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Cover image: *Alloxylon flammeum* (Proteaceae), reproduced with the permission of David Mackay (the artist) and RBG Sydney.

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From the President

The ASBS conference in Perth was fast approaching and I was busily preparing for it (as well as for a trip to Africa) when I wrote the first draft of this, my last "From the President" column[1]. The conference program looked terrific and indeed it turned out to be so, with numerous fascinating titles from a great selection of speakers and poster presenters, including some of the world's and Australasia's most eminent botanists, as well as a good representation of the next generation of plant systematists. Moreover, the whole show seemed to run faultlessly. The organizing committee clearly did a fantastic job and again I want to thank Kevin Thiele's team of Kelly Shepherd, Juliet Wege, Ryonen Butcher, Kristina Lemson, Matt and Russell Barrett and Peter Jobson for the thought and hard work that they invested in this meeting on behalf of the Society.

The standard of the three ASBS conferences that were held during my presidency (Armidale, Lincoln, Perth) was so high that the task of organising the next one has become quite daunting. However, the joint meeting of ASBS and the Society of Australian Systematic Biologists, to be held in Sydney in late November 2013, got off to a good start in late August with the formation of an organizing committee. This is mostly composed of staff members of the National Herbarium of NSW and the Australian Museum but also includes Murray Henwood from the University of Sydney. It has already held two meetings and is now in the process of finalising both a venue and conference organising company. We expect to broadcast a first circular later in November 2012.

ASBS Council had a lot on its plate leading up to our Annual General Meeting in Perth, which this year included the approval by members of five Special Resolutions to change 25 of the Society's rules, in addition to the regular items such as reports from the President and Treasurer and the election of Council members. Constitutional reform, of which these Special Resolutions are a good example, enables societies like ours to adapt to their changing environment, to take advantage of technological advances, and to iron out wrinkles that have inadvertently crept into the fabric of the rules. It is an essential, ongoing process that relies on the willingness of members to engage actively in running the Society and I am grateful that a large number of members chose to support their Society in this way by voting in the postal ballot. I am also delighted that all resolutions were overwhelmingly passed.

The AGM was a significant landmark for me personally because chairing it was my last official duty as ASBS President. My term as President (2009–2012) was been a stimulating, educational, mostly enjoyable, but occasionally frustrating experience. Highlights for me include:

- conferences that have been held under the Society's auspices in Armidale, Lincoln and Perth;
- the move to transform our Society from a national to an international body;
- two rounds of constitutional reform;
- significant enhancement of our ability to support research by students and early career plant systematists through the Eichler Awards and the new Australian Conservation Taxonomy Award;
- awarding Nancy Burbidge Memorial Medals to two eminent plant systematists, Professors Mike Crisp and Pauline Ladiges;
- conferring life membership of ASBS on John Clarkson and Dr Bill Barker for their sustained, energetic support of the Society.

I am grateful to all members for entrusting me with the duty of leading the society for three years and especially to those who have served on ASBS Council during my presidency: Michael Bayly (Treasurer), Gillian Brown (Councillor, Secretary), Tanya Scharaschkin (Councillor), Dale Dixon (Vice President), Frank Zich (Treasurer), Pina Milne (Councillor (Assistant Treasurer)), John Clarkson (Secretary), Ilse Breitwieser (Councillor), and in *ex officio* positions: Russell Barrett, Peter Jobson, Gael Campbell-Young (Newsletter editors), Murray Fagg (Web Master),

1 Ed. note: PW updated this column after the conference.

Annette Wilson (Public Officer), Barbara Briggs, Rod Henderson, Betsy Jackes, Chris Quinn, Greg Leach, Kristina Lemson, Biller Barker, Philip Garnock-Jones, and Nathalie Nagalingum (Hansjörg Eichler Research Committee).

As Dale Dixon also stepped down from the position of Vice President at the AGM, having spent the maximum allowable six years on Council, ASBS Council is now being led by a new President, Bill Barker and a new Vice President, Mike Bayly. Bill and Mike bring a wealth of experience to these positions of leadership, having both served in senior roles on Council previously and I want to take this opportunity to congratulate both of them on their election.

What is the most pressing challenge confronting ASBS heading towards 2013? A number of us have concluded that it is deciding how best to respond to growing threats to Australian science generally and to plant systematics in particular. I think it is not an exaggeration to say that mainstream Australian science is under unprecedented attack from political ideologues disputing the veracity of well-corroborated scientific knowledge and especially that relating to climate change. Biology is being harmed along with the rest of science by this barrage of anti-scientific propaganda in the popular media. At the same time, systematics is facing an existential threat from cuts in government funding at State level (where most systematists are employed). Programs to reduce the public sector workforce by tens of thousands of positions this year, in several states, with further cuts promised for coming years, have already sent some of Australia's most experienced systematic biologists into premature retirement and threaten to curtail the botanical careers of some of our most promising young scientists.

Interestingly, problems of this kind and scale do not seem to be emerging elsewhere in Australasia, where more balanced policies seem to be holding sway. Would it be helpful for ASBS to become more active, perhaps even militant, in arguing against attacks on scientific knowledge and funding in Australia? I think so and have agreed to be part of a "brains trust" of ex-Council members on which our new leadership can call to discuss such questions.

Peter Weston
Immediate Past President

From the Editors

Do you have some time to spare?

We want you!

Expressions of interest for editorial roles with the *Newsletter* are being called for due to uncertainties in the work commitments of the current editors. At this stage, the current editors are not standing down, but interest in taking on the roles is being sought in case the need to pass on the baton arises in the near future. Cuts to Government-funded agencies in WA has meant a shift in the availability of work and the results of this change for one of the editors are still uncertain. Ideally, the editorship would be shared across three individuals (who do not have to be in the same geographical area), responsible for 1. Receiving and editing copy; 2. Compilation of the *Newsletter* in Adobe InDesign; and 3. Printing and distribution of the *Newsletter*.

Please contact Russell Barrett or Bill Barker if any of these roles interest you.

The editors

Death Notices

It is with sadness that we note the recent deaths of long-term members of the Society, Bob Anderson (South Australia), R.W. (Bob) Johnson (formerly at BRI) and D.J. (Don) McGillivray (formerly at NSW). Obituaries will be sought for future issues of the *Newsletter*.

Articles

Nancy Tyson Burbidge – a centenary

Alex George

Kardinya, W.A.

Nancy Burbidge was born at Cleckheaton, Yorkshire, England, on 5 August 1912. The following year her family came to Western Australia and settled at Katanning in the Great Southern, where her father was Anglican minister and her mother founded a primary school followed by a girls' college. Nancy attended Bunbury High School and The University of Western Australia, graduating with a BSc in 1937, followed by an MSc in 1945 and a DSc in 1961. Gaining a Free Passage Scholarship, she studied (mainly *Enneapogon*) at the Royal Botanic Gardens, Kew, from late 1938 to early 1940.

Back in Australia she worked at the Institute of Agriculture at UWA including field work in the Pilbara where her interest in *Triodia* was stimulated. In 1942–43 she worked for the WA Forests Department, researching root development and mycorrhizae of *Pinus pinaster*. From 1943 to 1946 she worked at the Waite Agricultural Research Institute in S.A., mainly on the regeneration of native pasture plants in arid regions. Her appointment to CSIRO in 1946 as their first full-time systematic botanist opened the way for her to become one of the great Australian botanists. She started building up their small plant collection (which became the Herbarium Australiense, later Australian National Herbarium) and remained Curator/Director until June 1973. The collections and staff were greatly expanded, and the herbarium moved into a purpose-built building in 1974, Nancy having been heavily involved in its design. Her own plant collections, gathered in many parts of Australia, totalled more than 8000 numbers.

From 1952 to 1954 Nancy was the fourth Australian Botanical Liaison Officer at Kew. Among a significant output from her term is the microfilm of Robert Brown's manuscript at the British Museum (Natural History) with a comprehensive mimoegraphed finding aid. She co-ordinated the photography of many Australian types and other materials at Kew, again with an accompanying index. Copies of these were distributed to all major Australian herbaria

Photo: Nancy Burbidge at her bench at the Royal Botanic Gardens, Kew, 1954. Photo: Nigel Hepper.

Throughout her career Nancy published research papers (e.g. revisions in *Enneapogon*, *Triodia*, *Nicotiana Sesbania*, *Vittadinia*), floristic works (e.g. *Flora of the ACT* [with Max Gray], *Australian Grasses* [3 vols]), bibliographies (*Dictionary of Australian Plant Genera*, *Plant Taxonomic Literature in Australian Libraries* [very useful in the days before electronic catalogues]) and popular works, many illustrated by her own drawings. A landmark paper, *The phytogeography of the Australian region*, was the core of the work

submitted for her DSc. An obituary by William Hartley (*Brunonia* 1: 123–129, 1977) lists 50 publications as well as other articles.

A hallmark of her career was wide involvement in promoting communication and cooperation between botanists nationally. She was an energetic proponent for a new Flora of Australia and left CSIRO in 1973 to direct the forerunner of the Flora, the *Australian Plant Name Index* (many of the original index cards bear her handwriting).

Nancy was active in various local, national and international organisations. She was a founding member of the National Parks Association of the A.C.T. that lobbied, successfully, for the establishment of Tidbinbilla Nature Reserve, Gibraltar Falls Recreation Area and Namadgi National Park.

Nancy passed away in Canberra on 4 March 1977. She is commemorated in names in *Acacia*, *Aristida*, *Boerhavia*, *Nicotiana*, *Picris*, *Ptilotus*, *Sclerolaena*, *Sesbania*, *Triodia* and *Vittadinia*; in Mt Burbidge (1742 m) in Namadji National Park, A.C.T.; in the Nancy T. Burbidge Amphitheatre in the Australian National Botanic Gardens; a plaque in the ACT Honour Walk, and in the Nancy T. Burbidge Memorial Lecture and Medal of this Society. An altar piece in St Michael's Anglican Church, Mount Pleasant, W.A., is dedicated to her. She received the Clarke Medal in 1971 and an AM on 7 June 1976.

A. CUNNINGHAM, P.P. KING AND THE LEGACY TO THE BOTANICAL FRATERNITY

Joan B. Webb

Allan Cunningham (1791-1839), King's Botanist, spent almost seventeen years in Australia as a botanical collector and explorer in the first half of the nineteenth century, but his allegiance was first and foremost to the Mother country, England, and specifically to Kew and his employers, Sir Joseph Banks and William T. Aiton, Superintendent at Kew. Even today, at the beginning of the 21st century, Cunningham's specimens are sparsely represented in Australian herbaria, and in the nineteenth century the products of his labours were not only sent directly to Kew and the Banksian Herbarium, but were dispersed among the leading botanists of Britain and Europe, professional and amateur, men such as Lambert, Lindley, Bentham, Delessert, and W.J. Hooker.

