. At the time that Cunningham conducted his expedition along the Cudjegong

in 1822–23 settlement in the area was expanding rapidly. There were already extensive grazing areas for sheep and cattle extending as far north as Mudgee, many of these “properties” represented by squatter outstations, but linked by primitive roads or tracks. Cunningham frequently commented on these outstations in his journals, and on occasion relied on them for provisions. The movement of large herds had been going on for at least five years, giving ample opportunity for hitchhiking fruits to be distributed widely. This mixing would provide ample opportunity for hybridisation of populations of *A. agnipila* and *A. echinata* recently brought together in disturbed grazing grounds.

Until someone can demonstrate otherwise, I believe that the most likely answer to my question raised in the title is: two species, *A. agnipila* and *A. echinata*, and a not infrequent hybrid between them, *A. ×ovina*.

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Misleading labels: the case of Richard Helms and the Elder Exploring Expedition

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In the course of editing the correspondence of Ferdinand von Mueller we needed to compare the description of *Darwinia luehmannii* F.Muell. & Tate with the specimen *MEL 68281*. The specimen carries an Elder Exploring Expedition label, with the date 2 November 1891, the locality as “85 miles n e x e from Esperance Bay”; the space

for collector is blank, but the herbarium label completed by Mueller identifies the collector as “Helms”. However, Helms is also recorded as collecting specimens on the same date, but at a different locality, for example both *K 831387* (“*Muehlenbeckia polygonoides* F.Muell.”) and *NSW 481070* (*Acacia rendlei* Maiden) have

an Elder Exploring Exhibition label giving the locality as “Nr Fraser Range, W. A.” dated “2.11.91”, and the collector as “R. Helms”.

Clearly these collections around 130 km apart on the same day cannot both be by Richard Helms. The history of the expedition, however, provides an explanation. It also casts doubt on the accuracy of other collector attributions.

The expedition, led by David Lindsay, funded by Sir Thomas Elder to be the “last great exploring expedition” in Australia¹ was intended to fill the gaps in the map of Central and Western Australia. Mueller in Melbourne was asked to organise it, which he did principally through the South Australian Branch of the Royal Geographical Society of Australasia. The area to be explored west of the overland telegraph was described in the instructions issued by the Society as “within the fifteenth to the thirtieth parallels of south latitude, comprising an area of about a million square miles” (RGS 1891: 5). Richard Helms (1842–1914), who had collected for the Australian Museum, Sydney—for example on Mt. Kosciuszko²—had sought a position as zoological collector,³ but was appointed as the “naturalist and botanical collector” (Lindsay 1893: 15). As well as plants, Helms collected zoological specimens, the fleshy parts also providing food (e.g., Lindsay 1893: 82). These specimens were reported upon in a series of papers devoted to specific groups of animals in *Transactions of the Royal Society of South Australia*, volume 16, in 1892 and 1893; while he reported the anthropological observations himself in Helms (1896).

The expedition was beset by drought and dissension. After nine months in the field Helms and other officers resigned on 31 December 1891 at “Coodardry Station on the main road from

Geraldton to the Murchison” (Lindsay 1893: 152) and made their way independently to Geraldton, thence to Perth and home to South Australia and the Eastern States. Between March and May 1892 Helms was in Adelaide, sorting the assembled natural history specimens and affixing Elder Exploring Expedition labels to the pressed plants, before going home to Sydney.⁴

However, before the resignations, while the party remained camped near Fraser Range station, about 120 km east of the present township of Norseman, Aubrey Gwynne, an assistant on the expedition, was deemed too ill to continue, and he and Hadji Shah Mahomet, “jimador in charge of camels” (Lindsay 1893: 15), “with ten boxes of specimens ... started in Sinclair’s dray for Esperance” on 31 October 1891 (p. 127). Gwynne was to travel home to Adelaide from Esperance. Gwynne reached Adelaide on 26 November, also “bringing a case of botanical specimens I collected myself in the 160 mile walk between Fraser Range and Esperance Bay.”⁵ Mueller and especially Ralph Tate, professor of natural science at the University of Adelaide who supervised Helms while he was mounting the specimens for distribution, would have been aware of these details. So, notwithstanding Mueller’s label, in their paper on the botany of the Expedition (Mueller & Tate 1896: 353), the location of the holotype of *Darwinia luehmannii* is given as “Eighty-five miles N.E. by E. from Esperance Bay (P. A. Gwynne)”⁶.

Helms accompanied the remainder of the party when on 2 November they left the Fraser Range camp for Geraldton, and remained with it until he and other officers resigned. Thus collections could have been made on 2 November, one by Gwynne en route to Esperance, and the other by Helms as the expedition departed the Fraser Range camp.

An Australian Virtual Herbarium (AVH) dot-map for collector “R. Helms” shows a group of outliers, between Fraser Range and Esperance, including

¹ *The Advertiser* (Adelaide), 27 April 1891. p. 4; see also Thomas Elder to Ferdinand von Mueller, 2 July 1890, ML MSS.2134/1, Royal Geographical Society of Australasia (NSW Branch), Mitchell Library, State Library of New South Wales, Sydney.

² *Australian Museum annual report* 1889: 2.

³ Edward Merewether to Ferdinand von Mueller, 15 November 1890 (ML MSS.853/1 letter press copy book 1, pp. 696–8, Royal Geographical Society of Australasia (NSW Branch) records, Mitchell Library, State Library of New South Wales, Sydney); Ferdinand von Mueller to Edward Ramsay 11 November 1890, AMS 355, (Holograph letters from noted scientists and individuals, item no. 46, Australian Museum, Sydney).

⁴ A valuable botanical collection. South Australian Register, 26 March 1892. p. 5; Mr. R. Helms. *South Australian Register*, 21 May 1892, p. 4.

⁵ Elder exploring expedition: interview with Mr Gwynne. *Adelaide Observer*, 28 November 1891, p. 31

⁶ Aubrey Percival Gwynne’s initials are correctly given in Lindsay (1893: 15), but in herbaria he is shown as ‘P. A. Gwynne’, following the name on the Expedition distribution labels. He was born in London 1853, and died Victor Harbor SA, 1930 (Death of recluse. *Mail (Adelaide)*, 31 May 1930, p. 6, and various genealogical sources).

MEL 68281. While the maps cannot be taken as definitive as the coordinates have often been inferred and some have been generalized “due to sensitivity concerns”, they help focus attention on other possible instances of misleading collector data from the Expedition. The specimen NSW 91699 (*Conospermum distichum* R.Br.) is reported by the AVH as collected by Helms in October 1891, at Esperance. It has two labels. One is a pre-printed label completed in pencil: “*Locality* Near Esperance Bay, *Date* Oct 1891, *Nature of Habitat*: Sandy soil, *Finder’s Name* D. Lindsay”; the spaces for *Size*, *Botanical Name* and *Common or Native Name* are not completed. The second is a pre-printed “National Herbarium of New South Wales, Botanic Gardens Sydney” label, with the details completed in ink: “*Conospermum distichum* R.Br., *Loc.* Near Esperance Bay, *Coll.* R. Helms *Date* Oct 1891.” It could not have been collected by Helms, but is one of the specimens that Lindsay collected when he rode to Esperance to send and receive telegraphic messages, arriving on 14 October 1891. He found that “the whole country is covered with bloom—quite a paradise for the botanist”. Lindsay gathered some to take back to Helms (Lindsay 1893: 120).

To further complicate matters, some specimens from the expedition are attributed to Gwynne or to Lindsay, ruling out the possibility that all specimens were attributed to Helms as the officer responsible for the collection when, in Adelaide, specimens were prepared for distribution.

Gwynne is shown as collector of a number of specimens at MEL, usually with the locality as “85 miles NE of Esperance Bay”, and dated “2.11.91”, for example MEL 41208 (*Lachnostachys verbascifolia* var. *paniculata* Ewart), and is represented in other herbaria as well, for example K 215473 (*Goodenia decursiva* W.Fitzg.), once again with the same locality and date. All but one of his dated specimens listed in AVH are consistent with the trip from Fraser Range to Esperance Bay in late October/early November 1891. The exception is dated in AVH as 25 November 1891, when he was at sea between Albany and Adelaide, but the locality, “85 miles from Esperance Bay” matches his overland journey.

Specimens attributed in AVH to David Lindsay from this expedition include some that were collected apparently when all of the party were with the caravan, although they spread out looking

for water (Lindsay 1893: 68–70), for example AD 97934069 (*Leptosema chambersii* F.Muell., 31 July 1891, c. 28 miles SW of camp 31, at Mt Cooper). Others such as PERTH 2799634 and MEL 0247240 (*Gastrolobium bilobum* R.Br.) from Mt Ridley were collected during Lindsay’s journey to and from Esperance while the expedition remained at the Fraser Range camp (Lindsay 1893: 120, 125).

Other members of the expedition also collected plants. Four specimens of Sturt’s desert pea collected on 10 August 1891 are attributed in AVH to “Dr Elliot”, or “Elliot”, the expedition’s medical officer and photographer; Elliot was with the main caravan that day. R. Ramsay⁷, an “assistant”, is recorded as collecting eighteen specimens on 14 July 1891 and two on 17 July, both dates in the period during which Ramsay was on a side trip to the south-west of the main expedition caravan which, including Helms, was then moving west from the area of Birksgate Range, SA, (Lindsay 1893: 63, 52–54; see also the expedition map at the National Library of Australia (Web ref. 1). A specimen identified on its Elder Exploring Expedition label as NSW 191492 (*Hakea multinucleata*), collected on 14 July from “70 miles s. w. of camp 17”, is attributed to Helms, but could not have been gathered by him. Given that other specimens with the same date and locality are attributed to Ramsay, it is almost certain that this one is his, although L.A. Wells⁸, the surveyor to the expedition and leader of the side trip, cannot be ruled out. K 216029 (*Goodenia centralis* Carolin), also attributed to Ramsay “on trip to south from camp 9”, is dated June 1891 and would have been collected between 27 June and 3 July on another side trip led by Wells (Lindsay 1893: 44–47). Another specimen, MEL 593151 (*Cucumis argenteus* (Domin) P. Sebastian & I. Telford) is puzzling: its Elder Expedition label attributes it to Helms, from the Birksgate Range on 17 July 1891. On that date both the main caravan and the side trip party were around 75 km further west.

Thus there are certainly some specimens attributed to Helms that were collected by Gwynne, Lindsay or another, almost certainly Ramsay. We do not know whether Gwynne collected specimens attributed to Helms before he was repatriated;

⁷ Robert Garden Ramsay, see George (2009), p.524.

⁸ Lawrence Allan Wells, see The Elder scientific exploration expedition. *The pictorial Australian* (Adelaide) 1 May 1891, p. 67.