Cunningham, with the blessing of Banks and Aiton, and also of the British Treasury, arrived at Port Jackson in the SURRY on 20 December 1816. Governor Macquarie gave him a warm welcome and suggested that he join John Oxley's projected journey into the country west of the Blue Mountains. This was arranged, the party leaving in April 1817, returning in September. Meanwhile, the Government in England, concerned about French initiatives in the region of Terra Australis, engaged Captain Phillip Parker King to complete the surveys originally entrusted to Matthew Flinders. The north, the north-west, and the western shores were to be the main focus of King's survey. Consequently between December 1817 and April 1822, four voyages took place around the continent, and a fifth to Tasmania.

King's commission from Lord Bathurst, dated 8 February 1817, included the following:

> 'Besides the persons necessary for the navigation of the vessel, you will received on board Mr A. Cunningham, a botanist, now in New South Wales, who has received the orders of Sir Joseph Banks to attend you ….'

Banks had heard in early 1817 that the French were fitting a ship to explore the north and north-west coasts of Australia and this influenced his decision to have Cunnningham join King's surveys. He wrote to Cunningham:

> ' … this will give you an opportunity of collecting plants, which could by no other means be obtained, and of enriching the Royal Gardens at Kew with plants which otherwise would have been added to the Royal Gardens at Paris, and have tended to render their collection superior to ours.'[1]

Banks saw the French as botanical rivals!

The voyages undertaken by Cunningham with King in the ships MERMAID and BATHURST were:

- Voyage 1 (MERMAID), 22 December 1817–29 July 1818;
- Voyage 2 (MERMAID), 14 June 1819–12 Jan. 1820;
- Voyage 3 (MERMAID) 14 June 1820–9 December 1820;
- Voyage 4 (BATHURST), 26 May 1821–25 April 1822;
- Tasmania (MERMAID) was visited between Voyages 1 and 2 – 25 December 1818–14 February 1819.

Cunningham set about his collecting with zeal, yet was often confined to the ship with illness. However, in his Report of the voyages, King wrote:

> 'Point Cunningham ….. a projection forming the east head of a bay, and was subsequently called after my friend Mr Cunningham, to whose indefatigable zeal the scientific world is considerably indebted for a very extensive and valuable botanical collection that has been formed upon this voyage.'[2]

This was their fourth voyage, but the comment could apply as easily to any of the other three previous journeys. Cunningham, however, did not indulge in self-satisfaction. Many years later, in 1831, he wrote to W.J. Hooker:

> 'I have seldom, if ever, been perfectly satisfied with what I have done … when I was with Captain King on his survey of the N.W.Coast of Australia, even though I had a whole day from daylight to range among rocks and sandridges, amidst excessive heat; had made several truly interesting discoveries and returned to the vessel at Sunset, and laden with as many plants and rocks as I could well manage, I could scarcely make up my mind to be satisfied with what I had done – if only I could have travelled away from the "immediate beach", contrary to the wishes of my commanding officer ….. I might have added many more plants to my herbarium than I actually did.'[3]

This account of Cunningham's work aims to demonstrate, using the King's voyages collections, that examination of his collections, and subsequent publications, spanned most of the nineteenth century, and involved most members of the then current botanical fraternity. In 1828 Cunningham had requested permission to return home to England, and this was granted in November 1830. He left for home on 25 February 1831, arriving there in mid-July. In the years prior to 1831 he had sent many specimens to Aiton and Banks, and also to Robert Brown. In July 1822 Cunningham wrote to Brown, asking him to examine the plants he had sent for the Banksian Herbarium from the four voyages with King, and also asked him to consider naming a genus of plants after King, which Brown subsequently did. As a result, the first of Cunningham's specimens from the King voyages to be described and published were by Brown, in 1830.

Cunningham took a house at Strand-on-the-Green near Kew and settled down to work on his collections, although he left most of his findings to be published by others. However, in this period he did write up some of his work. He read a paper 'The Progress of Interior Discovery in New South Wales', and another, 'On the Physical and Geological Structure of the Country to the West of the Dividing Range between Hunter's River and Moreton Bay.' Each to the appropriate learned body in London. Each was subsequently published.

From 1832 Cunningham was in touch by letter with William Jackson Hooker in Glasgow, discussing plants for publication in the *Botanical Magazine*. This correspondence continued for several years. In 1836, when he accepted the post of Colonial Botanist in Sydney, he wrote to Hooker to say he had broken up his herbarium 'having given the better portion to MM de Candolle, Martius, Endlicher, Schauer (Breslau), Fischer, Lindley, Don, Bentham and some few much esteemed friends, lovers of botany.' As well as this distribution, another took place after Cunningham's death in 1839, when his own personal large and valuable herbarium was distributed among the working botanists

of the day by his executor, Robert Heward. However, Heward did not present the major part of Cunningham's herbarium to Kew until 1862. Bentham also complained at length about access to Australian collections at the British Museum writing in the Preface to *Flora Australiensis*, Volume 1 (1863):

> 'Whilst at the British Museum, I should also gladly have availed myself of the valuable Australian collections there hoarded ….. but the system now long pursued by the managing trustees is one which interferes much with the use of those collections …. It would appear as if the whole object was to accumulate stores, without caring to make them available for use. The rich herbaria collected at the public expense by the late A. Cunningham in his various expeditions under Captain King and others ….. have been stored away, many of them from a quarter to half a century, unarranged in their original parcels, without any thought of providing the staff and funds necessary to render them of use to scientific botanists.'

Thus, although Cunningham distributed many of his plants in 1836, many remained to be examined when Bentham undertook his major work of *Flora Australiensis*, finding access to unpublished material in the Hookerian herbarium and from the Heward bequest of 1862. What follows here is a selection of Cunningham plants described by botanists of the nineteenth century botanical fraternity.

- *Grevillea agrifolia*, Cunn. ex RBr. Prot. Nov. (1830). Type: Cunningham, 1819, Voyage 2, Lacrosse Island.

  Robert Brown (1773–1858) was naturalist on HMS INVESTIGATOR with Matthew Flinders from 1801 to 1805, collecting many new plants from mainland Australia and Tasmania. When Joseph Banks lost his librarian and right-hand man on the death of Jonas Dryander, he replaced him with Brown.

- *Hibbertia cunninghamii* Hook. (Aiton ex Hook.), Curtis's *Botanical Magazine* 59 (1832). Type: 'introduced by Mr Allan Cunningham from King George's Sound to the Royal Gardens at Kew, whence it was liberally communicated to the Glasgow Botanic Garden.'

- William T. Aiton (1766-1849) was curator of the Royal Gardens at Kew. William Jackson Hooker (1785-1865) was Regius Professor of Botany at Glasgow. In April 1841 he was appointed director at Kew on the resignation of W.T.Aiton.

- *Acacia deltoidea* Cunn. ex Don. *Gen. Hist. Of Dichlamydeous Plants* 2 (1832) 401. Type: Montague Sound, 3rd voyage of the MERMAID in 1820. Cunn. MSS George Don (1798–1856) British plant collector and nurseryman. His general history of dichlamydeous plants in four volumes was published 1831-1838.

- *Calythrix microphylla* Cunn. ex Hook. Curtis's *Botanical Magazine* 61 (1834) n. 3323, 'the synopsis having been communicated to us by Mr Cunningham. Port Essington, Voyage 1 of the MERMAID, 1818.

- *Clianthus dampieri* Cunn. ex Lindley, Trans. Hort. Soc. of London ser. 2, 1 (1835) 522. A.C. MSS. Dampier's Archipelago, Voyage 1 of the MERMAID, 1818. Cunningham wrote in the *Transactions* of 1835: 'As there cannot well be any doubt of the identity of the plant Dampier found in 1699, on one of the islands of the Archipelago now bearing his name ….. I have dedicated it to that very celebrated navigator, its discoverer. In May 1818 it was found in flower ….'

  John Lindley (1799–1865) was a botanist and horticulturist. In 1829 he became the first professor of botany in the University of London (afterwards University College), an office he held until 1860. He was the author of many botanical works from 1822 to 1865, and between 1822 and 1848 contributed numerous reports to the *Transactions of the Horticultural Society.*

- *Blumea integrifolia* DC. A.P. de Candolle, Prod. 5 (1836) 433. Type: New Holland, Port

Keats, A. Cunmningham, Voyage 2 of the MERMAID, 1819.

A.P. de Candolle – Augustin Pyramus (1778-1841), Swiss botanist at Geneva. The *Prodromus* was published 1823–1873. A.P. de Candolle was editor up to and including 1841 (Vols. 1–7); afterwards Alphonse de Candolle (son) was editor.

- *Acacia lycopodiifolia* Cunn. ex Hook. W.J. Hooker's *Icones Plantarum 2* (1837) t.172. Type: Cambridge Gulf, N. Holland, Voyage 2 of the MERMAID, 1819.
- *Ceriops candolliana* Arn. In *Annals of Natural History 1* (1838) 364m, Careening Bay in *Nova Hollandia,* Cunningham in Herb. Hook. Voyage 3 of the MERMAID, 1820.

  G.A. Walker-Arnott (1799-1868), a Scottish botanist, his herbarium and botanical library acquired by Glasgow University. He studied Cunningham's specimen in Hooker's herbarium.
- *Acacia idiomorpha* Cunn. ex Benth. Hooker's London *J. of Botany 1* (1842) 329. Type: Dirk Hartog's Island, January 1822. Voyage 4 in the BATHURST. Cunn MSS.

  George Bentham (1800–1884) had a formal education in law but he had always been interested in botany. In 1833 he decided to give up law and devote himself entirely to botany. This description was one of his earliest publications using a Cunningham specimen, his first effort being *Labiatarum Genera et Species* (1832–1836) which did include a number of Cunningham specimens from New South Wales.
- *Eucalyptus oligantha* Cunn. ex Schauer, in Walpers, W.G., *Repertorium Botanices Systematicae 2* (1843) 926. Type: Copeland Island, Voyage 1 of the MERMAID, 1818.

  J.C. Schauer (1813–1848) was a German botanist. He was in charge of the botanical garden at Breslau, 1832-1848, when he received the donation from Cunningham.
- *Ficus aculeata* Cunn. ex Miquel, F.A.W. in Hooker's London J. 7 (1848) 426. Type: South Goulburn Island, Herb. Hook. Voyage 1 of the MERMAID, 1818.

  F.A.W. Miquel was a Dutch botanist, director of the botanic garden in Amsterdam in 1848 when he wrote this article on Cunningham's specimen. Miquel described many new taxa on the basis of material obtained on loan, this one in Herb. Hook.
- *Trichinium auricufolium* Cunn. ex Moq. In Alphonse de Candolle *Prodromus 13* (1849) 287. Type: Dampier's Archipelago, Voyage 1 of the MERMAID, 1818.

  C.H.B.A. Moquin-Tandon (1804–1863), a French naturalist and botanist; pupil of A.P. de Candolle. He collaborated for a number of years with de Candolle on the *Prodromus*.
- *Daviesia reclinata* Cunn. ex Benth. *Fl. Austral. 2* (1864) 77. Type: Sims Island, N. Australia, Voyage 3 of the MERMAID, 1820.

  George Bentham wrote his epic work *Flora Australiensis* in seven volumes, 1863–1878, describing many Cunningham specimens for the first time (as well as the specimens of many other collectors of the nineteenth century from all over Australia.)
- *Ricinocarpos rosmarinifolius* Benth. *Fl. Austral. 6* (1873) 72. Type: Montague and York Sounds, Voyage 3 of the MERMAID, 1820.

Banks and Aiton in 1814 had made the decision that Allan Cunningham would be a worthy ambassador for Kew in the New World. Cunningham did fulfil the task allotted to him, to collect for Kew, but his legacy to botanical science lies in the dispersal of his collections among the working botanists of Britain and Europe, and publications which continued throughout the nineteenth century.

References

Banks to Cunningham, 13 February 1817, *Kew Collectors*, Vol. 7A, f.18, Kew Archives.

P.P. King, *Survey of Australia,* Volume 2, 1827, p. 99.

Cunningham to W.J. Hooker, 9 Sept. 1831, Kew Archives, Australian Letters, DC 72, p.10.

A Post-Olympic View from Kew

The Olympic Bell has finished chiming; you know, the one Flemish cyclist Bradley Wiggins rang at the start of the event. Our Olympic Ring Floral Tribute here at Kew is still attracting visitors, even though the best view is from a banking Airbus coming in to land at Heathrow. The Paralympic agitos planted around a large vase in the pedestrian traffic island near the Palm House are still vigorous, and much easier to appreciate at ground level.

In case you are wondering how we achieved the black Olympic ring, we used *Ophiopogon planiscapus* 'Nigrescens'. The green ring was mint, and the green 'tick' in the Paralympic design basil. The rest could be anything although we did struggle to get the right shade of blue (let's just say the replanting a few days before the Olympic Torch passed by got it right).

This year we also celebrated the 250th birthday of our five 'Old Lions' with a talk on ginkgos (and their chi chis) by Dr Peter Del Tredici from the Arnold Arboretum. For reference, the Old Lions are *Ginkgo biloba*, *Robinia pseudoacacia*, *Platanus orientalis*, *Zelkova carpinifolia* and the brick-reinforced *Sophora japonica*. While it's nice to enjoy the old farts, it's also good to be planting new trees, and the latest has an Olympic connection.

According to the official LOCOG media release, 4,000 trees, 300,000 wetland plants and (to use that well known unit of bigness) "in excess of ten football fields worth of nectar-rich annual and perennial meadows" were planted on the Olympic site. Not surprisingly, an English Oak was part of the British Garden. Not just any English Oak, a descendent of the de Coubertin Oak.

When a tree gets its own name you know the tree has either grown rather big and old, or has witnessed something important. The Bowthorpe Oak near Bourne, in Lincolnshire, is over 1,000 years old and has the largest girth (42 feet) of any English Oak in Europe. The Royal Oak, growing near Boscobel House in Shropshire, was reputedly where King Charles II hid from the Roundheads - you can now see one of its reputed offspring.

This particular de Coubertin Oak was grown under the guidance of Royal Botanic Gardens, Kew staff from acorns gathered beneath a tree planted by Baron Pierre de Coubertin, the founder of the modern Olympic Games. Forty trees from this source were planted across England, from Much Wenlock to the Olympic Park, via Kew Gardens.

De Coubertin was a nineteenth century Frenchman looking for a ways to encourage the youth of his day into worthwhile pursuits. He found inspiration when he visited Dr Brooks in Much Wenlock (in Shropshire, home of the Royal Oak), and saw their 'Olympian games' that had been running for 40 years. Thus inspired, M. de Coubertin went on to organise the first of the Modern Olympic Games in Athens, in 1894.

In 1890 de Coubertin planted an oak in Much Wenlock to celebrate his inspiring visit, and the descendents of this tree now mark out the route from Shropshire to Stratford. *Quercus robur* is not a bad choice, being the most common woodland tree in England. It is also the commonest species of tree in Kew Gardens, and we now have one more.

Speaking of trees, artist-in-residence David Nash continues to slash and burn them, but only after they have died a natural death. His sculptures will be on display inside and out until April 2013. David has also done some lovely charcoal sketches, perhaps with the charred remains of sculptures that didn't work out?

As the Olympics fade into history, and summer fades before it's even started, I continue to enjoy the plants and landscapes of Kew Gardens and Wakehurst Place. I have to confess though that for my early morning walks at Kew my head is full of noise.

Rather than listening to the bird calls and squirrel scurrying, I have an mp3 plugged into my ears. Some of it is educational, such as downloads of *In Our Time* from the BBC and the world's best *Science Show* from ABC Australia. But I also indulge my music tastes, catching up with latest purchases or a weekly pose of *If There is Hell below* (my newly discovered fix of British music) and *All Song Considered* (from National Public Radio in the USA). I recommend all four podcasts, for different reasons.

My excuse is that I have make best use of my time and why do one thing when you can do two, or three (I can also take photos for blogs). I should also point out that the lovely animal squawks are interrupted every 60 seconds or so by one of those planes full of people looking down at the floral Olympic Rings. And the traffic noise on one side of the Gardens competes energetically with the natural orchestration anyway.

Still, there it is. My mornings are followed by the usual mix of meeting and emails. I'm spending a lot of time of matters to do with Wakehurst Place, and I like that. Not only is Wakehurst the home of the Millennium Seed Bank but it is a lovely botanic garden set in a very attractive agricultural and semi-natural estate. We even have sheep and a shepherd. There are a few exciting developments on the horizon but more of that at some later time.

In September our new Director, Richard Deverell, starts so there should be plenty to report on that as well. Meanwhile, I'll continue enjoying (if not hearing) the Sir Henry Price walled garden and then walking to 'Andy's (Jackson) Lookout' across the Loder Valley at Wakehurst Place, the giant *Victoria cruziana* lily alongside the world's smallest water lily *Nymphaea thermarum* in the Waterlily House at Kew Gardens, and not having to wear a sun hat in summer.

Tim Entwisle
London, 10 August 2012

Book Reviews

McKenzie's maxim "The animal species, the dose and the circumstances make the poison"

***Australia's Poisonous Plants, Fungi and Cyanobacteria: A Guide to Species of Medical and Veterinary Importance*. By Ross McKenzie. CSIRO Publishing, Collingwood, Victoria. 2012. 976 pp. ISBN: 9780643092679. AU $195.00 (hardback) http://www.publish.csiro.au/nid/21/pid/6507.htm**

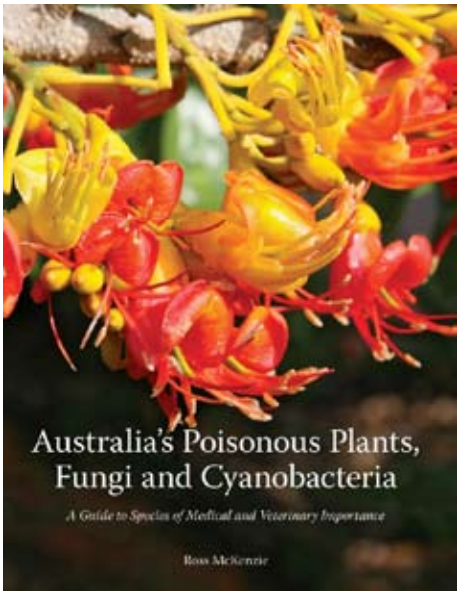
This book, with a spectacular cover photograph of the orange and red flowers of the black bean, is a coffee table book. This is where it should be kept. Why? Firstly, because it is too heavy to constantly pull off the shelf, and secondly, it is a book into which you and all visitors should regularly dip. Once you have thoroughly absorbed the introductory section including the preparatory remarks on legal issues and how to use the book, then you may proceed to the remaining 881 pages for dipping purposes.

The aim of this book is to provide a comprehensive guide to organisms which are major threats to human and animal health (both native and introduced). It aims to provide easily absorbable information for use by a wide variety of potential users so that poisonous plants, cyanobacteria and fungi can be recognised and information obtained on toxins and syndromes, which will help prevent the poisoning, particularly of domestic animals.

The book is divided essentially into three sections. An introductory section covers what is meant by 'plant' poisons, their common profiles and the process of identification. The middle section covers the most important cyanobacteria, fungi and vascular plants in detail. The latter are grouped with others of similar structure, for instance, all the ferns are together and likewise the vines. The last 305 pages include a digest of poisonous cycanobacteria, algae, slime moulds, macrofungi and vascular plants in Australia; an appendix; a glossary; references and a well organised index. The choice of species reflects their importance whether because of ability to damage organs, or because they are widespread. The major group excluded is the bryophytes, no doubt because of their size and the fact that they are not normally eaten by vertebrates, although some do accumulate minerals and phenols.

The first section provides a lot of practical advice such as how to press plants and where to send them for confirmation of identification. For each 'plant' in the body of the book, a risk assessment has been made resulting in a 'danger rank'. While this is only a rough guide, I suspect it will be very useful. Family names are those used in the *Flora of Australia* series except for some of the monocots.

I would have liked a reference to any alternative names being used by APG II and APG III, since they are appearing more and more in the literature and this book should have a long life as a reference book. Some of the email addresses of herbaria etc are already out-dated. Perhaps these should have been omitted and left for users to search on-line. In the last part of this section, details of the nature of each toxin or syndrome are presented as 'profiles'. This avoids repeating this information for each species or groups of species. Each profile is preceded by a box which includes a summary of important information. A similar box appears before each species treated in the main section. These boxes contain such information as; is there effective treatment or not; are effects chronic; and is the onset of symptoms immediate or delayed etc? I found this section very easy to read, clearly presented and I suspect it is in this part where there will be the most bookmarks!