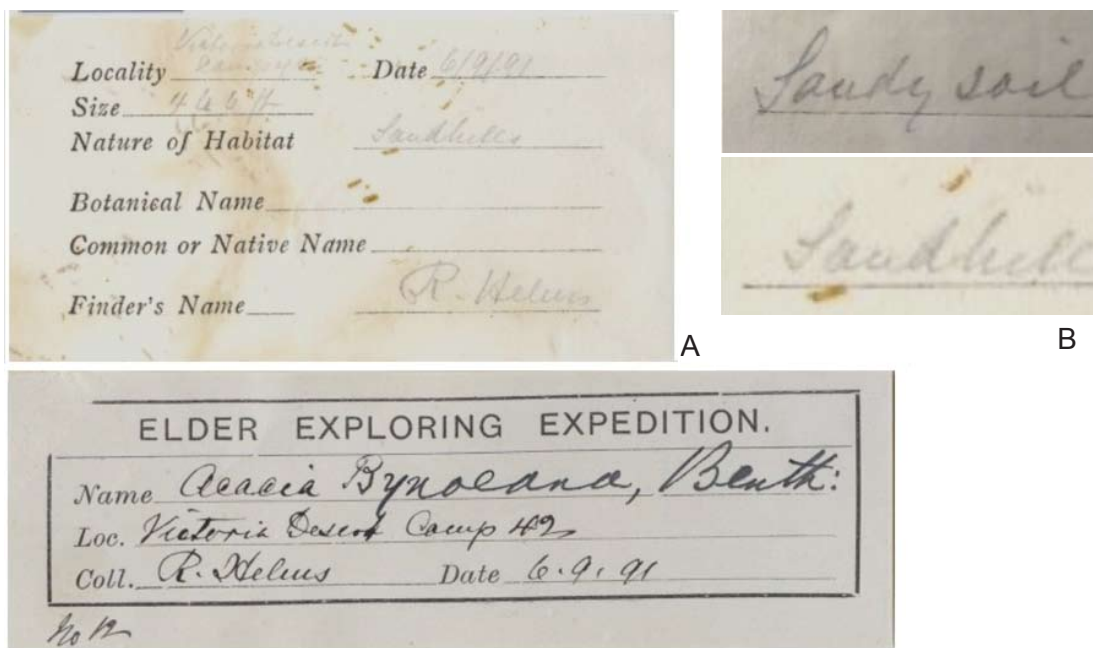


Fig. 1. A. Labels on specimen of *Acacia helmsiana* Maiden, AD97729050; upper: field label (poorly legible as is typical for the expedition labels); lower: expedition distribution label. B. upper: detail from field label of *Conospermum distichum* R.Br., NSW 91699; lower: detail from the AD 9772950 field label.

From JSTOR Global Plants (Web ref. 2); B top, courtesy of Lisa Woods, Botanic Gardens Trust, Sydney

nor do we know whether Lindsay and the other expedition staff routinely collected specimens recorded under Helms' name, especially when Helms was on side-trips, for example from 11–17 June (Lindsay 1893: 30–35); we have not made an exhaustive search and there might be some field labels recording examples.

Some specimens from the expedition have three labels, for example AD 97729050 (*Acacia helmsiana* Maiden). In addition to a modern typed herbarium label, there are two others (Fig. 1A). These labels indicate something of the way collecting and then distributing specimens was handled. The distribution label identifying the specimen as from the "Elder Exploring Expedition" was almost certainly completed by Helms in Adelaide. In this case Helms had also completed the field label, but it is not safe to assume that all field labels were completed by the "Finder": the hand that completed the field label on NSW 91699 showing Lindsay as the "Finder" matches that of Helms (Fig. 1B). We have not seen an Elder Exploring Expedition label not completed by Helms, even in the case of specimens attributed on the label to P.A. Gwynne (sic), for example MEL 152957 (*Conospermum toddii* F.Muell. & Tate var. *gwynnii*), or R. Ramsay,

for example AD 98223526, AD 97351280 and MEL 42967 (*Prostanthera baxteri* var. *sericea* J.M.Black).

The original field label can of course accompany only one of several duplicate specimens of a collection. For example, there are nine images of *Acacia helmsiana* Maiden on JSTOR Global Plants, with the specimen AD 97729050 at the State Herbarium of South Australia (Web ref. 2) having the field label as well as the Elder Exploring Expedition one. Some of the specimens lack the Elder Exploring Expedition label, perhaps as they were fragments taken from one already so labelled; for example, two of the three specimens in Sydney have the Elder distribution label (NSW 143835, 830706), the other does not (NSW 207694). One of the two specimens of *Conospermum distichum* R.Br. in the Western Australian Herbarium (PERTH 01787632) attributed to Lindsay, Esperance Bay, October 1891, is clearly a fragment taken at a later date from a specimen at MEL; the other specimen (PERTH 01787098), also almost certainly a fragment provided after the initial distributions were made, is attributed to Helms with no locality data, and the only statement of origin is '?Elder expedition'. Its labels show that the specimen

arrived in PERTH via the Herbarium of the Department of Agriculture, WA, but how it arrived there is unknown, and probably unknowable.

Thus, while it is not always possible to use the field label as a check on the name of the field collector, that is “Finder” in the terminology of the Expedition, the history of the expedition has helped resolve some issues and its journal should be consulted if identification of the field collector is critical. Since the mapped side trips include neither Lindsay’s visit to Esperance Bay in October 1891, nor Gwynne’s evacuation in November, the details in Lindsay’s text have greater importance.

Given that the Elder Exploring Expedition labels do in many cases attribute specimens correctly to Gwynne and Ramsay from localities where some are erroneously attributed to Helms, and that there is no obvious advantage that Helms could have gained from misattributing them, the most likely explanation for discrepancies is simply error when Helms completed the expedition labels, inadvertently, perhaps almost automatically, completing the collector space as “Helms”. *NSW 91699 (Conospermum distichum)* and *MEL 68281 (Darwinia luehmannii)* either lack, or have an incomplete, expedition label; it is not surprising then that the herbariums’ own labels attribute the specimens to Helms, as they came from the aggregated collection that he was responsible for forming, processing and distributing.

The Helms case is not unique. For example, Lucas and Lucas (2014: 67–68) give examples of misattribution of Mueller as the collector of botanical specimens and discuss the ambiguities inherent in “collector” and “collection”. Nor is the problem restricted to botanical specimens. Except for about half a dozen of the many thousands of zoological specimens attributed to Mueller as collector, there is much evidence that he was a middleman distributing collections made by others, sometimes at his instigation (Lucas 2014). For historians, as well as systematists, collection labels are not an infallible guide to the collector.

Acknowledgements

We are grateful to Lisa Woods for providing images of labels from NSW; Herbarium Enquiries staff provided images of the specimens in PERTH; and Pina Milne provided access to MEL specimens examined. JSTOR Global Plants has been invaluable, as have the images on the Kew

herbarium catalogue.

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- Web ref. 1. <http://nla.gov.au/nla.obj-231430209/view>
- Web ref. 2. <http://plants.jstor.org/stable/10.5555/al.ap.specimen.ad97729050>; accessed 30 November 2017

Postscript to Lucas and Holme, “Misleading labels ...”.

We welcome this item about the Elder Exploring Expedition collection, the problems of which we in the State Herbarium of South Australia (AD), and undoubtedly other herbaria in Australia, are very much aware.

The duplicates of this expedition were circulated widely and there are in the region of 1800 specimens in AD, quite a number of them being duplicates of the same gathering.

For the last couple of years Graham Bell has had a very competent group of volunteers extracting and documenting all the Helms material that is distributed throughout the AD collections. The intention is to try and make some sense of them all and make this information available. This has been no small task, with some of the difficulties encountered being expressed in this article.

Eds.



XIV Australian Bryophyte Workshop 23 – 28 September 2018

Australian Bryophyte Workshops are generally held every two years and aim to present opportunities for those interested in learning about bryophytes to meet and exchange knowledge in different environments. This year, the XIV Australian Bryophyte Workshop will be held in the Big Scrub region of north-eastern New South Wales, based at Dorrroughby, about 200 km (125 miles) south of Brisbane, and 120 km (76 miles) south of the regional Gold Coast Airport.

The Big Scrub was the largest area of subtropical lowland rainforest in eastern Australia until it was intensively cleared for agricultural use in the 19th century. Only a few remnants survive, with less than 1% of the former extent remaining. The core Big Scrub areas consisted of an estimated 900 km² of subtropical rainforest on fertile basalt and floodplain derived soils. The area lies within the lands of the Bundjalung Aboriginal Nation.

One of New South Wales' greatest authorities on mosses, W W Watts (1856 – 1920), collected prodigiously in the Big Scrub while based at Ballina from 1896 – 1903, and the workshop will commemorate his pioneering spirit as it is almost a century since his death.

Daily field trips will include a variety of ecosystems, including remnants of the Big Scrub and wet and dry sclerophyll forest. Collecting will be permitted with approval from NSW National Parks and Wildlife Service regional managers.

Accommodation will be at the Dorrroughby Environmental Education Centre, 2101 Dunoon Road, Dorrroughby, from Sunday 23rd, departing Friday 28th September, 2018.

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Alison Downing (alison.downing@mq.edu.au)*



ABRS report

Staff updates

Peri Bolton will join the ABRS on a four month project from mid-March 2018, to assist with establishing governance and workflow processes for managing content on the new digital Flora of Australia platform (FoA, Web ref. 1). Peri is currently an Endeavour Postdoctoral Fellow at East Carolina University, USA. Tony Orchard continues to provide volunteer associate editorial support for the FoA.

Flora of Australia

The ABRS continues to update and add new information to the FoA, including to align taxon concepts with the Australian Plant Census. In 2018 the ABRS is planning a project to establish governance frameworks and workflow processes for managing FoA biodiversity information. This includes careful mapping of the dynamic interaction of components of the FoA, including distribution maps, images and keys. This will inform the developing FoA Contributor Guidelines, which will help build content in a consistent manner.

User support for the new digital FoA is available online (Web ref. 2). Please contact the ABRS at abrs@environment.gov.au with any feedback about the FoA content and platform functionality, or if you would like to contribute any new taxon profiles, or update existing descriptions.

Bush Blitz

The second phase of Bush Blitz ended in December 2017. Discussions are underway about a possible new 5-year phase of Bush Blitz. Outcomes of these discussions are to be announced in the coming months.

Results of a competition to name a new species

of jumping spider are to be announced shortly. The species was found by researchers on a Bush Blitz expedition in Queensland in 2017. Nearly 2000 entries were received and the shortlisted finalists are being considered by the Minister for the Environment and Energy. Keep an eye on the Bush Blitz Instagram account ([@BushBlitz](https://www.instagram.com/BushBlitz)) to find out the winning name!

Grants

The 2018-19 National Taxonomy Research Grant Programme (NTRGP) Research Grants and Capacity-Building Grants rounds closed on 2 November 2017. 16 flora and fauna projects were recommended by an independent expert panel and approved for funding. Projects will commence in July 2018.

The NTRGP Student Travel Grants round will be promoted in late March 2018. These grants provide financial support to postgraduate students studying at Australian institutions to travel to a national or international conference or workshop relevant to systematics or taxonomy. More information about the NTRGP is available on the ABRS website (Web ref. 3).

The 2017–18 Bush Blitz Tactical Taxonomy grant projects have now commenced. A list of successful grant recipients is available on the Bush Blitz website (Web ref. 4).

References

Web ref. 1: www.ausflora.org.au

Web ref. 2: <https://ausflora.net/>

Web ref. 3: www.environment.gov.au/science/abrs/grants/

Web ref. 4: www.bushblitz.org.au/grants

Zoe Knapp & Anthony Whalen
February 2018

News

ASB papers to be available sooner

Brietta Pike, Journals Publisher at CSIRO Publishing has indicated that *Australian Systematic Botany* will start to publish early access papers this month! Papers will be published as soon as they are type-set and paginated, and in advance of issue release. The editors have worked hard to ensure the early access publication will comply with the requirements of the ICN in terms of publication of taxonomy. Early access publication means that content will be made

accessible to readers sooner!

Reviewing plant taxonomy manuscripts

Juliet Wege canvassed the idea of a workshop on how to review taxonomic manuscripts and eFlora treatments on the ASBS Facebook page and it has since been announced that such a workshop will precede the main ASBS Conference in Brisbane on 3–7 December 2018. See conference notice on p. 31 or visit the website at <https://systematics.ourplants.org>.

“Our horror bureaucratic bungle”

On February 23rd 2018 *The Sydney Morning Herald* provided an analysis of the process which led to the destruction by Australian biosecurity authorities of herbarium specimens sent on loan from the Muséum National d’Histoire Naturelle (P) in France and from New Zealand [CHR], and the resulting ramifications (Web ref. 1, 2). Let’s hope the lesson is now learned and it never happens again.