The middle section on poisonous cyanobacteria, fungi and vascular plants is excellent. For each species or group of species there is a 'summary box' followed by the scientific name and its origin, family name and common names where appropriate. These are followed by the description, main distinguishing features, phenology and, if there are confusing species, these are listed. Each species is accompanied by distribution and habitat details as well as clear distribution maps. Then comes toxicity details and what animals including humans may be affected. Excellent colour photographs, most taken by the author, accompany each species. These usually show both habit and a close up of useful features for identification.

Spread periodically throughout the section are what McKenzie describes as "side shoots" or boxes with interesting trivia such as "Death by umbrella", referring to the use of the toxalbumin, ricin, to dispatch a Bulgarian dissident. The information in these trivia boxes is excellent for guest speakers or lecturers, but there are other gems spread throughout. I was pleased to note that while humans can safely eat grapes, dogs can't eat fresh or dried grapes and cattle would be better to leave them alone. However, I wouldn't advise eating some of the native grapes like *Clematicissus opaca*, where a minimum of 5 full strength beers are required to remove the effect of consuming one fruit! They are full of calcium oxalate raphides.

The last third of the book is mainly composed of the "Digest". The aims of this section are "to put into perspective the major poisonous species described in detail in this book and to provide a source of information that is not readily available elsewhere". My only criticism of this section is the toxin listed doesn't always guide you back to the Profile Syndromes. *Passiflora* spp. contain cyanogenic glycosides but the syndrome is listed as "cyanide poisoning "and you have to carefully read the description to realise that cyanogenic glycosides are part of this syndrome. I would have liked to have seen a page reference to the appropriate syndrome or otherwise a sub-heading.

The Digest is followed by six appendices; aids to identifying flowering plants; the top killers; poisoning hot-spots; animals and the major species that poison them; body systems affected by the major poisonous species; and Australian states with major poisonous species. The list of plants associated with different animal species will be useful when walking around a paddock looking for potentially toxic plants corresponding to the syndrome being exhibited by the horses or cattle whatever. These appendices are invaluable.

I only noticed one spelling error: umbell rather than umbel, but then I didn't read every page!

I have no doubt there will be readers who can't find a particular species, but the author makes no apologies for this.

Everyone involved with livestock, or who work or live in areas where there are potentially dangerous plants, fungi, and cyanobacteria present, should have a copy of this book readily available. It is well illustrated and clearly written with a minimum of scientific terms used in the descriptions. Unavoidable terms are defined in the glossary. I would recommend that every medical, veterinary and biological school library should have at least one and preferably more reference copies.

This book certainly achieves the aims of the author. It will certainly be sitting on my coffee table.

Betsy Jackes
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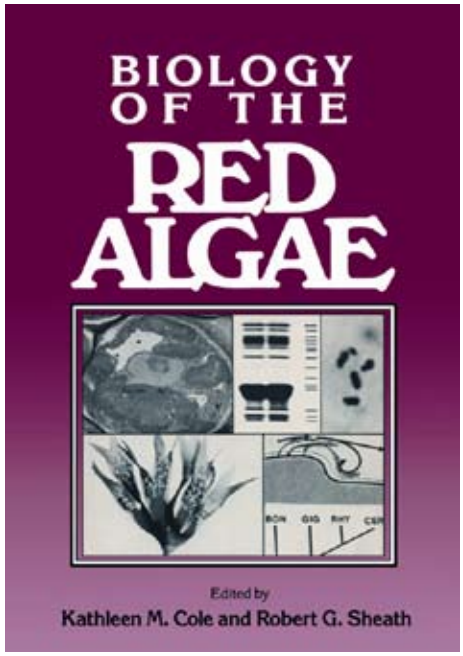
Townsville, Queensland

***Biology of the Red Algae*. Edited by Kathleen M. Cole and Robert G. Sheath. Cambridge University Press, Cambridge, UK. 1990 [2012]. 528 pp. ISBN 0521343011/9780521343015. AU $85.95 (paperback, print-on-demand). http://www.cambridge.org/aus/catalogue/catalogue.asp?isbn=9780521202466**

The day after I ordered a swag of books on-line, my wife Lynda gave me a Kindle for my birthday. So the likes of Martin Amis' *Lionel Asbo*, Ian Stewart's *Mathematics of Life* and William Gass's *The Tunnel* sit on my bedside table while I plunder the web for free books and forgotten treasures. I have bought some new stuff for my Kindle – the third of Cormac McCarthy's Border trilogy and Daniel Charnovitz's *What a Plant Knows* – but they join Boswell's *Life of Johnson*, Ambrose Bierce's *The Devil's Dictionary* and Joyce's *Ulysses*, all books I own in heavy copy but just couldn't resist for free and in searchable form.



I haven't quite got used to reading on the Kindle. I love the smell and texture of books, the font and the layout, and the sense of size and progress that is never quite there in book-lite. My recent purchase, a hard, heavy copy of Haruki Murakami's two volume *IQ84*, was a real treat to hold and behold. As it turned out I wasn't enthralled by the content but as an object to read, bliss. Still, you can read your Kindle and eat breakfast, which is a good thing. I've never like dobs of jam and butter seeping through the pages of my books, as inevitably happens when I try to prop a paper book open under my breakfast plate. And I've begun to realise how nice it is to have books when I want them and searchable. Just a shame I can't download the *International Code of Botanical Nomenclature* as a pdf or Kindle product, yet.

Which all, a little circuitously, brings me to the print-on-demand version of *Biology of the Red Algae*. When this book was first published in 1990, I had just started my first 'real' job. I was employed at Royal Botanic Gardens Melbourne as a Flora Writer. The Floras I would write were of flowering plants, not algae, but I was lucky enough to be granted time to continue my research interest in freshwater algae. So between writing up the filmy ferns for the *Flora of Victoria* I returned to my first algal love, the red algae. I'd studied them in my Honours project at University of Melbourne before switching taxonomic allegiances and then disciplines for my PhD and post-doc. So there I was back with the red algae…and the filmy ferns.

I needed to catch up quickly with what had

happened over the last decade, without having to spend too many hours peddling across to the university library or chasing up interlibrary loans. I had email, the first at the Botanic Gardens and linked through to the university, but google was then just a misspelling of googol (as I discovered from a Google search today). Opening *Biology of the Red Algae* in 1990 was an exciting prospect. I was back in familiar territory, soaking up new discoveries and ideas. I've always liked review books and articles, summaries of what we do and don't know. The perfect review article – to mine – has plenty of facts, a good historical perspective and lots of juicy research questions posed. *Biology of the Red Algae* did all this and the timing was perfect for my return to active research on this group.

Twenty years later this book is of course out-of-date. It would still be a good place for a young rhodophycologist to start but only as a stepping stone to the more recent literature. Plenty has changed in our understanding of the red algae since 1990. Re-reading the book today it's a lovely trip down memory lane and quite poignant in that respect. DAPI staining was all the rage and molecular systematics was in its infancy – the first tentative molecular phylogenies were appearing in print and the polymerase chain reaction had only just been devised. In the introduction to the book my PhD supervisor Bill Woekerling says '…a clearer picture of the origin and evolutionary relationships of the Rhodophyta cannot emerge until new, more definitive evidence (perhaps of a biochemical or molecular nature) becomes available'. This evidence is now available. Although some may question its definitiveness, we are a long way from the often hand waving speculations of 1990. But it's too easy to list where this 1990 publication is mistaken or misguided. That's not the point: we systematists are used to extracting gold from historical seams.

Perhaps more interesting is the way this has landed in my lap. It's a print-on-demand book. Something between the Kindle (or equivalent) and the one-off heavy book. This is definitely heavy and full of paper, but it's always available to purchase. Rose Johnstone from Cambridge University Press says that they have 'reached a point where it is economically viable for us to be able to print just one book at a time, so we've taken the opportunity to offer this service for titles that otherwise would have done out of print…they've been brought "back to life", as it were'.

My 1990 copy was hard-bound and the quality of the printing and presentation better, but at a cost of US$65. In this print-on-demand version, at a cost of about US$60 after 22 years of inflation and rising book prices, the text runs a little too close to the binding, the illustrations are very grey, and the fading pink on the cover already looks like it's been on my south-facing (I'm in London!) book shelf for a year or two. All up it looks a little dated in style – very 90s – but I can't blame the reprinting entirely for that. The information is all there.

As with all publication innovations it will challenge and irritate librarians I'm sure. What I presume to be a print-on-demand copy was advertised on one website as '*Biology of the Red algae*. Cole, Kathleen M. and Robert G. Sheath, editors; Cambridge: Cambridge University Press, 2011…This book presents an authoritative review on the state of knowledge on the biology of the Red algae….' The date is of course misleading (this is no new edition or revision) and the descriptor 'state of knowledge' applies to the past rather than the present. Another site is more truthful and helpful, leading off with 'When Biology of the Red Algae was first published in 1990, it was the first comprehensive monograph to be written on the Rhodophyta in over fifteen years'.

That last statement does beg a question. If this book was necessary in 1990, 15 or so years after Peter Dixon's *Biology of the Rhodophyta*, surely after 22 years further years of spectacular scientific innovation and accumulation of knowledge another edition is due? I'll leave that for those still actively pursuing research on the red algae to ponder. I'm dabbling but only just. For me the big question is whether it makes sense to publish this kind of book in hard copy when I have my Kindle nearby and could search and skim through it electronically. I'd answer with a qualified yes. The layout of text books, and most pdfs for that matter, is still too complex to read easily on the kind of device I have. Kindles are really best for long strings of grammatical sentences (e.g. a novel). As I've already mentioned I also retain a

quaint fondness for the sensory attractions of a heavy book. Still, I am struggling to prize open this print-on-demand book while I type the final sentences on my laptop. Perhaps a Kindle version would be better.