Web references

- 1: <https://www.smh.com.au/lifestyle/would-you-burn-the-mona-lisa-if-it-was-sent-our-horror-bureaucratic-bungle-20180213-h0w0w3.html>
- 2: <https://www.youtube.com/watch?v=51736bJT0nM>

Publicity for the ABRS report on systematics

The ABRS report *State of the science of taxonomy in Australia: results of the 2016 Survey of Taxonomic Capacity* did receive some publicity in the media in January 2017. *The Sydney Morning Herald* was again the vehicle for this and their account of this little heralded report (not even mentioned in our own report from ABRS) would have given some cause for thought to any systematists who were not already involved in the *Decadal Plan for Taxonomy and Biosystematics*. References to Federal funding as being “absurdly small” and “basically unchanged since the ABRS was set up” in the late 1970s, to taxonomists as being “awesomely committed”, as “overworked and underpaid”, if they are paid at all, to decreasing numbers of experts and the lack of job opportunities for graduates are the very factors which contributed to the mobilisation of systematists some years ago.

Web ref.: www.smh.com.au/environment/animals/absurdly-small-taxonomy-funds-shrivel-amid-rising-threats-and-discoveries-20180124-h0nhzn.html

More recognition for Patrick Brownsey

We reported last year (*ASBS Newsletter* 170) that Pat Brownsey had won the *NZ Journal of Botany* researcher award for 2016 (Web ref. 1), and of course he was the recipient of the ASBS Nancy T. Burbidge medal recently in Adelaide (Web ref. 2). Even more recently he has been elected as a Fellow of the Linnean Society (FLS) of London. This is a prestigious honour. To become a Fellow, you have to be nominated by at least two other Fellows, and then your nomination must be accepted by the Linnean Society as a whole at a ballot. New Zealand is probably home to only about 10–20 Fellows of the Linnean

Society, including at least three at Te Papa! All three of these honours recognise Pat’s massive contribution to New Zealand botany over the course of his career. So, the next time you see Pat, make sure you congratulate him on these well-deserved recognitions. [Information contributed by Heidi Meudt].

Web references

- 1: <http://blog.tepapa.govt.nz/2017/02/07/te-papa-scientist-wins-research-award/>
- 2: https://www.tepapa.govt.nz/about/news/botanist-pat-brownsey-wins-nancy-t-burbidge-medal-adelaide_

Award for Joseph Banks’s *Florilegium*

Congratulations to Mel Gooding, David Mabberley and Joseph Studholme, authors of *Joseph Banks’ Florilegium: Botanical Treasures from Cook’s First Voyage*. The American Botanical Council has awarded the book the 2017 James A. Duke Excellence in Botanical Literature Award in the consumer/popular category. The award is given annually to books contributing significantly “to the medicinal plant-related literature, and the fields of botany, taxonomy, ethnobotany, phytomedicine, and other related disciplines”. The citation reads:

This award acknowledges the tremendous historical value offered by Banks’ collection and documentation of plants from around the world, particularly the South Pacific, Australia, and Java, as well as their beautiful renderings and the work involved in their full-color publication. This artistic and informative text is a milestone in botanical publishing and a worthy addition to any botanical library.

This is the second time one of David’s books has received the award. The third edition of Mabberley’s *Plant Book* won in 2008. Karen Wilson provided a review of Joseph Banks’s *Florilegium* in *ASBS Newsletter* 172, quite coincidentally also with a review of the 4th edition of Mabberley’s *Plant Book*. [From information supplied by John Clarkson]

Another benchmark for academics to reach

Research performance has traditionally been gauged on the number of publications, the number of citations any publication receives, grants won etc. From this year, Australian Research Council (ARC) grant applications have an additional element – the requirement to prove that the research has benefit to taxpayers and the government.

Web ref. <https://theconversation.com/starting-next-year-universities-have-to-prove-their-research-has-real-world-impact-87252>

Phytophthora and kauri in New Zealand

New Zealand Geographic has a comprehensive article on the present threat to kauri of a species of *Phytophthora* which is specific to it.

Web ref.: <https://www.nzgeo.com/stories/the-last-of-the-giants/>

And it's raining awards for John Clarkson...

Congratulations to John Clarkson. Remember he left the Adelaide ASBS meeting with a weeds conference to follow the next week in Port Douglas. During the 14th Queensland Weed Symposium he was awarded the prestigious Weed Society Queensland Award "in acknowledgement of his outstanding contribution to weed and pest animal science and management." John was nominated for the award by peers and colleagues in QPWS and CSIRO and it was presented to him by his colleague and sometimes collaborator Dr

Tony Grice.

But that's not all ... In January John's 50 years with the Queensland Public Service was recognised with a trip to Brisbane and the presentation of a plaque to mark the occasion. He was also presented with an original William T. Cooper painting of fruits of *Corymbia clarksoniana* from Iron Range which have been eaten by palm cockatoos (Fig. 1). As he says, the choice was just right – "a plant named for me, from a very special place on Cape York Peninsula, eaten by one of the area's iconic birds, the palm cockatoo, and painted by a friend and neighbour."

The Chief Scientist on Australia's first citizen scientist

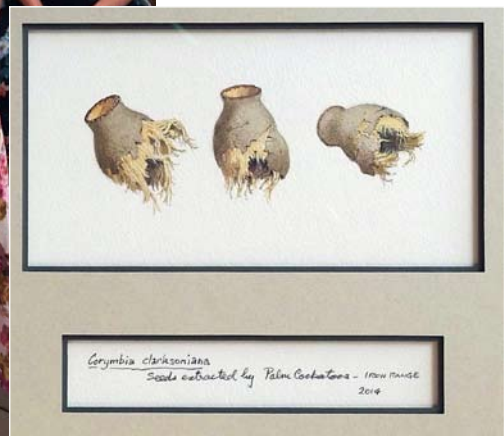
On February 7th 2018, the Chief Scientist, Dr. Alan Finkel, used Ferdinand Mueller as his example of the first citizen scientist in Australia in an address to the Citizen Science Conference 2018 in Adelaide.

Web ref.: <https://theconversation.com/how-a-german->



Fig. 1. John Clarkson at the presentation with Wendy Cooper, wife of the late artist; John's wife Marion is in the right background.

Artwork reproduced with permission of Wendy Cooper



migrant-planted-citizen-science-in-australia-and-why-it-worked-91385

The 8 million species we don't know

E.O. Wilson's article with this title appeared in the *Sunday Review* (Web ref. 1) of the *New York Times* on March 3rd 2018. Below are some quotes from the article which drew attention to a new project Half-Earth (Web ref. 2), which asks for a commitment of half of the planet's surface to Nature.

The extinction of species by human activity continues to accelerate, fast enough to eliminate more than half of all species by the end of this century.

We have to enlarge the area of the Earth devoted to the natural world enough to save the variety of life within it...to keep half the land and half the sea of the planet as wild and protected from human intervention or activity as possible.

To effectively manage protected habitats, we must also learn more about all the species of our planet and their interactions within ecosystems. By accelerating the effort to discover, describe and conduct natural history studies for every one of the eight million species estimated to exist but still unknown to science, we can continue to add to and refine the Half-Earth Project map, providing effective guidance for conservation to achieve our goal.

Web references

- 1: <https://www.nytimes.com/2018/03/03/opinion/sunday/species-conservation-extinction.html>
- 2: www.half-earthproject.org/

Response to Garnett & Christidis's taxonomy undermining conservation

A further response by 184 taxonomists, mostly zoologists, from 37 different countries to the assertion that taxonomy was undermining conservation and proposing a new system for governing taxonomic change (*ASBS Newsletter* 171) was published in *Plos Biology* in March 2018 (Thomson et al., 2018). Within the paper there are references to a further seven papers which oppose this move for reasons which are obvious to most biologists. It's a pity that so much time and effort needs to be spent by taxonomists in defending present practices.

References

- Thomson SA, Pyle RL, Ahyong ST, Alonso-Zarazaga M, Ammirati J, Araya JF, et al. (2018) Taxonomy based on science is necessary for global

conservation. *PLoS Biol.* 16(3):e2005075. <https://doi.org/10.1371/journal.pbio.2005075>

Garnett ST, Christidis L. Taxonomy anarchy hampers conservation. *Nature.* 2017; 546(7656):25±27. <https://doi.org/10.1038/546025a> PMID: 28569833

No need to save endangered species!

In the last issue of the *Newsletter* (173, p. 29) attention was drawn to an article in the *Washington Post* by R. Alexander Pyron, an American professor of biology, who indicated that there was no necessity to save endangered species because extinction was part of evolution. There was an immediate global outcry but here is a rebuttal by Carl Safina together with the comments of others.

Web ref.: <https://e360.yale.edu/features/in-defense-of-biodiversity-why-protecting-species-from-extinction-matters>

Thismia in western Sarawak

There have been lots of articles on the web re the rediscovery of a *Thismia* species first collected by Beccari in 1866 in Borneo and not seen since. Karen Wilson drew attention to it on ASBS Facebook. *Thismia* is a bizarre genus of myco-heterotrophs belonging to the Burmanniaceae and rarely encountered – just Google “*Thismia* images” and you will get some idea of their strangeness.

Thismia neptunis, as many of its congeners, is a poorly understood species that has only been known from the type collection and its limited original description. In January 2017 it was rediscovered in the type area in the Gunung Matang massif, western Sarawak, Borneo, Malaysia. The paper provides the amended description and drawings of the species, very first available photographs and short notes on taxonomy and historical context of Beccari's work on *Thismia*. [from the Abstract].

Web ref.: <https://biotaxa.org/Phytotaxa/article/view/phytotaxa.340.1.5>

A new global flora

Many of you will have heard by now about the new Global Flora project which began in January this year (Web ref.) with the publication of a particularly colourful New Phylogeny of the Angiosperms poster and five volumes. The latter consist of an Introduction (volume 1), and the treatments of three monotypic families, Petenaceae, previously treated as part of Elaeocarpaceae, Amborellaceae, previously Monimiaceae and Barbeuiaceae, previously

included in Phytolaccaceae, as volumes 2, 3 and 5 respectively.

But it is the Special Edition, volume 4, GLOVAP Nomenclature Part 1, which has already sparked quite a lot of discussion, in Australia at least, by making, amongst others, all of the necessary combinations for the transfer of *Grevillea* into *Hakea*. In total there are 3286 new combinations and 415 new names in various families in the volume with the promise of many more such changes to come since the editors' policy is to recognise only monophyletic groups. So far surprisingly little reaction has been in evidence

in the botanical media but that may well have changed by the next issue of the *Newsletter*.

Web ref.: www.plantgateway.com/globalflora/

Twelve Postdocs available at Kew

Applications for Early Career Research Fellowships close on 8th April.

Web ref. <https://careers.kew.org/vacancy/early-career-research-fellowships-344760.html>

Items of interest

Did the bombing of the Berlin Herbarium cause angst for PNG botanical collectors?

Jim Croft drew attention to the destruction of the Botanisches Museum in Berlin (B) in March 1943, 75 years ago, on ASBS Facebook (Web ref. 1). He blamed this event for the fact that he along with every other botanist who worked in Papua New Guinea had to collect numerous replicates (up to 20) of each collection for wide distribution. He indicated that this was because so many PNG species were described from unicate specimens in B during the German colonial period from 1884 until 1914. The normal practice of almost every British colonial and Australian expedition from Banks's time was to collect sets of plants. The Elder Scientific Exploration Expedition (Council... 1891), and Goyder's Northern Territory Expedition (Web ref. 2) are but two examples. The collection of such large numbers of duplicates was also practiced by independent collectors such as James Drummond and Ludwig Preiss. I wonder therefore whether Jim's version is an urban myth.

References

- Council of the Royal Geographical Society of Australasia, South Australian Branch (1891). *Handbook of instructions for the guidance of the officers of the Elder Scientific Exploration Expedition to the unknown portions of Australia*. W.K.Thomas & Co.: Adelaide (p. 18).
- Web ref. 1: <https://www.facebook.com/NuggetsOHistory/photos/a.487283761605987.1073741856.336907749976923/584603958540633/?type=3&theater> (posted 28th February)
- Web ref. 2: *South Australian Chronicle and Weekly Mail*, 12th June 1869, p. 8. <https://trove.nla.gov.au/newspaper/article/91267030>

Herbarium in jeopardy

... Not for the usual reasons this time, but from vandalism. The herbarium concerned is the National Herbarium of Venezuela (VEN).

According to a September 2017 report (Web ref.) the vandalism is a result of Venezuela's fragile economic and political situation, and has led the research institute at the Caracas Botanical Garden (the IEJB), which hosts the herbarium, to suspend access to it. The institute's electrical and computing facilities have been repeatedly plundered this year, wiping out databases and compromising the herbarium's collection of more than 400,000 specimens.

Web ref.: <https://www.nature.com/articles/549031b>

Missing information in insect taxonomy papers

An item in *Nature* (Web ref. 1) draws attention to a paper (Packer et al. 2018) indicating that taxonomic best practice is not presently being adhered to in entomological journals. Suggestions are made for improvements.

The proportion of papers that provide taxonomic data in sufficient detail to permit precise validation of taxonomic identifications is vanishingly small: most did not cite identification methods, most did not state whether identified material had been vouchered, and taxon concepts were almost universally absent in non-taxonomic papers. Overall, the combination of all three factors was provided less than 2% of the time and almost two-thirds of all papers provided none of the three. [From the Abstract]

References

- Packer, L., Monckton, S.K., Onuferko, T.M. & Ferrari, R.R. (2018). Validating taxonomic identifications in entomological research. *Insect*

Conserv. Divers. 11: 1–12.

Web ref.: <https://www.nature.com/articles/d41586-018-01541-0>

Algae in the very first book of photographic images

The first book of photographic images to be published involved algae. The collation of “cyanotypes”, *Photographs of British Algae: Cyanotype Impressions*, was produced in 1843 by Anna Atkins, English botanist and photographer, using her seaweed collection. Accessible on-line are a demonstration of the technique she used in an article about her (Web ref. 1) and some of the early results of her work (Web ref. 2). Given the dates involved, Anna Atkins was a remarkable woman. With another pioneer, Anne Dixon, she produced two more books using the same techniques, *British and Foreign Ferns* in 1853 (Web ref. 3) and *British and Foreign Flowering Plants and Ferns* in 1854.

Web references

- 1: <https://www.botany.one/2018/03/anna-atkins-photographic-pioneer/>
- 2: <https://publicdomainreview.org/collections/cyanotypes-of-british-algae-by-anna-atkins-1843/>
- 3: www.getty.edu/art/collection/objects/32412/anna-atkins-cyanotypes-of-british-and-foreign-ferns-photographic-title-page-british-1853/ [scroll down]

Snotty gobbler as a weed controller?

No, in this case a *Persoonia* species is not being referred to, but a *Cassynia*, which is what South Australians mean when using this common name. For some time now *Cassynia pubescens* R.Br. (Cirocco et al. 2017; Web ref.) which is native to the eastern states and wetter south-eastern part of South Australia, has been under investigation in South Australia as a possible biocontrol agent of introduced European weeds such as gorse, blackberry and Scotch broom. It has been found to be effective against the introduced plants while not affecting a limited sample of native flora. If it does end up being used for this purpose in areas where it is native, we may have a new classification to account for in our censuses. That's if we can distinguish it from native populations at all. But what would we call it? Perhaps an assisted native?

References

- Cirocco, R.M., Facelli, J.M. & Watling, J.R. (2017). Does nitrogen affect the interaction between a native hemiparasite and its native or introduced leguminous hosts? *New Phytologist* 213: 812–821. <https://doi.org/10.1111/nph.14181>

Web ref.: www.abc.net.au/news/rural/2016-10-17/snotty-gobbles-up-weeds/7939640

“Burning the library of life”

A relatively short article by Canadian scientists (Legagneux et al., 2018) indicates that climate change receives much more media coverage than biodiversity loss even though both pose a threat to the Earth as we know it and have probably already reached their tipping points. They ask what biodiversity loss advocates can learn from climate change advocates when it comes to getting their messages into the media. One of the suggestions was the use of metaphors, one of them being used in the heading of this article; it was coined along with others by Valiverronen & Hellsten (2002) and also appears in a recent article explaining biodiversity and why it matters in *The Guardian* (Web ref.)

References

- Legagneux, P., Casajus, N. et al. (19th Jan. 2018). Our House Is Burning: Discrepancy in Climate Change vs. Biodiversity Coverage in the Media as Compared to Scientific Literature. *Front. Ecol. Evol.* <https://doi.org/10.3389/fevo.2017.00175>
- Valiverronen, E., and Hellsten, I. (2002). From “Burning Library” to “Green Medicine”: the role of metaphors in communicating biodiversity. *Sci. Commun.* 24, 229–245. <https://doi.org/10.1177/107554702237848> (not freely accessible).
- Web ref.: <https://www.theguardian.com/news/2018/mar/12/what-is-biodiversity-and-why-does-it-matter-to-us?>

ARC Centre of Excellence for Environmental Decisions (CEED)

Begun in 2011 the vision of the ARC Centre of Excellence for Environmental Decisions (CEED) is to be the world's leading research centre for solving environmental management problems and for evaluating the outcomes of environmental actions. They benefit environmental science, policy and management across Australia and around the world by solving complex problems of environmental management and monitoring in a rapidly changing and uncertain world. [From their website]

Some of you may be interested in their Boden Research Conference to be held 8–9th May 2018 in Canberra (Web ref. 1)

What took my eye was the inaugural online Twitter Conference (#CEEDTC2018) to be held on World Biodiversity Day, 22nd May 2018 with a focus on Environmental Decisions (Web ref. 2).

Another of their projects is *eBird Australia* which contributes to a global sightings listing.

Web references

1. Ecological surprises and rapid collapse of ecosystems in a changing world. *www.boden2018.com*
2. <http://ceed.edu.au/about-ceed.html>

New Zealand Birds Online

Subtitled *Digital Encyclopaedia of New Zealand Birds*, this site (Web ref.) provides a great resource for identifying the country's 467 birds. The database can be searched by name (common, scientific or by group), by broad (e.g. Canterbury) or narrow (e.g. Avon-Heathcote Estuary in Christchurch) distribution or by conservation status. There is also a simple key based on selection of the habitat where the bird was seen followed by selection from images of bird groups based on photographs. Fact sheets for each of the species are incredibly well populated with facts, photographs, bird calls and a distribution map. There was clearly a great deal of work and planning put into the site prior to its launch in 2013 by project manager and editor, Colin Miskelly, and a whole host of volunteers. It continues to be managed by an agreement between Te Papa, Birds New Zealand and DOC, with the website hosted on the Te Papa website, and Birds New Zealand taking the lead on content management and updates. A great collaborative effort.

Web ref.: <http://nzbirdsonline.org.nz/>

Palaeo-bits

Butterflies and moths older than previously thought

The earliest known fossil evidence of butterflies and moths has been found in Germany, showing they lived at least 50m years earlier than previously believed and challenging one of the most popular beliefs about their evolution. [From Web ref. 1; information based on Eldijk et al. (2018)]

Six of the best

The *Guardian's* team has nominated their favourite fossil finds of 2017 from around the world (Web ref. 2).

Fossil leaves providing information on extinct plant relationships

Molecules found in the waxy membrane of the leaf surfaces of modern leaves analysed with Fourier transform infrared (FTIR) spectroscopy were found to have a biomolecular signature reflecting their plant grouping. Application of the same technique to fossil leaves where these

molecules still persist indicated that they also grouped "according to well-established botanical relationships, based on DNA analysis of living plants". Supposed relationships of some extinct groups with their modern relatives have been found to be supported in some cases, but not others. Bob Parsons drew this paper to my attention. You can read the popular account (Web ref. 3) or the paper from which it is drawn (Vaida et al. 2017).

Migrating megafauna

It seems like *Diprotodon* may have been migratory and they may have had a preference for C4 rather than C3 shrubs (DeSantis et al. 2017; Price et al. 2017; Web ref. 4).

Trump decision mobilises palaeontologists

Proposed cuts to two US National Monuments, Grand Staircase-Escalante and Bears Ears, by President Trump have placed America's fossil heritage in jeopardy. This has resulted in ongoing protests and court action (Web refs. 5, 6).

References

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- Price, G., et al., 2017. Seasonal migration of marsupial megafauna in Pleistocene Sahul (Australia–New Guinea). *Proceedings of the Royal Society B* 284 (Login required)
- Uglesich J, Gay RJ, Stegner MA. (2017) Paleontology of the Bears Ears National Monument: history of exploration and designation of the monument. *PeerJ Preprints* 5:e3442v1 <https://doi.org/10.7287/peerj.preprints.3442v1>
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- Web ref. 1. <https://www.theguardian.com/science/2018/jan/10/fossil-evidence-reveals-butterflies-and-moths-lived-50m-years-earlier-than-thought>
- Web ref. 2. <https://www.theguardian.com/science/2017/dec/28/top-fossil-discoveries-of-2017>
- Web ref. 3. <https://www.sciencedaily.com/releases/2017/07/170704093916.htm>

Web ref. 4: <https://www.theguardian.com/world/2017/dec/20/make-way-for-megamarsupials-the-migration-of-australias-extinct-megafauna>

Web ref. 5: <https://www.theguardian.com/science/2017/dec/13/why-are-palaeontologists-suing-trump>

Web ref. 6: <https://theconversation.com/president-trumps-national-monument-rollback-is-illegal-and-likely-to-be-reversed-in-court-88376>

Whimsy – from JSTOR

Essays from *The Public Domain Review* are occasionally mentioned in the weekly JSTOR email and thanks to investigating this site further I have broadened my knowledge about a couple of issues. Which is exactly the purpose of this site based on works which are now in the public domain.

The Public Domain Review is an online journal and not-for-profit project dedicated to the exploration of curious and compelling works from the history of art, literature, and ideas... With a focus on the surprising, the strange, and the beautiful, we hope to provide an ever-growing cabinet of curiosities for the digital age...

Web ref. <http://publicdomainreview.org/>

Snowflake Man

An image from childhood, almost certainly courtesy of Enid Blyton: snowflakes are always hexagonal and no snowflake pattern is the same. The first image of a snowflake (Web ref. 1) was only published in 1885 thanks to a farmer, Wilson Alwyn Bentley, aka the Snowflake Man, in Vermont, USA. By the time he died in 1931 Bentley had published images of 5000 snowflakes. In a report in 1925 he indicated that no two snowflakes were ever the same. So Enid Blyton might not have been politically correct but she did keep up with the science of the time!

Web ref.: <http://publicdomainreview.org/2011/02/14/the-snowflake-man-of-vermont/>

Macaroni and Banks & Solander

Ever wondered why Joseph Banks was portrayed in satirical images of 1772 as The Botanic Macaroni (Web ref. 1) and The Fly Catching Macaroni (Web ref. 2) and Solander as The Simpling Macaroni (Web ref. 3). You can find out more about the use of the term macaroni and the “Maccaroni club” and why the term developed during the late 1700s from a *Public Domain Review* article (Web ref. 4), but it concentrates more on effeminacy and sexual preference and does not mention Banks and Solander. For an

understanding of why Banks and Solander were characterised in this way Gascoigne (2003) has a wonderful account of the politics of the time and further of the bitter fight that was to split the Royal Society into men of science and macaronis. The book is partly available through Google books and the pages concerned (pp. 61-65) describe an attitude to our science that has probably never really gone away.