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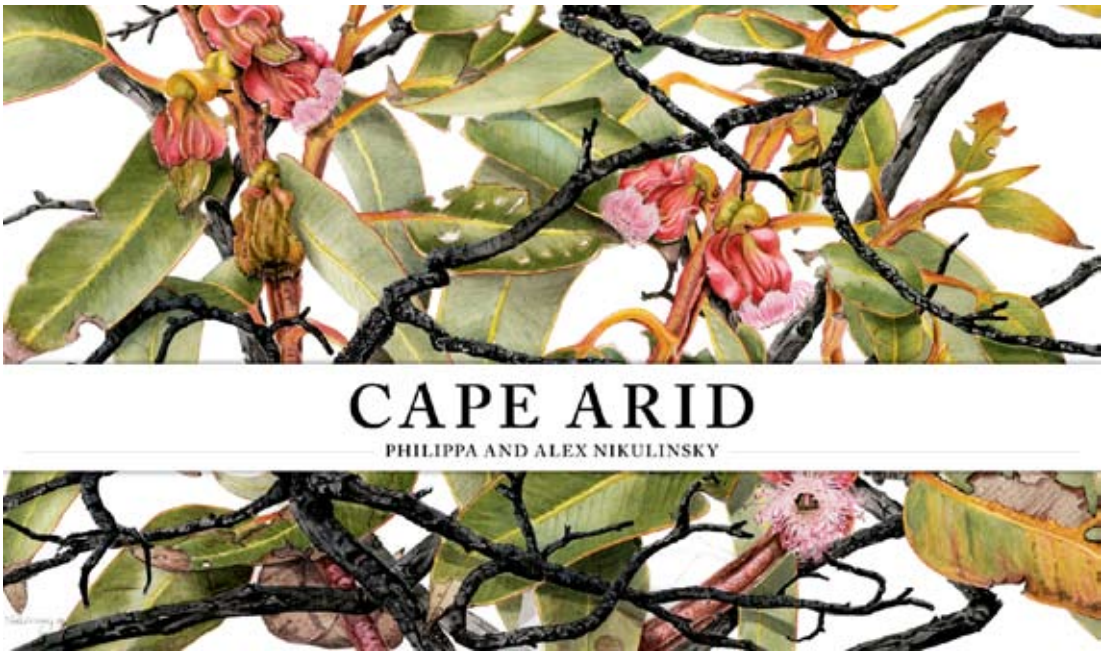
Richmond, Surrey, UK

***Cape Arid*. By Philippa and Alex Nikulinsky. Fremantle Press, Fremantle. 2012. 64 pp. ISBN 978-1-92208-900-7. RRP AU $65.00 (hard cover). http://www.fremantlepress.com.au/books/newreleases/1320**

As someone with a longstanding interest in both watercolour paintings and Western Australian, indigenous flora, I awaited the arrival of this book great anticipation. I have known and admired Philippa Nikulinsky's work for a long time but am not able to afford the originals. This is a delightful volume filled with Philippa's meticulous, watercolour paintings of plants, birds, insects and animals, complemented by bold, black and white landscapes by husband Alex and a written record of their journeys. I was initially surprised by the lack of colour in the landscapes but quickly realised this is actually the perfect medium to express the grandeur and starkness of Cape Arid.

The authors, Alex and Philippa Nikulinsky, are both experienced artists. Philippa is probably the best known wildlife artist in Western Australia. Her work is extensive and includes covers for the Department of Environment and Conservation's publication *Landscope*, five books on the flora of Western Australia, designs for Australian fine china, and exhibitions both solo and in association with the Botanical Artists Group (BAGs). Alex, Philippa's husband, is an ex-statistician who retired in 1993 to train as an artist at Claremont School of Art and is now Philippa's travelling and painting companion on their extensive trips throughout the state. Both authors have a detailed knowledge of the natural history of Cape Arid and their observations of the plants, animals and landforms of the area are included. This book is their first publication together and is the culmination of 11 years of camping and painting trips to Cape Arid to photograph, sketch and paint.

Cape Arid National Park is a remote, wild and fascinating area on the far south-coast of Western Australia lying at the southeastern edge of the South-west Botanical Province overlapping into the arid zone. It is about 120 km east of Esperence, 850km from the state capital Perth,



and covers approximately 280,000 hectares. The park contains a wide variety of vegetation types including banksia woodlands, coastal heath, mallee and eucalypt woodlands, providing a wide array of habitats for plants and wildlife. Approximately 160 bird species inhabit the park including the endangered western ground parrot and several other rare species. Like most of coastal southern Western Australia, the area is extremely windy and prone to extreme and sudden weather events which include howling winds, sleet and 43 degree heat. The Nikulinskys travel in two troop carriers taking everything they need with them and camping rough. I can personally attest to the wild changeable weather, rain, airborne grit and ubiquitous bush flies through my own experience of camping at Cape Arid and Mt Ragged many years ago. These conditions may make camping and painting difficult but the resulting paintings and book must be all the more rewarding for their struggles with the elements.

Cape Arid is divided into an introduction, with sections by each author describing their personal outlook on painting and wild places, followed by seven chapters each based on multiple trips to a different site within the national park. Each chapter is introduced briefly and combines major paintings with minor illustrations, comments on 'happenings' or events that occurred on the authors' trips including transcripts of pages from Philippa's dairies. The paintings are not exact replicas as some artistic license has been used to improve the aesthetics by balancing the landscapes, and including insects, lizards, frogs and birds in captured fragments of bush land. One of the outstanding paintings of the chapter on the Thomas River is a fold-out shore-scape covering 3 pages and containing wind blown shorebirds, crested terns, a sea eagle, dolphins, a dozing seal, and piles of shells, dried seaweed and a dead globefish on the shore. All evoke memories of wandering along a cold, windy, southern beach.

This is also an extremely personal and revealing book. It not only contains very beautiful paintings but also reveals a great deal about the artistic temperament through the personal observations of the authors. Many years ago friend and author, Ethel Bundell-Webb, once explained that one of the most important needs of artistic people was the need for solitude, without which it is impossible to work. This comes across very strongly as throughout the book both Philippa and Alex repeatedly describe the need for solitude to observe, experience and understand before attempting to paint.

This is an unusual book not just because of the format (24 cm x 42 cm) but also because of the very personal experiences described within. Since acquiring it I have returned to it repeatedly to delve into the detailed paintings and to read the anecdotes. At $65.00 for 64 pages it is rather expensive, but it would be a great addition to the library of anyone interested in Australian flora and painting, or as a souvenir of a trip to the southern coast of Western Australia. Buy it for the paintings and learn about the psychology of the creative mind.

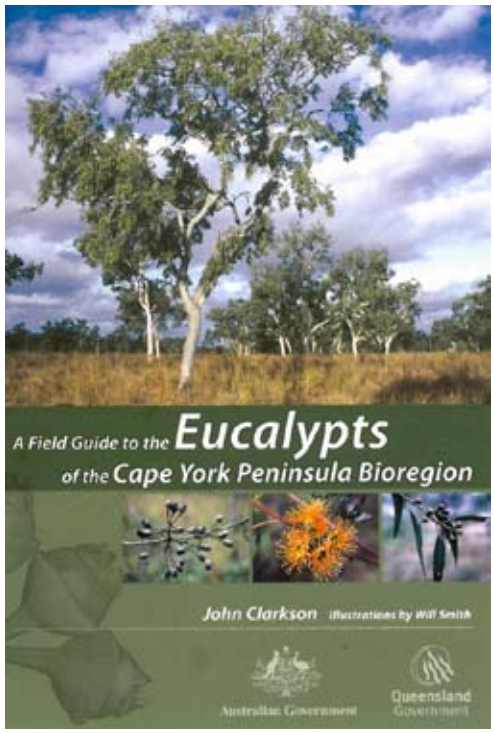
Margaret T. Collins
University of Western Australia
Crawley, Western Australia

***A Field Guide to the Eucalypts of the Cape York Peninsula Bioregion*. By John Clarkson with Illustrations by Will Smith. Queensland Government. 2009. 110 pp. ISBN: 9311662182647. Gratis (paperback or CD); contact John Clarkson: john.clarkson@qld.gov.au**

The 1966 CSIRO Mitchell-Normanby land system survey (Galloway *et al*. 1970) covered the southern half of Cape York Peninsula. In his field notes, Robert Story, the team's botanist, frequently recorded "bloodwood species" along with no other identifier. Had Robert had access to *A field guide to the eucalypts of the Cape York Peninsula bioregion*, he could have immediately eliminated the various fully or partly gum-barked bloodwoods; discounted the distinctively bristly one; and ignored the single bloodwood that is only found further north. He would then have been left with *Corymbia intermedia, C. nesophila*, *C. polycarpa and C. clarksoniana*, the latter named in 1985 in honour of this field guide's author. A quick check of the fruit shape and length, leaf colour and under-bark colour would have reduced Robert's number of options to one.

Naturalists visiting the peninsula before and since have found the separation between these bloodwoods problematic. Many of them would have landed on the doorstep of the herbarium in Mareeba to ask John Clarkson, the field guide's author, for clarification. After being led through a number of simple defining characteristics, the enquirer would leave wondering how they had found the identifications so intimidating. A trip in the field would be even more re-assuring, as John pointed out the differences in stature and habitat preferences.

John's book simplifies the identification of other Cape York eucalypt species that can be tricky for the amateur to separate, such as the boxes, *Eucalyptus chlorophylla* (shiny-leaved), *E. leptophleba* (largest fruit), *E. microtheca* (smallest distinctive fruit) *and E. tardicens* (multi-stemmed), as well as providing simple features that can be used to identify each of the 17 *Corymbia* and 24 *Eucalyptus* species or sub-species found on the peninsula.



This is not a taxonomic work, and that is what makes it so useful. The features that distinguish a species from the handful of others in this bioregion may be shared by many eucalypts elsewhere in Australia, and so not included in field guides or botanical keys that cover more extensive regions. Unsurprisingly, the reader is directed to consider bark characteristics first, and then buds, fruits, leaves and habit. One of the most important features used to eliminate alternative species is the distribution. Species maps based on herbarium collections alone would be indicative at best. However, John's intimate knowledge of Cape York Peninsula and its vegetation mean that the maps provided in this book are highly detailed and accurate.

Perhaps more surprising, is that, barring the ghost gums on the cover, not a single picture of a tree graces the pages of this book, and nowhere is tree height mentioned. Again, this avoids confusion experienced when using field guides designed for further afield. Trees photographed in one area often give a poor reflection of the same species growing in a different landscape. Only once the reader has become familiar with the finer diagnostic features is it safe to identify the tree from the look of the species. John's book allows the reader to develop this familiarity.

The illustrations by Will Smith are crisp and unambiguous, instilling the user with the same confidence that John could provide in person. The format is attractive; the paper reasonably water-proof; and the spiral binding robust, which is a good thing as the only way to replace your field copy when current stocks run out is through printing one from the CD.