References

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Web ref. 1: <http://nla.gov.au/nla.obj-135987238/view>
Web ref. 2: www.britishmuseum.org/research/collection_online/collection_object_details.aspx?objectId=1592280&partId=1
Web ref. 3: <http://nla.gov.au/nla.obj-135988072/view>
Web ref. 4: <http://publicdomainreview.org/2017/02/22/a-queer-taste-for-macaroni/>

Beatrix Potter

With the release of the animated version of the film *Peter Rabbit*, Beatrix Potter is once again back in vogue. JSTOR Daily has a short item (Web ref. 1) on the scientific side of this amazing lady but it is more a teaser for two earlier articles, Rudolf Schmid’s review of her scientific work in *Taxon* in 1999 and Catherine Golden’s portrait of her as a “Naturalist Artist” in *Woman’s Art Journal* in 1990; both of these are linked to. Suffice to say, Beatrix was not impressed with many of the [male] scientists she encountered. You can also read more about Beatrix as a case study on the Australian Fungi pages written by Heino Lepp (Web ref. 2).

Web references

- 1: <https://daily.jstor.org/the-other-side-of-beatrix-potter>
- 2: www.anbg.gov.au/fungi/case-studies/index.html

The Broccoli Tree: a parable

Take a few minutes to have a look at this special tree, photographed daily for several years by Patrik Svedberg in Sweden, and with its own following on Instagram (Web ref. 1). A video updates the story of the tree (Web ref. 2).

Web references

- 1: <https://www.boredpanda.com/nature-photography-solitary-broccoli-tree-patrik-svedberg-sweden/>
- 2: <https://www.dpreview.com/news/5426476834/the-broccoli-tree-and-the-dangers-of-sharing-photos-of-the-places-you-love-online>

Web sites of interest

Science alert

Science alert is an Australian website where you can subscribe to a daily alert in whatever topic(s) interest you – Tech, Health, Environment, Space, Humans, Physics, Nature, Video or Politics & Policy. The range of topics is so wide that it's impossible to be representative but here are a few examples: wrapping glaciers in blankets; the stealing of the giant shark tooth fossil; the discovery of stromatolites in Tasmania; the *Thismia* story (see p. 21); the giant viruses of Brazil; what mega-slumps arising from melting of the permafrost in Siberia are revealing; the possible connection of the rocks around Georgetown in Queensland to those in Canada (pre Pangea); and some speculation on the bird-killing tree, *Pisonia grandis*.

Web ref. <https://www.sciencealert.com/>

Looking to the future of Science

Here are a couple of sites which look to the science and innovation of the future.

BBC Future Now

This site provides a somewhat scary look at the future, certainly with much food for thought, but not a whole lot to do with plants (Web ref. 1, 2). Topics such as: antibiotic resistance; are we running out of land?; what happens if we all become vegetarians; the world's most nutritious foods (including a ranked list of the top one hundred); and 33 ideas that will change the world.

Anthropocene – Innovation in the Human Age

A digital, print, and live magazine in which the world's most creative writers, designers, scientists, and entrepreneurs explore how [they] can create a sustainable human age [they] actually want to live in.

Anthropocene works with world-class veteran writers—as well a network of over 4,000 journalists in developing countries through a partnership with Earth Journalism Network. Through these networks, [they] scout innovative and often counterintuitive solutions to environmental and development challenges and craft in-depth stories about the people and technologies behind those innovations. [From their website].

This site (Web ref. 3) seems to be more involved with Nature: whether about rare frogs which have adapted to the man-made environment in Puerto Rico; whether local foods can be used to feed an urban world; tracking animal movements from the International Space Station; the Global Fishing Watch checking the scale of fishing in global waters; and the apparent decline in numbers of the bigger insect-eating birds, at least in North America. This last study was based on a comparison of museum specimens of the birds concerned with those of today (English et al. 2018).

References

English, P.A., Green, D.J. & Nocera, J.J. (2018).

Stable isotopes from museum specimens may provide evidence of long-term change in the trophic ecology of a migratory aerial insectivore. *Frontiers in Ecology and Evolution* <https://doi.org/10.3389/fevo.2018.00014>

Web ref. 1. www.bbc.com/future/now

Web ref. 2. www.bbc.com/future/gallery/20170905-33-ideas-that-will-change-the-world

Web ref. 3. www.anthropocenemagazine.org/

Plant Gateway Ltd

This is the site which has caused some angst amongst taxonomists in the last few weeks (see *News*). It is the home of a botanical consultancy based in the UK and the Netherlands run by James W. Byng and Maarten J.M. Christenhusz. The latter's name will be familiar to you as the first author of *Plants of the World* – an illustrated encyclopaedia of vascular plant families, mentioned in this and the previous newsletter and some of you will have met him on field trips to Australia or through his association with Curtin University. Reproduced below is some information taken from the website (Web ref.).

Our consultants teach innovative plant courses and undertake peer-reviewed taxonomic research across the globe. Our research is primarily focused on the higher classification of vascular plants but also involves preparing flora treatments, generating molecular sequence data and undertaking fieldwork. Plant Gateway also publishes practical botanical books and the

serial The Global Flora.

We collaborate with a wide range of public and private organisations worldwide, as seen in our peer-reviewed publications, and we contributed to the latest Angiosperm Phylogeny Group classification (APG IV) published in 2016.

Courses: In 2018 we will run plant identification courses in The Hague (Netherlands) and London (UK). These 1-day courses give participants an overview of the most commonly encountered plant families, as well as an introduction to plant morphology and identification skills. In addition, we are also organising a 1-day species discovery workshop in Leiden (Netherlands) which gives participants the opportunity to name and describe species new to science. Our courses are aimed at participants of all levels – from absolute beginners to those more experienced.

Hopefully this last blurb is not promoting the training of a person in one day to name and describe species new to science. That would belie the view that years of hard work are required to gain ultimate expertise in plant systematics. Frustrations with inadequately formulated taxonomies have been documented in these pages before (e.g. Thiele 2014; Barker, Barker & Waycott 2014).

References

Barker R.M., Barker B. & Waycott M. (2014).

In support of concern about poor taxonomic standards. *Austral. Syst. Bot. Soc. Nsltr* 158: 15–17.

Thiele K. (2014). Orchid taxonomy in Australia needs to lift its game. *Austral. Syst. Bot. Soc. Nsltr* 158: 13–15.

Web ref. www.plantgateway.com/

Comedy wildlife photography competition

For those of you who are photographers. The deadline is 30th June 2018. The challenge is to see whether anyone can get some flora in amongst all of the fauna which presently occupy this site. Or perhaps we can set up our own competition for plants!

Web ref. <https://www.comedywildlifephotography.com/>

Defending plants

If you only want to read fascinating facts about particular plants and view some wonderful photography of them as well, then the blogs on this site are great. There are also podcasts and videos which are probably equally as good but there are no titles on the videos, which seem to be mostly filmed in American woods and grasslands. As with the blogs, the podcasts are just added as they are made – most recent first. Just providing a separate list of titles would be very helpful to this user but I am informed that the site is probably just the repository for information referred to elsewhere through various social media sites. The number of followers of the site through Facebook is in excess of 33,000, and so there are clearly others who appreciate it as well.

Web ref. www.indefenseofplants.com/

Australasian Systematic Botany Society Inc.

Marlies Eichler Postdoctoral Fellowship

This grant aims to support research in systematic botany and the career development of recent PhD graduates, by providing top-up funds to researchers already successful in attracting other postdoctoral support.

Applications close on 31st July 2018

For further details see:

www.asbs.org.au/asbs/awards/marlies-eichler-postdoc.html

Miscellanea

Orchid snippets for those who don't study them

There is something fascinating about orchid pollination and here are some references to recent work in the field which also includes some remarkable photographs and some videos of the process.

First is some work on the bee orchids (*Ophrys*) which is primarily a combined morphological and next-generation DNA sequencing analysis in order to try and provide some taxonomic stability. The results do support monophyly for nine of ten previously recognised macrospecies (Bateman et al. 2018). What was more interesting was a discussion of pollination indicating a wider spectrum of pollinators than one for each of the 9 or 10 macrospecies recognised in the study and consequently extensive gene flow.

The second article is a blog (Web ref. 1) on the rather bizarre genus *Catasetum*, in which male and female flowers are found on separate plants in the 166 species and they differ quite considerably morphologically. There are images of some of the species and also a video of the transfer of pollinia on to the back of a bee.

The third article is a video discussion of orchid pollination by Dan Bickel (Australian Museum) with *Australian Geographic* photographer, Esther Beaton, showing a tiny chloropid fly transferring *Genoplesium* sp. pollinia which are about a quarter of their body length (Web ref. 2). It was filmed in 2008 and Esther Beaton has photographed other pollinators since that time (Web ref. 3).

The fourth article is reference to Rudi Kuitert's comprehensive work in Victoria with his myriad images of orchids and their pollinators. Information about his publications can be seen under New Books where there is also mention of Swarts and Dixon's *Conservation Methods for Terrestrial Orchids*.

The fifth article refers to an older paper (Singer et al. 2008) which discussed the prospects of use of orchid pollinia for taxonomic identification. This was the first time I had realised that not all orchids have pollinia!

And the sixth article has nothing and yet everything to do with pollination. It's a freely available global review (Hinsley et al. 2017) of

the trade in orchids and what effect this is having on their conservation.

References

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- Web ref. 1: <http://www.indefenseofplants.com/blog/2017/12/27/the-extraordinary-catasetum-orchids>
- Web ref. 2: www.australiangeographic.com.au/topics/science-environment/2012/08/video-bizarre-orchid-behaviours-revealed/
- Web ref. 3: <https://estherbeaton.photoshelter.com/>

Peer review

Derrick & Samuel (2018) is not a review of peer review of papers but rather of those who review research funding proposals and decide who is supported and who is not and whether the process as it exists now is even suitable for the purpose. It is a British study and a bit heavy going because of the terminology but it explores how evaluations by reviewers are influenced by external considerations.

Speaking of peer review and on a lighter note, Peter Wilson has reproduced a diagram on ASBS Facebook (Web ref. 1) indicating the outcomes of the peer review process and alongside it Andrew Whitehill has posted the link to "Scientific Peer Review, 1945", the Hitler parody video (Web ref. 2)

And then we have a thought-provoking article published in 2016 (Web ref. 3) on the seven biggest problems facing science and how we might fix them. It has a section entitled "Peer review is broken" as one of its problems, but at least suggests some possible fixes for this and the

other 6 problems mentioned. It also links to the best of Twitter's SixWordPeerReview (Web ref. 4), a competition held some years ago.

References

Derrick, E.G. & Samuel, G.S. (2018). Exploring the degree of delegated authority for the peer review of societal impact. *Science and Public Policy* 2018, 1-10: <https://doi.org/10.1093/scipol/scx091>

Web ref. 1: <https://www.facebook.com/photo.php?fbid=10215628067117496&set=gm.1576311072453635&type=3&theater>

Web ref. 2: <https://www.youtube.com/watch?v=-VRBWLpYCPY>

Web ref. 3: <https://www.vox.com/2016/7/14/12016710/science-challenges-research-funding-peer-review-process>

Web ref. 4: <https://storify.com/CambridgeCRIA/the-best-of-sixwordpeerreview>

The importance of being second

An interesting concept is being put forward by the editors of *PLoS Biology*. They are "formalizing a policy whereby manuscripts that confirm or extend a recently published study are eligible for consideration at *PLOS Biology*." Previously a second paper with the same finding as the first would not be considered for publication since there is no novelty attached to it. Now, in a change of this opinion, it is considered that "two papers from two groups independently identifying the same phenomenon in parallel increase the confidence in the results of the work".

References

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Coming conference

Mind the Gap

– 2018 Brisbane ASBS conference update

Planning for the 2018 ASBS conference in Brisbane is well underway. The conference will be held in the first week of December 2018 at the auditorium at the Mt Coot-tha Botanic Gardens in Toowong, right next to the Queensland Herbarium. The theme of the conference, 'Mind the Gap', aims to highlight gaps in systematics be they biogeographic, taxonomic, funding, data or other.

The conference will start on the Monday with a workshop on how to review (and to some extent write) taxonomic manuscripts and eFlora profiles, organised by Juliet Wege (PERTH). A huge thank you to Juliet for suggesting the idea and agreeing to take the lead (note to all - be careful what you say at conference dinners as people will remember and take you up on it!). We will then be holding three days of talks and posters, which will include lightning talk sessions for the posters. More information will be provided when abstracts and registrations open.

The conference will finish with a field trip on the Friday to Springbrook. After exploring options for the field trip we have settled on a day trip only, as the cost for an overnight adventure was going to be prohibitively expensive. If you are planning on

doing some plant collecting while you are up in Queensland please make sure you have obtained the appropriate collection permits. Information and application forms for permits to collect plants on protected land can be found at the Queensland Government web site (Web ref. 1). If you do not have one, you will not be allowed to collect!"

Thanks to Ainsley Calladine the website (Web ref. 2) is up and running. If you subscribed to last year's conference web-page posts then you should be subscribed again this year. Keep an eye on the ASBS facebook page and newsletters for more updates as the year progresses.

If you would like to visit the Queensland Herbarium before, during or after the conference, please contact Queensland.Herbarium@qld.gov.au so we can facilitate your visit.

We look forward to seeing you in Brisbane.

Web references

1. www.qld.gov.au/environment/parks/permits/science-education.
2. <https://systematics.ourplants.org/>

ASBS Brisbane 2018 organising committee
asbsbrisbane2018@gmail.com



5th NATIONAL POSTGRADUATE TRAINING WORKSHOP IN SYSTEMATICS

The University of Adelaide
8-13 July 2018

Sponsored by:

Australian Centre for Evolutionary Biology & Biodiversity (The University of Adelaide)
Environment Institute (The University of Adelaide)
Society of Australian Systematic Biologists
Australasian Systematic Botany Society
Australian Biological Resources Study

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

The workshop is designed for PhD students in the first half of their project, but applications will be accepted from anyone who is still within candidature. It is specifically designed for students undertaking projects that have a biological systematics component or are broadly relevant to systematics. There is a maximum of 30 places – available only to students enrolled in Australian and New Zealand Universities, on a first come basis. The registration fee is \$400 but this will be reduced when we know the amount of sponsorship received.

Expressions of interest (name, year PhD started, Department/School, project title) should be sent to Professor Andy Austin: andy.austin@adelaide.edu.au



Obituary

Doris Martha Sinkora (1927–2017)

– herbarium curator, phycologist, historian of botany

Sara Maroske

Doris Martha Sinkora (b. 14 June 1927; Fig. 1), a long-serving herbarium curator at Royal Botanic Gardens Victoria (RBGV), a phycologist and historian of Australian botany died on 31 December 2017 at her retirement home in Melbourne aged 90. An independent-minded and resilient person, Doris overcame the disadvantages of a disrupted education in Germany during World War 2, to restart life in Australia. Through her association with the RBGV, she became an expert in collecting and curating algae (seaweeds), and part of an international team of scholars researching the life and letters of Australia's greatest colonial scientist, Baron Ferdinand von Mueller.

Born in Düsseldorf, Germany, Doris was the oldest surviving child of Anton Hermann, a public servant, and Martha Maria Anna née Riess. She attended primary school in Düsseldorf followed by a convent secondary school. Doris's childhood coincided with the rise of the National Socialists (Nazis), but her family were not supporters. During the war a teenager Doris joined a group of Catholics who disseminated the anti-Nazi sermons of Bishop von Galen.

In 1943, Düsseldorf was bombed extensively by the Allies, and all children were evacuated. Doris and her three siblings went to their mother's hometown of Schwäbisch-Gmünd, where they stayed with relatives. Doris dreamed of becoming a doctor and travelling the world, but the disruption of war and her mother's disapproval of further education for girls meant that she

was destined for a couple of years at a technical college and early entry into the workforce.

After the war, Doris met a displaced Czech resident, Vladimir Šinkora. They married and migrated to Australia in 1949. Three children were born in Perth, but the marriage failed and, without consulting Doris, Vladimir took the children to Melbourne. Although she found them in Catholic institutions three years later, mother and children never lived together again as a family.

While working as a housekeeper for a Catholic priest in Kew, Doris saw an advertisement for a technical assistant at the National Herbarium of Victoria (MEL). Having made her own herbarium as a child, Doris was immediately attracted to the position. She in turn was a desirable candidate because of her proficiency in English and German (including Gothic script), and basic Latin. MEL contained tens of thousands of specimens acquired by Mueller with difficult to read annotations awaiting curation and interpretation.



Fig. 1. Doris Sinkora with Hans Heysen landscape, 1978

On 22 July 1968, Doris Sinkora commenced work as a temporary technical assistant at MEL. Initially, she worked under the direction of botanist Arthur Court, who introduced Doris to the Sonder herbarium, a vast collection of specimens accumulated by private collector and pharmacist Otto Wilhelm Sonder in Hamburg. Mueller persuaded the government of Victoria to purchase the herbarium, thereby raising MEL into an institution of international taxonomic significance.

Phycology

With the encouragement of Jim Willis, Assistant Government Botanist, Doris also developed a special expertise in, and affection for, the algae, richly represented in the Sonder herbarium. Algal specimens were a revelation to her; beautiful when laid out and a stark contrast to the stinking heaps of seaweed she found on beaches with millions of flies rising out of them. Eventually Doris handled all phycological loans and enquiries and systematically sorted and mounted specimens, adding her own translations and comments in a characteristic printing style, ending with a date and either 'D.S.' or 'D. Sinkora'.

In 1973, Doris was invited by phycologist Sophie Ducker to attend her eight-week course on seaweeds at the University of Melbourne. As Doris explained to the Director of the Garden, David Churchill: 'I am very interested in marine algae, and also I feel that attending this course would benefit my work at the National Herbarium' (Letter 5 June 1973, Sinkora papers, RBGV). Six years later she received a similar invitation from Bryan Womersley to attend his summer course on marine botany at the University of Adelaide. Doris's meticulous notes from this course survive at MEL (Sinkora papers, RBGV).

While MEL supported Doris in gaining further training about algae, she was not permitted to take the assessment for either of the university courses she attended so as to avoid any necessity to increase her pay.

The Adelaide experience, in particular, was very fruitful for Doris, and led to a more than three-decade collaboration with Womersley. She provided him with duplicates of her own specimens, and oversaw loans from MEL, many of which ended up being cited in his monumental *Benthic flora of southern Australia* (1984–2003). In a final phone call before he died, Womersley told Doris how much he appreciated and enjoyed their collaboration.

Doris used her annual holidays to collect marine algae along the Victorian coastline, often providing Womersley with the easternmost records of taxa. There are over 2,400 of Doris's specimens databased at MEL, with more than 1,700 duplicates at AD, mainly marine algae. Her collecting books reveal that she began in February 1969, and over the next decade her localities included: Balnarring (June 1969), Shoreham

(October 1971, November 1972), San Remo back beach and Griffiths Point (June–September 1970, November 1974, October 1975), Cape Woolamai (June and August 1970), Phelan Bluff (June 1970, October 1975), Lakes Entrance, Red Bluff Point and Cape Conran (January 1970), Point Lonsdale (November/December 1970, March 1971, April 1978), Walkerville, Waratah Bay, to northern Bays (February–March 1972, November/December 1973, February/March 1975, October 1975, February/March 1976, March 1977, February/March 1978, March 1979), Blairgowrie (November 1978) and Dromana (November 1978). Doris also collected along the south-east coast of South Australia, from Victor Harbor to Nora Creina Bay, in February 1979 (RB MSS 339.16, RBGV). After 1979 she made only a few dozen collections, including some lichens and fungi (AVH).

The planning and executing of collecting trips was made more difficult for Doris by her lack of a driver's licence. In 1993, while she was collecting at Merimbula on the southern New South Wales coast, the Greyhound Bus Company collapsed leaving her stranded by the side of the road. Fortunately Doris was able to make alternative arrangements to get home.

Doris's specimens of algae were meticulously prepared. She made initial determinations, and they were confirmed or corrected by Womersley. She numbered her specimens in pencil, usually at the top right corner, and prefixed the numbers with a capital A. Before incorporation into the MEL collections, the specimens were mounted on sheets and assigned MEL labels.

Doris collected the type of the red alga *Chondria hieroglyphica* Gordon-Mills & Womersley. While Womersley did not name any new taxa after Doris, one of his students, Jerry Kraft, corrected this oversight. *Sinkoraena* H.-B.Lee, J.A.Lewis, G.T.Kraft & I.K.Lee was published in 1997.

Baron Ferdinand von Mueller

Through her research on MEL collections, Doris discovered surviving batches of correspondence by Ferdinand Mueller (and also of Sonder) in institutions around the world. She was given permission to obtain copies of this correspondence and to provide translations into English where necessary so as to aid in the interpretation of MEL specimens.

David Churchill supported Doris to become

an accredited translator of German, and from 1979 she received an annual gratuity for this work. Herbarium manager and botanist Jim Ross informed her that the Public Service Board calculated the first sum owing to be \$85. 'I didn't send it on earlier', Jim told Doris about the news, 'in case it put you off your work! Anyway, don't go out and spend it all at once!' (Letter 23 February 1979, Sinkora papers, RBGV).

Doris also collaborated with botanist Bruce Muir to issue a bibliography of Mueller's publications in 1978. As Doris explained in an article in *Staff*, a magazine issued by the Department of Crown Lands & Survey:

Ever since his [Mueller's] death the lack of a bibliography has been frequently bemoaned by research workers trying to track down his publications. Now, with work on an up-to-date Australian Flora in view, the need for such a reference work has become even more acute (Sinkora 1978).

Doris successfully argued for the inclusion of all Mueller's publications in this bibliography (not just the scientific ones) so as to save future researchers from having to retrace her painstaking steps. As was MEL practice at the time, David Churchill, was listed as first author of the bibliography, followed by Muir and last, but by no means least, Doris.

Doris's expertise on Mueller attracted the attention of international scholars, and in 1987 she was invited to join a team of editors on a project to publish the life and letters of Mueller. This project became the great work of her final years at MEL (and beyond), and revealed Doris to be a sensitive and careful translator. The editorial team—Prof. R. W. Home, Prof. A. M. Lucas, Dr Sara Maroske, D. M. Sinkora, Dr Monika Wells and Prof. J. Voigt have found, transcribed and translated over 15,000 letters to or from Mueller and published a selection of several hundred in three volumes (Home et al. 1998, 2002, 2006).

As I worked along side Doris, she revealed herself to me as a talented, methodical and dedicated scholar. She also struck me as some one who set her own compass in life and work, following leads through the herbarium cupboards, into the library and putting them together with bits and pieces of information that she could recall from years before, because of her remarkable memory. The complete surviving Mueller correspondence

is currently being prepared for publication online (to be hosted by the RBGV), and will include a new edition of the Mueller bibliography, which has been greatly expanded due to the mass digitisation of journals and newspapers in recent years.

Retirement

Doris worked at MEL for 24 years, accumulating substantial achievements in curation, phycology and the history of botany. She formally retired on 12 June 1992, only slightly higher up the promotional scale than when she began (Technical Assistant Grade 2). In part, this was because she lacked a university degree, and because the public service had no career path for technical assistants. Nevertheless, Doris's static position also reflected years of chronic underfunding at MEL, and the development of a work place culture that tolerated staff operating above their pay grade.