John Clarkson has achieved a simple and easy-to-use field guide that provides a fine template for other species groups and bioregions. A field guide to the acacias of Cape York Peninsula was intimated at one stage, and would still be a useful addition to any field trip to the north. John has a long way to go before he makes himself redundant as the most-called upon expert for those embarking on botanical forays to Cape York Peninsula.

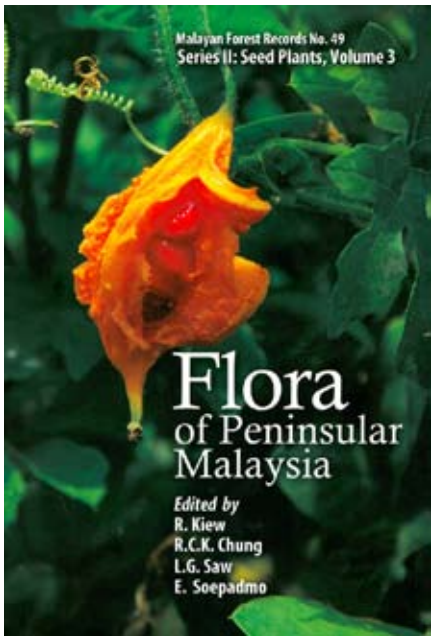
Reference

Galloway RW, Gunn RH and Story R (eds) 1970. Lands of the Mitchell-Normanby area, Queensland. Land Research Series No. 26. CSIRO, Melbourne

Gabriel Crowley
Atherton, Queensland

***Flora of Peninsular Malaysia: Series II: Seed Plants, Volume 3*. (Malayan Forest Records No. 49). Edited by R. Kiew, R.C.K. Chung, L.G. Saw and E. Soepadmo. Forest Research Institute Malaysia, Kepong. 2012. 385 pp. ISBN 978 967 5221 73 6. RM100.00 / US $75.00 (hardback) http://www.chm.frim.gov.my/Mresources/Publications/Books/Floras/Flora-of-Peninsular-Malaysia.aspx**

This *Flora* sets a high standard. The lavish allocation of space to text (seemingly as much as required), illustrations and maps provide a refreshing approach to writing a regional *Flora*. This volume, the fourth to be published (in two series), covers ten families: Chrysobalanaceae, Cleomaceae, Cucurbitaceae, Cycadaceae, Juglandiaceae, Lecythidaceae, Magnoliaceae, Nepenthaceae, Ochnaceae, Olacaceae and 123 species. The species accounts take up 313 pages of the text, almost three pages per species! Note that figure and map numbers start afresh with each family treatment. A section of colour photographs illustrating a large cross-section of the species included adds an additional dimension to the volume. Detailed instructions for authors are found online (Web ref. 1) and these serve as useful instructions for preparing a detailed *Flora* treatment.



Starting with an introduction to plant conservation in Peninsular Malaysia, all species are assessed according to the IUCN guidelines at a local level. A considerable number of species have some degree of conservation concern in the region, largely due to clearing of habitat. With a flora estimated at 8,500 species, Peninsular Malaysia is floristically very diverse. The plan for the series is to publish about 100 species per volume, so another 80 or so volumes can be expected in due course – an ambitious project that is off to a very fine start.

The *Flora of Peninsula Malaysia* follows on in style from the *The Tree Flora of Sabah and Sarawak* published between 1995 and 2007 by Soepadmo *et al*. (a low resolution pdf version of these volumes is available for free online; Web ref. 2). The taxonomic accounts provide descriptions of the families, along with bibliographic details, vernacular names, distribution, uses and taxonomy. Dichotomous keys and full descriptions are presented from genera down to infra-specific taxa.

Introductions are given to families and genera, with space allocated to discussion of particular points of interest (phylogenetic history, ethnobotanical usage etc). The derivation of epithets is also provided (where known). For species, full citation details, relevant synonyms and type details are included. Diagnostic features are emphasised in the descriptions with italic text. Other than types, no specimens examined are listed, though the maps consist of specimen-based points.

Authors are from various countries around the world but examination of the species included in the treatment, both in the herbarium and in the field, is stipulated as a requirement for all contributions. This requirement for a fresh re-evaluation of taxonomic concepts has lead to the recognition of several new species in the course of preparing this volume, including a new species of *Cycas*, three new Lecythidaceae, a Cucurbitaceae and an Olacaceae. The case of *Cycas* is particularly noteworthy, as only four species occur in Peninsular Malaysia, with another of these only being named by Hill in 1999 (Hill & Yang 1999).

In several cases, multiple keys are provided to either flowering or fruiting material (*e.g*. Cucurbitaceae), which is very useful for such

groups. In some cases, doubtfully recorded or questionably naturalised species are included in the keys but not discussed further in the text.

I found very few errors in the text, and none of consequence. Three lines of text have inadvertently been repeated on the following page in the introduction to Lecythidaceae (pp. 173–4).

There are a number of recent nomenclatural changes adopted in this volume. The break-up of *Cleome* L. is accepted but unfortunately, as with the *Flora of North America* and the *Flora of China*, the use of *Arivela* Raf. overlooks the earlier name *Corynandra* Schrad. ex Spreng. Further clarification of the application of the latter name is expected from Iltis and Cochrane in the near future. The inclusion of *Mukia* in an expanded *Cucumis* is not followed. While a larger number of genera have been recognised in Magnoliaceae in the region at various times in the past, an expanded circumscription is adopted here so that all species in the region are included under *Magnolia*. Looking afresh at the description and images of *Careya arborea*, the similarities to the northern Australian *Planchonia careya* are unmistakable, and perhaps foreshadows the possibility that ongoing studies of the generic relationships may result in an expansion of *Careya* to include *Planchonia*.

A number of the species in Peninsular Malaysia extend widely across Asia, including to northern Australia. These include *Maranthes corymbosa*, several species of *Cleome* (*s.l.*), *Coccinia grandis*, *Luffa aegyptiaca*, *Barringtonia acutuangula*, *B. asiatica*, *Nepenthes mirabilis*, *Olax imbricata* and *Ximenia americana*.

I have been through the entire book several times in preparing this review and consider it a valuable addition to my library. It is a high quality publication, a thorough regional treatment, and makes a significant contribution to knowledge of the flora of the broader Malesian region.

References

Hill, K.D. & Yang, S.-L. (1999). The genus *Cycas* (Cycadaceae) in Thailand. *Brittonia* 51: 48–73.

Web ref. 1. http://www.chm.frim.gov.my/Resources/Publications/Guides-for-Contribution.aspx [Accessed 27 July 2012]

Web ref. 2. http://www.chm.frim.gov.my/Resources/Publications/Books/Floras/Tree-Flora-of-Sabah-and-Sarawak.aspx [Accessed 27 July 2012]

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Huanduj: Brugmansia. By Alistair Hay, Monika Gottschalk and Adolfo Holguín. Royal Botanic Gardens Kew and Florilegium. 2012.. 424 pp. ISBN: 9781876314309. AU$95 (hard cover) http://www.florilegium.com.au/?product=huanduj-brugmansia

Botanists work on 'wild' plants. Cultivated plants (also known as culta or cultigens – whichever designation you prefer for plants that have been altered under human influence) rarely figure in their taxonomy. In most herbaria cultivated plants are relegated to separate folders, shelves, or even a separate herbarium altogether. Part of the reason for this is that they are not 'natural' and can be difficult because many have a dubious bloodline and a poor literature to back up the business of description and identification. Some of the distrust associated with these *planta non grata* can be placed firmly at the feet of Linnaeus himself who made no secret about his distaste for such plants – and the people who worked with them – people he referred to disparagingly as 'anthophiles'.

"*anthophiles … practice a floral science all their own, grasped only by their devotees; no botanist in his senses will enlist in their camp*."

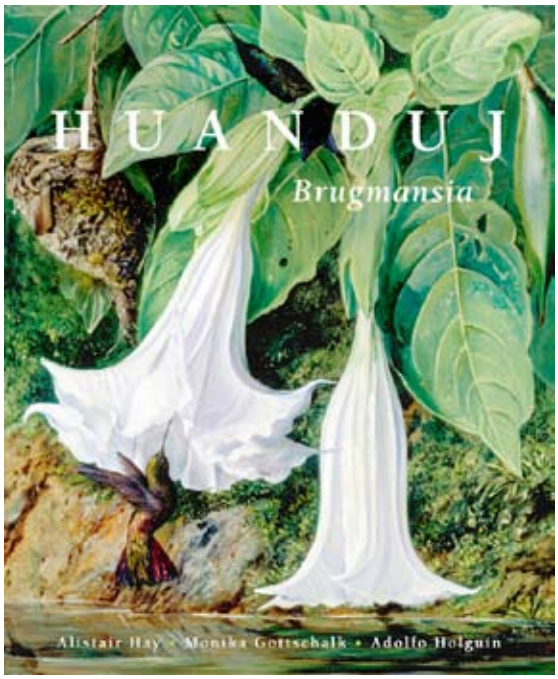
"*All the species recognized by botanists came forth from the Almighty Creator's hand, and the number now and always will be exactly the same, while every day new and different florist's species arise from the true species recognized by botanists, and when they have arisen they eventually revert to their original forms. Accordingly to the former have been assigned by Nature fixed limits, beyond which they cannot go: while the latter display without end the infinite sport of Nature*."

"*... botany has been overborne by the system of varieties for long enough … few, if any, agree as to what constitutes a species, or what a variety; … I wish the system of varieties were entirely excluded from Botany and turned over entirely*

to the Anthophiles, since it causes nothing but ambiguities, errors, dead weight and vanity …"

The "system of varieties" [in the horticultural sence] was indeed handed over to the anthophiles; but it took until 1953 (the date of publication of the first *International Code of Nomenclature for Cultivated Plants*) for it to happen.

I mention all this because of the recent arrival of one of the world's few books that does full justice to both the world of botany and the system of the anthophiles. And how appropriate for this genus because, after establishing the distinction between the genus *Datura* and of *Brugmansia* (a long-standing botanical issue), the authors note that the seven recognized species have a " … *virtually exclusive association with human settlement*" adding, in the section on natural history, that " … *it is at best debatable whether any at all are really 'wild'. Indeed Brugmansia may well be a unique case of an entire, widespread continental genus of several species persisting in or as relicts of cultivation*" and also note that its human connections may well extend back 10,000 years hidden, probably forever, in the mysterious and magical depths of South American history.