Given the litany of serious health problems that plagued Doris throughout her life, it is remarkable that she lived so long (Medical history, Sinkora papers, RBGV).

Doris has left traces of her scholarship in notes on specimens throughout MEL cupboards, to be found and used gratefully by other curators and users of the herbarium (e.g. see p. 10). Her files also contain valuable unpublished materials such as a card file on specimens. The RBGV is currently curating and databasing the MEL foreign collections, a task made easier by Doris's pioneering forays into the cupboards.

Archives and biographical references

A small archive of Doris's papers, letters, collecting books, photographs, etc. is lodged in the Library, Royal Botanic Gardens Victoria (RB MSS 339.16, RB MSS 199).

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McKenzie, Brian (2015) 'Mrs Seaweed' 2 pts, www.abc.net.au/radionational/programs/earshot/mrs-seaweed---part-2/6861476

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10. Short, P. S. & D. M. Sinkora (1988) 'The botanist Joachim Steetz (1804–1862)', *Muelleria*, vol. 6, no. 6, pp. 449–494.
11. Sinkora, Doris M. & Michael J. Wynne (1990) 'On the identity of *Talarodictyon tilesii* Endl.', *Sōrui: the bulletin of Japanese Society of Phycology*, vol. 38, pp. 383–386.
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13. May, T., Sara Maroske & D. Sinkora (1995) 'The mycologist, the Baron, his fungi hunters and the mystery artist', *Botanic magazine*, vol. 6, pp. 36–39.
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Erratum

Botanical slip – promoting chaos rather than order!

In a bibliographic reference (in *ASBS Newsletter* 173, p. 39) to an article on citation of names of Chinese scientists, the very item in which you don't want to make a mistake, the chaos was continued. The authorship of the *Taxon* article was cited as:

Lingli, D., Shuai, L., Cheng, D., Jinshuang, M. & Boufford, D.E. (2017). Names of Chinese plant

taxonomists – order out of chaos. *Taxon* 66(3): 782–783. DOI: <https://doi.org/10.12705/663.42>

It should have been cited as:

Deng, L., Liao, S., Du, C., Ma, J. & Boufford, D.E., etc.

Thanks to Anna Monro for pointing this out!

Robyn Barker

Deaths

David Christophel (1947-2018)

David Christophel, palaeobotanist, passed away suddenly on January 20, 2018, aged 70 years. David occupied the position of Lecturer in Plant Taxonomy at the University of Adelaide from c. 1974 to c. 2001 but was primarily known for his palaeontological work. For those of you who are not palaeobotanists the most likely place to have come across his work is in the leaf atlas produced to accompany Australian Tropical Rainforest Plants (Web ref. 1). In the early 2000s Dave returned to America, and in 2003 was appointed as Director of the Chester M Alter Arboretum (Web ref. 2) in the University of Denver, Colorado. He returned to Australia in 2009 and from that time ran a very popular second-hand bookstore and was himself an extremely popular figure in the local community (Web ref. 3).

One of Dave's fellow workers, David Greenwood, wrote in an article in *Banksia*, the Newsletter of the Society of Australian Systematic Biologists

(Web ref. 4) in 2010 of the propensity for palaeobotanists and palynologists to hang out together. It is unfortunate that the Australian society formed by this group in better times eventually became defunct, elements of it being absorbed by ASBS some years ago (*ASBS Newsletter* 140, p. 1). Even though Dave Christophel left his scientific pursuits some time ago it would be good if one of his co-workers were able to put together an account of his scientific achievements and we would be happy to hear from anyone prepared to take on that task.

Web references

- 1: <https://www.anbg.gov.au/cpbr/cd-keys/rfk/>
- 2: <https://www.du.edu/arboretum/history.html>
- 3: www.abc.net.au/news/2018-02-06/story-ends-for-gifted-american-of-blackwood-books/9397816
- 4: <https://library.dbca.wa.gov.au/static/Journals/624160/624160-05.pdf>

Dr David T. Blackburn

¹David Blackburn was the most energetic person I have ever met. When I began my PhD in 1977, he was well into his and he was a force of nature. I am sure he sometimes worked up to 20 hours a day and when he left work, at around 11pm, he would take delight in running home to Wayville (in his thin leather sandals), about 5 kilometres away, with his main ambition being to beat the bus home. He was famous, or perhaps infamous, for his entry in the Adelaide birdman rally, where he spent a huge amount of time building a sophisticated glider that was launched off the end of the Glenelg jetty. Unfortunately, the person pushing at the tail end did not let go at the right time, and the glider went up at close to 90°, caught the wind the wrong way, and collapsed backwards into the jetty, with the pylons breaking off the wings and Dave disappearing backwards and probably lucky not to have killed himself. This became the promotional footage for the event for several years.

¹ One of the outcomes from Dave Christophel's sudden death has been the realisation that another of the palaeobotanical fraternity, David Blackburn, had died in 2015. Here Bob Hill provides some reminiscences and background to David.

Everything David did was at full pace. When he finished his PhD, he received funding for a postdoctoral fellowship, working on the vegetation that made up the Latrobe Valley coal. He sampled the coal by abseiling down the steep coal faces, stopping every metre to carve out a chunk of coal with a chain saw. At one point he managed to close down the whole mine when the professional chain saw operators realised what he was doing and stopped work, since in their view he was taking their job from them. David's work on the Latrobe Coal is, in my opinion, his most impressive scientific legacy, and it still sets the standard for the use of plant fossils in palaeoecological reconstructions.

He spent a short time in Canada working on coal fossils there, but he spent most of his career working for Kinhill Engineers on major environmental problems in Australia, India, China and many other locations. Later in his career he left Kinhill and worked on his own as a consultant, and played a major role in many important projects, most notably in the Adelaide Coastal Waters study and as an Environmental Commissioner.



Fig. 1 A group photo outside the Benham Building, University of Adelaide, of (Back row, left to right): David Christophel, Mark Peters, David Blackburn, David Dilcher, and (front row): Peter Lang and Kirk Johnson (Smithsonian). This was during a visit by David Dilcher from the US and probably just prior to a major collecting trip to New Caledonia.

David remained close to his first interest in palaeobotany, and after he retired from his consulting business he retained a keen interest in the Maslin Bay flora in particular. Unfortunately he suffered from serious health problems in the last years of his life and he died far too young, in May, 2015. The consolation for those of us who knew him well is that he packed as much into his 64 years, as most of us would achieve in a century. Following David's death, his wife, Helena, donated his palaeobotanical research materials to the University of Adelaide. All his negatives have now been scanned and will eventually be made freely available, and I am now working through his extensive microscope slide collection. In recognition of the work he did, the University of Adelaide has formally approved the use of "The David T. Blackburn Palaeobotany Collection" for the extensive collection of plant fossils that is held

there. I still miss his rambling phone calls and his delight in trying out yet another incomprehensible language he had just learnt. There was so much more to David: his interests were far ranging. He even made his own, very beautiful, sitar, just because he could. We miss him, but his legacy is strong.

Ph.D. Thesis

Numerical studies of leaf architecture of dicotyledons: *Saurauia* (Actinidiaceae) as a test case / by David T. Blackburn. <http://hdl.handle.net/2440/19956>

Selected publications

Blackburn, D.T. 1980. Floristic control on lithotype banding within the Yallourn Seam, Yallourn Open Cut; evidence from macrofossil assemblages. *S.E.C. Victoria, Palaeobotany Project, Major Report 2* (unpublished).

Blackburn, D.T. 1985. Palaeobotany of the Yallourn and Morwell Coal Seams. S.E.C. Victoria,



Fig. 2. Three photos showing David with his glider on the Glenelg jetty: (anti-clockwise from top left) preparing to go, at the point of lift off, and the sorry aftermath.

Palaeobotanical Project, Report 3 (unpublished), 121 pp, 53 plates.

Blackburn, D.T. & Sluiter, I.R.K., 1994. The Oligo-Miocene coal floras of south-eastern Australia,

328–367. In *History of the Australian Vegetation. Cretaceous to Recent*, R.S. Hill, ed., Cambridge, University Press, Cambridge.

Bill Sykes

We had a short note in the last newsletter with the sad news that Christchurch botanist Bill Sykes had died on January 5th 2018. An obituary for Bill by David Glenny (CHR) can be found in the January issue of *Trilepidea*, the newsletter of the New Zealand Plant Conservation Network. Further obituaries are expected to be included

in the *NZ Journal of Botany*, *Taxon* and the *NZ Botanical Society Newsletter*.

Reference

Glenny, D. (2018). Obituary: William Russell Sykes ONZM, FMLS. *Trilepidea* 170: 6-9. www.nzpcn.org.nz/publications/Trilepidea-170-180201.pdf

Books and other publications

Books

Fungi: A Very Short Introduction

By **Nicholas P. Money**

Oxford University Press, 2016.

160 pp; ISBN9780199688784 (PB);

also available as an ebook

Price c. A\$11-17.

<https://global.oup.com/academic/product/fungi-a-very-short-introduction-9780199688784>

This book is part of a series of very short introductions to a number of subjects. Nigel Chaffey's review of *Fungi: A very short introduction* can be found on the internet (Web ref.). From this same page you can also enter the fascinating world of Professor Money and his other publications, mainly on the microbial world. He has a blog, Pastures New, and, as well as his several non-fiction books, he has recently published his first fiction, *The Mycologist*.

Web ref.: <https://www.botany.one/2018/01/meet-real-fungi/>

Carnivorous Plants: Physiology, ecology, and evolution

Ed by Oxford University Press, 2017

560 pp; ISBN: 9780198779841; also

available as an ebook

Price

<https://global.oup.com/academic/product/carnivorous-plants-9780198779841>

Another book from Oxford University Press and again with a review by Nigel Chaffey (Web ref.). It summarises the latest research into the physiology, ecology, and evolution of carnivorous plants whilst providing an agenda for future research.

Web ref.: <https://www.botany.one/2018/02/meat-munching-plants/>

Conservation Methods for Terrestrial Orchids

by **Nigel Swarts & Kingsley W. Dixon**

J.Ross Publishing, Florida; June 2017

Hardcover, 7x10, 240 pages

ISBN: 978-160427-123-2

Price: A\$69.95 (Retail); A\$59.95

(through publisher) + postage;

AUD\$120 (Andrew Isles)

www.jrosspub.com/conservation-methods-for-terrestrial-orchids.html

There is a plenty of background information about this book on the publisher's web page, including links to reviews.

This first ever comprehensive volume on terrestrial orchids includes background information, techniques, procedures, and relevant case studies on topics such as monitoring, approaches used for mycorrhizal isolation and culture, seed sowing techniques, soil baiting, symbiotic culture of terrestrial species, translocation of propagated plants, pollination, genetic approaches for orchid biology and conservation, innovations in alginate encapsulation of seed and mycorrhizal fungus, and more. The focus of this volume is on terrestrial orchids as these species face the greatest conservation threats, however, the techniques described in this book can also be applied equally to epiphytic (tree) orchids. [From the web-page].

Orchid pollinators of Victoria.

By **Rudie Kuiter**

Aquatic Photographics: Seaford. 2016 (4th edn).

Octavo, paperback, colour photographs.

AU\$95

Orchid pollinators of Victoria 2: nectar-rewarding leek orchids and their allies.

By **Rudie Kuiter**

Aquatic Photographics: Seaford. 2017.

Octavo, paperback, 84 pp., colour photographs.