Huanduj is appropriately divided into two sections, the botanical (which, apart from the taxonomy, includes its natural history, cultural uses, poisonous, medicinal and ritual uses), and horticultural (cultivation, propagation, diseases, breeding and cultivars). All are lucidly written with scholarly attention to both depth and detail. I am reminded of another excellent monograph published with the assistance of Kew Gardens by Tim Upton and former Kew horticultural taxonomist Susyn Andrews, a global monograph of the genus *Lavandula* including the mesmerizing difficulty of its horticultural variation.

The book devotes 79 pages to botanical taxonomy and 100 pages to cultivars. Appendix 1 lists those 1,800 or so cultivars (differing in habit, flower colour and forms, doubling, fragrance, climatic tolerances and more) that the authors consider have been established in accordance with the *Cultivated Plant Code* including many that have been raised as commercial hybrids in Germany and America. This assessment by the authors will surely be a great contribution to *Brugmansia* Growers International and the Deutsche Dahlien-, Fuchsien- und Gladiolen-Gesellschaft (later offshoots of the Brugmansia International Cultivar Registration Authority). This is followed by Appendix 2 and its nomenclatural notes, including reasons for cultivar rejection. Potential breeders have invaluable and extensive notes on hybridization techniques for each of the hybrid species involved.

In the matter of grouping this plethora of entities, the authors discuss the relative merits of a classification based either on breeding history or observed characters, plumping for the former. It is perhaps a bit misleading to suggest that groupings (called Cultivar Groups with a capital C when the appropriate classification category is simply the Group) "… *must be appearance-based*" (p. 154) followed up with the assertion that "*Cultivar Group classification in Brugmansia would … impose a rather inflexible grouping based on certain fixed pre-selected characteristics …*" (p. 310) which runs counter to the actual intention of the 2009 *Cultivated Plant Code* which (totally unlike the *Botanical Code*) allows multiple classifications

of the same cultivars based on any criteria of convenience.

Brugmansia is a truly handsome genus: its hallucinogenic properties, exquisite trumpets and – yes, its presence on a continent other than our own – only enhance the tantalizing mystery of its association with humans.

Huanduj is an outstanding addition to the literature on cultivated plant taxonomy. It combines impressive and meticulous scholarship with superb illustrations and a love of the genus that is evident on every page. It will delight and inspire its readers for many years to come.

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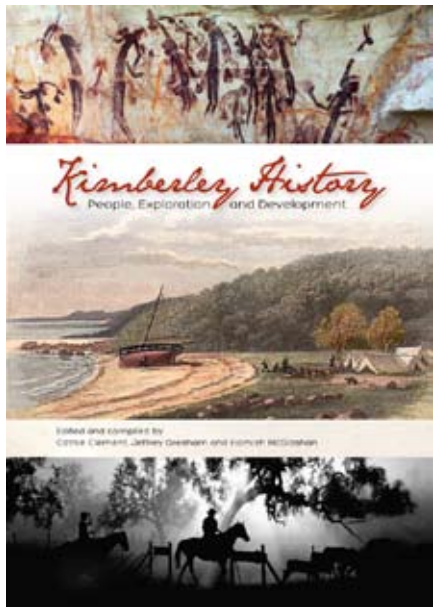
***Kimberley History: People, Exploration and Development*. Edited and compiled by Cathie Clement, Jeffrey Gresham and Hamish McGlashan. Kimberley Society Inc., Perth. 2012. 227 pp. ISBN 978-0-9587130-2-3. RRP AU $49.95 (paperback) contact Jeffrey Gresham, gresham@iinet.net.au**

This book presents papers delivered at a symposium held by the Kimberley Society in Perth in 2010. An impressive array of speakers was assembled, delivering 15 papers. Topics include maritime and land exploration, archaeology, rock art, guano mining, the gold rush of 1885–86, plant collecting, Christian missions, attempts at pastoralism, and an overview of the effects of settlement and development. Speakers and editors must be congratulated for publishing the book relatively quickly, and to a high standard.



The Introduction by Jeffrey Gresham briefly describes the geography, climate, vegetation and geology, then summarises Aboriginal occupation and European exploration, settlement and development.

Mark Bin Bakar gives an Aboriginal perspective of their history and current situation, generally well balanced but with a few questionable comments such as referring to Europeans as 'a foreign foe', and the Aborigines living 'in perfect balance with the environment' 'as God had intended', even though Christian and other concepts of God were unknown to them.

Michael Morwood reviews the archaeology, discussing how the first people reached the Kimberley, evidence from excavations, and the very complex rock art. Although there are marked discontinuities in the sequence of the art, we do not know whether the present-day Aborigines are descended from the first people to reach the region or whether there has been more than one influx, perhaps with the earlier one(s) disappearing. During the last glacial maximum c. 120,000 years ago, the coastline was up to 200 km west of its present line. There is archaeological evidence of inland movement of shells etc. but nothing besides, and there are no legends about this period.

Moving to the modern period, Cathie Clement reviews European exploration of the coast, in reverse order from Stokes in 1838 to Tasman in 1644, with comments on supposed earlier visits such as by the Chinese, generally all discounted as supposition.

Hamish McGlashan describes George Grey's expedition of 1837–38, enlightened by his own work in retracing Grey's route. Note 11 on page 69, about the confusion over the names Camden Bay, Camden Sound, Camden Harbour and Brecknock Harbour leaves the reader in the dark about which names are official and could have been usefully cross-referenced to the map on page 72 in order to clarify two of these names. (On a point of place

names, La Grange is so spelt throughout the book, although the official form now is Lagrange)

Tony Quinlan then describes the abortive settlement at Camden Harbour in 1864–65, in which his great-grandfather Michael participated and perished. It's a moving account of initial enthusiasm for establishing a new pastoral venture, the resources assembled, the problems faced (environmental and Aboriginal), leading to disillusionment and abandonment.

Long-standing residents of Broome Tim Willing and Alison Spencer give the history of what is perhaps a little-known activity in the Kimberley, guano extraction, which occurred on a number of islands from 1874 to 1921. It never became a real money-spinner due to the deposits being smaller than estimated, not to mention problems with shipwrecks, cyclones and harsh working conditions.

As a young boy I was inspired by Alexander Forrest because we shared a given name and a statue of him stood by a major intersection in central Perth. Geoffrey Bolton gives an account of his journeys in the Kimberley, leading into an insightful account of early pastoralism in the region that also was inspired by his discoveries, and ending with an assessment of the role of the pioneering Durack family who overlanded cattle from Queensland.

Reports of possible gold deposits by Forrest lead directly into the following paper by geologist/historian Phillip Playford, describing the Kimberley gold rush of 1885–86. In a fascinating aside he describes how field books (including sketches) of geologist Edward Hardman, long thought lost, turned up in Yorkshire in England in the 1980s.

The discoverer of the 'Bradshaw' figures, now usually termed Gwion Gwion paintings, is discussed by Michael Cusack who has researched Bradshaw for many years. On a journey from Wyndham in 1891, Joseph Bradshaw was seeking his new pastoral claims on the Prince Regent River but ended up on the Moran and Roe Rivers, finding the art on the latter.

We then have two papers by Kevin Kenneally that follow up the book *Under a Regent Moon*, written jointly with Tim Willing (2002). The first revisits Joseph Bradshaw, his exploration and unsuccessful attempt to settle at Marigui on St George Basin at the mouth of the Prince Regent River before taking a lease on the Victoria River. Aeneas Gunn features prominently in these episodes. A reference to Figure 3 in a sentence on page 136 about Bradshaw's business in Melbourne is to an unnumbered figure on page 134 showing the Bradshaw family, as becomes evident from the caption to Figure 4 on page 137! The paper then switches to an account of Ferdinand Mueller's support of plant collectors and exploration.

Kenneally's second paper deals with conflict between Aborigines and settlers at Bradshaw's settlement at Marigui. It presents the picture from both the 'European' and Aboriginal viewpoints, largely through extracts from journals, correspondence and newspapers, and concluding with a first-hand account (recorded *c*. 1950) of the episode told by Bungani, an Aborigine who was a boy at the time.

Mike Donaldson and Ian Elliot's first paper describes the expeditions in 1898 of Frank Hann, explorer, prospector and pastoralist, who named some 75 geographical features in the region. The rises and falls in Hann's life and the sense of his need to explore are captured well. The map on page 170 has the wrong year for Bradshaw's expedition.

Their second paper describes the Brockman Expedition of May–November 1901, in which Frederick House participated as naturalist. As with other papers in the volume, beautiful modern photographs show us examples of the country traversed. From a biological aspect it would have been good expand a little on House's collections, as was done with the (admittedly larger) collection from the Bradshaw expedition. For his large paper 'The botany of the Kimberleys, North-West Australia' (*J. Roy. Soc. Western Australia* 3: 102–224, 1918), W.V.Fitzgerald may not have seen them all since the introductory note by J.H.Maiden refers to 'few specimens', but there are 66 records of House specimens at PERTH. He also gathered zoological and anthroplogical material, and made a photographic record (on glass plates – 5 are reproduced here). House is commemorated in a

new species of bird that he collected, the Black Grass Wren, *Amytornis housei* (given in the text as *Amytis*), and in *Eucalyptus houseana*.

Christine Choo outlines the many Christian missions that have come and gone in the Kimberley since the first in 1884. None survived as a mission beyond 1987, but some continue as Aboriginal communities. Into a very useful account of the historical facts she weaves social, religious and political issues, and the effects of the two world wars.

In the final paper, Bill Bunbury reviews the impact of [European] settlement and development. In particular he discusses the effect of the decision to award equal wages to all pastoral workers in northern Australia in 1965. Despite the social disruption that arose from this, later problems over native title, mining, changes in technology, environmental concerns etc., Bunbury is optimistic that these can be worked through so that Europeans and Aborigines can live with the land and with each other.

I noticed very few typos and some missing hyphens and spaces. The illustrations are numbered as figures in some papers, not in others. On some new maps based on satellite imagery (usefully showing landforms) some names are not easy to read, nor are the colours of some roads/routes distinctive. The map in Figure 11, page 193, has already been shown on page 5 where a full caption is given. Except for one name, Figure 9 on page 179 repeats Figure 5 on page 174.

I have only one major criticism—there is NO INDEX, making this informative text far less accessible than it ought to be. These days, most computers have indexing software and it would take no more than a couple of days (at the very outside) to index a book of this size.