AU\$40.00

Rudie Kuiter's goal to photograph pollinators in action on Victorian orchid species has resulted in some wonderful published photographs and he has self-published two books with this title. The first volume has been out for some time and is now in its 4th edition with work progressing on the 5th edition. His second volume covers the nectar rewarding leek orchids and their allies and was published last year. Prior to this Kuiter published a series of books under the titles *Victoria's Cryptic Orchids*, *Victoria's Spider Orchids*, *Victoria's*

Small Caladenias, Victoria's Greenhoods and Rustyhoods and *Victoria's Summer Orchids*.

Both books can also be downloaded as a pdf through ResearchGate, which also provides access to Kuitert's other papers on orchids, the most recent being a list of orchids and their pollinating agents for Victoria.

Web ref. <https://www.researchgate.net/project/Orchid-pollinators-of-Victoria> (list of papers, all of them downloadable).

Gillen's Modest Record: Francis Gillen's Journal of the 1901–1902 Spencer-Gillen Expedition
Ed. by Philip Jones
Friends of the State Library of South Australia, 2017
538pp, \$50 (PB); \$110 (deluxe)

Another in the long list of Australian facsimiles produced by the Friends of the State Library of South Australia under their *Australiana Publications* program (Web ref. 1). This one is a second outing of Gillen's journal, first issued by them in 1968 under the title *Gillen's Diary: the Camp Jottings of F. J. Gillen on the Spencer and Gillen Expedition Across Australia 1901–1902*. Extra material in the form of new photographs and introductory material has been added by the editor. There was a review in March 3rd *Weekend Australian* by Nicolas Rothwell but it may not be accessible without a subscription (Web ref. 2).

Some of you may be interested in two others of their publications: *Undiscovered Australia – being an account of an expedition to tropical Australia to collect specimens of the rarer native fauna for the British Museum – 1923–1925* by the remarkable Sir Hubert Wilkins, first published in 1928 with the facsimile in 2016; and the other a forthcoming reissue of R.T. Baker's *The Waratah – In Applied Art and in Literature*, first published in 1915.

Web references

- 1: www.australianpublications.org.au/
- 2: <https://www.theaustralian.com.au/arts/review/francis-gillens-journal-of-the-19011902-spencergillen-expedition/news-story/42297310096de59aedec0adf263daa2b>

Deep Time Dreaming: Uncovering Ancient Australia
By Billy Griffiths
Black Inc., Carlton, Victoria. 26th Feb

2018

ISBN: 9781760640446; eISBN: 9781743820384; 384 pp
AU\$34.99 (PB); AU\$16.99 (ebook).
Free shipping within Australia
<https://www.blackincbooks.com.au/books/deep-time-dreaming>

Soon after Billy Griffiths joins his first archaeological dig as camp manager and cook, he is hooked. Equipped with a historian's inquiring mind, he embarks on a journey through time, seeking to understand the extraordinary deep history of the Australian continent.

Deep Time Dreaming is the passionate product of that journey. It investigates a twin revolution: the reassertion of Aboriginal identity in the second half of the twentieth century, and the uncovering of the traces of ancient Australia.

It explores what it means to live in a place of great antiquity, with its complex questions of ownership and belonging. It is about a slow shift in national consciousness: the deep time dreaming that has changed the way many of us relate to this continent and its enduring, dynamic human history. [Publisher's blurb]

Reviews

- <https://www.smh.com.au/entertainment/books/deep-time-dreaming-review-billy-griffiths-on-exploration-of-the-distant-past-20180307-h0x5q8.html>
- <https://www.readings.com.au/review/deep-time-dreaming-by-billy-griffiths>
- www.abc.net.au/radionational/programs/saturdayextra/deep-time-dreaming/9555046 (podcast)

Journals

Journal on plant conservation and botanic gardens

The December 2017 issue of the Chinese journal *Plant Diversity* (volume 39 issue 6, pp. 309–402) is devoted to the subject of Plant Conservation and Botanic Gardens. The journal is open access and the 12 papers in this issue have been edited by Vernon Heywood, Hongwen Huang and Yonghong Hu, with Heywood responsible for the Editorial and an article on conservation in the Anthropocene. Two other articles are by Australians. When I accessed the pages in January there was a call for papers for a special

issue on Restoration of threatened plant species and their habitat with papers needed by February 10th for the May issue indicating a very quick turn-around.

Web ref.: <https://www.sciencedirect.com/journal/plant-diversity/vol/39/issue/6>

Sibbaldia: The Journal of Botanic Garden Horticulture

This journal, a product of the Royal Botanic Gardens Edinburgh, was established in 2003 and has been online from 2016. Articles that caught my eye included a number on the effects of climate change on Scottish Gardens, Havinga & Ostgaard's "Barcodes are dead, long live barcodes! Improving the inventory of living plant collections using optical technology" (Number 14: 133-140, 2016) and Poulsen's profile of the 200 year old Botanic Garden in Oslo (Number 13: 15-32, 2015).

Web ref.: <https://journals.rbge.org.uk/index.php/rbgesib/index>

On books mentioned in the last Newsletter

Plants of the World – a review

Information surrounding the cost of Christenhusz et al.'s *Plants of the World* was difficult to find for purchase in Australia and New Zealand in the last newsletter and it was omitted for that reason. Since then Bob Parsons has indicated that the cost to him through Amazon was AUD117.75 (including postage). CSIRO Publishing and Andrew Isles both indicated that they were not expecting stock until May; the former is taking pre-orders with a cost of AUD130 + postage. A review of the book by Nigel Chaffey is available on-line (Web ref.).

Web ref.: <https://www.botany.one/2018/02/all-the-worlds-plants-are-in-here/>

Farming sustainably

The review article "Reflections on four decades of land restoration in Australia" documents three practitioners' perspectives on 40 years of land restoration in Australia. It was presented as part of the Restore, Regenerate, Revegetate Conference held at the University of New England in February 2017 and may be of interest to readers of the book *Call of the reed warbler*; mentioned in the last issue of the Newsletter.

Reference

Campbell, A., Alexandra, J. & Curtis, D. (2017). *The*

Rangeland Journal 39(6): 405–416. Downloadable at <http://www.publish.csiro.au/rj/Fulltext/RJ17056>

Downloadables

Commonwealth Academies of Science Consensus Statement on Climate Change

The Commonwealth Academies of Science Consensus Statement on Climate Change was released on 12th March and can be downloaded from the web (Web ref.).

The Commonwealth academies of science call upon Commonwealth Heads of Government to use the best possible scientific evidence to guide action on their 2030 commitments under the Paris accord, and to take further action to achieve net-zero greenhouse gases emissions during the second half of the 21st Century." [From the website].

Web ref. <https://www.science.org.au/supporting-science/science-policy/position-statements/cwealth-acad-science-consensus-statement-climate-change>

Prosperity through Innovation

The Department of Industry, Innovation and Science released the report *Australia 2030: Prosperity through Innovation* in November 2017 (Web ref. 1). The report is a plan for Australia to thrive in a global innovation race. Mixed responses to the report can be seen in *Science and Technology Australia* (Web ref. 2) and *The Conversation* (Web ref. 3), the latter bemoaning that "Even New Zealand beat Australia on [two] measures" of the Global Innovation Index (Web ref. 4).

Web references

- 1: <https://industry.gov.au/Innovation-and-Science-Australia/Australia-2030/Pages/default.aspx>
- 2: <https://scienceandtechnologyaustralia.org.au/australias-70000-scientists-and-technologists-welcome-visionary-innovation-strategy/>
- 3: <http://theconversation.com/no-clear-target-in-australias-2030-national-innovation-report-90938>
- 4: <https://www.globalinnovationindex.org/>

Resilience

A special issue of *Science* featuring a series of 10 freely available articles on coping with natural disasters, particularly climate change. How do we cope and how does Nature cope.

Web ref.: <http://science.sciencemag.org/content/359/6379/970>

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CANB tel: (+612)/(02) 6246 5108 fax: (+612)/(02) 6246 5249 www.anbg.gov.au/	BRI tel: (+617)/(07) 3896 9321 fax: (+617)/(07) 3896 9624 www.qld.gov.au/environment/plants-animals/plants/herbarium/	ATH tel: (+617)/(07) 4232 1837 www.ath.org.au/	PERTH tel: (+618)/(08) 9219 8000 fax: (+618)/(08) 9334 0327 http://dbca.wa.gov.au/plants-and-animals/wa-herbarium
NT tel: (+618)/(08) 8951 8791 fax: (+618)/(08) 8951 8790 https://nt.gov.au/environment/native-plants/native-plants-and-nt-herbarium	DNA tel: (+618)/(08) 8999 4516 fax: (+618)/(08) 8999 4527 https://nt.gov.au/environment/native-plants/native-plants-and-nt-herbarium	AK tel: (+649)/(9) 306 7060 www.aucklandmuseum.com/collections-research/	CHR tel: (+643)/(3) 321 9999 fax: (+643)/(3) 321 9997 www.landcareresearch.co.nz
WELT tel: (+644)/(4) 381 7261 fax: (+644)/(4) 381 7070 http://collections.tepapa.govt.nz/	Australian University Herbaria CHAH representative: Frank Hemmings University of New South Wales email: f.hemmings@unsw.edu.au	ABRS tel: (+612)/(02) 6250 9417 fax: (+612)/(02) 6250 9555 email: abrs@environment.gov.au www.environment.gov.au/science/abrs	Council of Heads of Australasian Herbaria (CHAH) Chair: John Huisman (PERTH). email: john.huisman@dbca.wa.gov.au www.chah.gov.au

The Society

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

Membership

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

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

ASBS publications

Australasian Systematic Botany Society Newsletter

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Cost: Free

Australian Systematic Botany Society Newsletter No. 53 **Systematic Status of Large Flowering Plant Genera**

Edited by Helen Hewson, 1987

This Newsletter issue includes the reports from the February 1986 Boden Conference on the "Systematic Status of Large Flowering Plant Genera". The reports cover: the genus concept; the role of cladistics in generic delimitation; geographic range and the genus concepts; the value of chemical characters, pollination syndromes, and breeding systems as generic determinants; and generic concepts in the Asteraceae, Chenopodiaceae, Epacridaceae, *Cassia*, *Acacia* and *Eucalyptus*.

Cost: Number 53: \$5, plus \$1.75 postage (in Australia)

Cheques payable to "ASBS Inc." Mastercard & Visa payments accepted.

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Enquiries: anna.monro@environment.gov.au Tel: (+61)/(0) 2 6250 9530

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

Edited by W.R. Barker & P.J.M. Greenslade.

Peacock Publications, ASBS & ANZAAS, 1982

This collection of more than 40 papers will interest all people concerned with Australia's dry inland, or the evolutionary history of its flora and fauna. It is of value to those studying both arid lands and evolution in general. Six sections cover: ecological and historical background; ecological and reproductive adaptations in plants; vertebrate animals; invertebrate animals; individual plant groups; and concluding remarks.

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

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

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

History of Systematic Botany in Australasia (book)

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

No longer available

Australasian Systematic Botany Society Newsletter

The Newsletter keeps ASBS members informed of Society events and news, and provides a vehicle for debate and discussion. In addition, original articles, notes and letters (not exceeding ten published pages in length) will be considered.

Every effort is taken to distribute the Newsletter quarterly; delays or rare combined issues are attributable usually to the availability of the Editors who act in a voluntary capacity rather than to lack of copy. As soon as possible after compilation of each issue a searchable pdf version (in full colour) is placed on the Society web site and announced to members by email, and printed copy (in grey scale) is produced and distributed to members who have requested it.

Citation: abbreviate as *Australas. Syst. Bot. Soc. Newsllett.*

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Flyers may be approved for inclusion in the envelope for products or services of interest to ASBS members. The current fee is \$200 per flyer, plus the cost of inserting them (usually roughly \$50). Flyers are not part of the Newsletter and do not appear with the Newsletter on the ASBS Website.

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

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