Despite the blemishes, this book is an excellent addition to the literature on this fascinating region. It's well written, and well illustrated with a mix of engravings, maps old and new, photographs old and new, portraits, images of specimens, copies of letters and other papers. All papers are well referenced. Although a paperback it's strongly bound. For anyone wanting a concise introduction to the Kimberley this book is an ideal start. The price is very reasonable.

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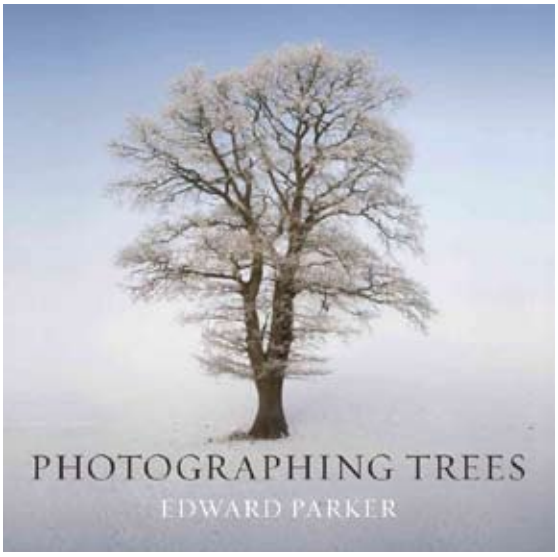
***Photographing Trees*. By Edward Parker. Kew Publishing, Kew, UK. 2011. 128 pp. ISBN: 9781842464762. £18 (± AU$28) (paperback) http://wwww.kewbooks.com/asps/ShowDetails.asp?id=920**

Although prominent in the title, and featured in all 120 of the included photos, the subject of this book is not 'trees' *per se*, certainly not in any botanical sense as might be expected by readers of this newsletter. As stated in the publicity, the trees are essentially "a vehicle for learning how to take much better photographs"; i.e., they are photographic, not botanical, subjects. That's not to say they are treated dispassionately; far from it. The author has been photographing trees for various conservation projects for over two decades and has written or contributed to numerous books on the subject. He clearly has a love for trees. For this book he has chosen the novel tack of employing essentially one photographic subject (albeit in all its countless variations) to demonstrate the skills he has learnt in his many years of photography. Fundamentally, then, this is a self-help book for budding photographers (sorry, couldn't help myself!). Given the plethora of photographic guide books currently available, this one should be commended for attempting something different. But does the unusual approach benefit the reader?

This, largely, will depend on your expectations. The book includes many essentially universal lessons regarding photography; these transcend the subject and are widely applicable. If your camera rarely strays from the 'Auto' setting, and you are not versed in the consequences of changing aperture, or the 'rule of thirds' in composition, then this book will definitely improve your photography. At a more advanced level the restrictive subject matter does limit the potential range of lessons somewhat. Skills applicable to photographing trees are certainly transferable to photographing other essentially static objects, landscapes, etc.,

but you will not learn much that's useful in, for example, sports photography. But if that's your ambition, you're unlikely to consult this book in the first place.

So, as a general photographic guide book, there are some self-imposed limits. As a more specialized guide this is an excellent introduction to photographing trees and other immobile objects. The author clearly describes the best conditions for photography (essentially anything but sunny), the best time of day (get up early or stay up late), and other choices (lens, aperture, composition) made in producing his stunning images. 'Compromise' is a word regularly used, as often the conditions and subject will restrict the available options, so choosing the best alternative on the day is one of the most important skills to learn. Equally, good planning, knowing something of the tree's biology, and knowing in advance what sort of image you want to take will greatly increase your chances of success. For readers at a higher skill level much of this advice will be familiar fare, but the lack of novel advice is compensated for by the inspirational images, of which the majority are spectacular. The author is certainly a skilled photographer. I particularly liked the shots of trees in snow covered Cumbrian fields, one of which graces the cover.



Why, then, did I come away from this book ever so slightly dissatisfied? I certainly liked the images, the production values are seemingly high for a relatively inexpensive volume, and the lessons are mostly sound (but see below). The book is unusual, however, in that the text is written in first person and explains the actions and decisions taken by the author leading to the moment the image was taken. As described, he rarely puts a foot wrong and on occasions this tends to self-congratulation, which can become a little tiresome. There are times it reads more as a promotion for Edward Parker, rather than the guide book it should be. The book is also not without its errors. The foreword describes "holding open the aperture", when presumably 'shutter' is intended. This error should have been picked up in proofing, as should a few others that I found jarring. The text occasionally gives the position of images incorrectly (e.g., p. 26 "photo below" for an image to the right; p. 100 "above right", referring to an image that is above left) and includes a glaring (to an Aussie) spelling error (Ayres Rock, anyone?). It's also surprising that there was a need to repeat an image. The same shot of a *Gingko* leaf appears on both pages 32 and 61. Surely amongst the author's presumably massive collection there must have been another that illustrated the same point.

Of greater significance, however, is the section on page 84 where the pros and cons of jpegs are considered, with the analogy that jpegs are like a folded map, which "eventually begins to degrade, because the act of opening and closing it causes a little damage every time". The suggestion being that opening and closing jpegs will lead to a loss of quality. This is untrue. When an image is saved as a jpeg it is compressed to reduce file size and some information is permanently deleted (known as "lossy" compression). The degree of compression is selected in the process and is a trade-off between file size and image quality, with the highest quality image resulting in the largest file. Subsequently opening and closing jpegs, however, does not further compress the file. This only happens if the file is saved over the original. Even saving within a single editing session does not accumulate a loss of quality, the compression only happening when the image is closed. The advice here is: if you must edit an image, do it in the minimum number

of sessions, and save interim versions in a lossless format such as tiff. Once you are happy with the image, and you then have a need to produce a smaller file size, save the final version as a jpeg. If you need to duplicate the image, do so in a file manager rather than using 'save as jpeg' in an editing program.

The readers of this review will, I assume, be predominantly botanists. If those I'm familiar with are representative, it's probably safe to generalise that photography has become an essential component of the botanist's skills. And it's not always about conveying scientific information. Our discipline has gone beyond staid taxonomic publications to include the more accessible web delivery and general interest articles. In these situations a spectacular photo will often do more to spread the word, a philosophy Parker has clearly incorporated into his own work, to great effect. In this book he has shown us examples of his excellent tree photography and described how he achieved those images. Despite a couple of reservations, if you are seeking to improve your photography then this book is highly recommended.

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Plant Collectors and Gardeners at the Cape

***The Smallest Kingdom: Plants and Plant Collectors at the Cape of Good Hope*. By Mike & Liz Fraser. Kew Publishing, Kew, UK. 2011. 300 pp. ISBN 978 1 84246 389 5. RRP GB £28. (hardback) http://www.kewbooks.com/asps/ShowDetails.asp?id=804**

This is a book of two parts. On the one hand it is a vehicle to showcase the plant and animal paintings of Liz Fraser, on the other, it is an account by Mike Fraser of the history of plant collecting in the Cape of Good Hope Floral Kingdom, and the history of introduction of Cape plants to the gardens of Europe, particularly the UK. It does both well and manages to knit the two together in a seamless way.

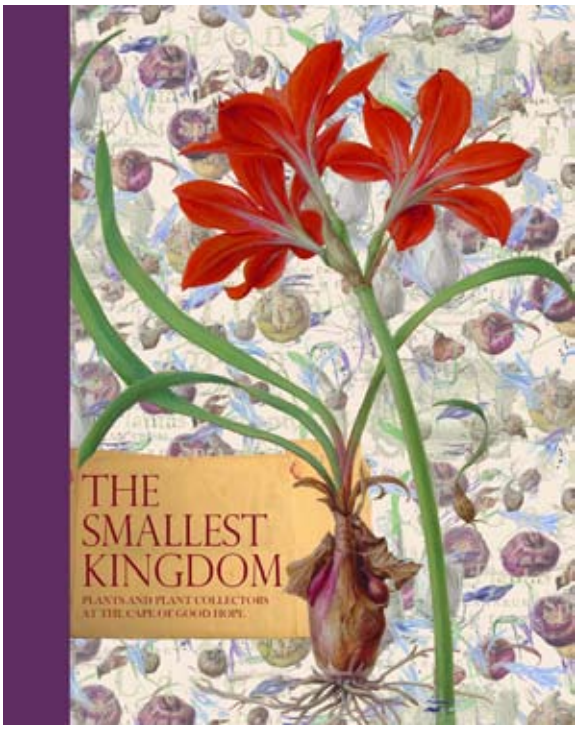
The Frasers are a husband and wife team who travelled to the Cape from the UK in about 1984, primarily so that Mike could undertake a postgraduate research fellowship in ornithology at the University of Cape Town. Their original intention was to stay a year, which eventually became 12 years. This is not their first book on the flora and fauna of the region. They were awarded the Marloth Medal of the Botanical Society of South Africa for flora conservation through their previous books *A Fynbos Year* and *Between Two Shores*. The current book was compiled on their return to the UK, where Mike is a conservation officer with the Royal Society for the Protection of Birds, and Liz is a botanical and wildlife painter and secondary school teacher in the Scottish Borders region.

The larger part of the book is the text. It is arranged in a traditional chronological order, tracing the history of European discovery of the Cape of Good Hope, starting with the voyage of the Portuguese explorer Bartholmeu Diaz in 1487, which reached the southernmost point of Africa. He was followed by Vasco da Gama (1497) and various other expeditions over the following years, although most saw the Cape as an obstacle to be surmounted on their voyages to the more profitable East Indies, rather than a place to linger. A reputation for dangerous storms, little in the way of edible plants or animals (apart from the sheep and cattle raised by the local Khoekhoen), and no spices meant that the Cape was little more than a short-term watering spot. The first plant collections were made by the Dutch, not the Portuguese. An unknown collector in 1597 collected a "thistle" which was sent to Clusius, Professor of Botany at the University of Leiden. It was described in Clusius' *Exoticorum Libri Decem* of 1607 as a species of *Carduus*. It was undoubtedly *Protea neriifolia*.

In the early 17th century, the traffic of Dutch ships around the Cape to the East Indies rose from a trickle to a flood. In 1602, the Dutch East India Company (VOC), with headquarters at Batavia (now Jakarta), was founded to control the spice trade from the East Indies. Clusius encouraged VOC merchants to bring new plants to Europe, which they did, feeding an increasing horticultural

interest in rare and exotic flora. Most of these new introductions were at first from the East Indies, but gradually Cape plants, particularly bulbs, began to appear in gardens in Holland. European compendia of exotic plants increasingly featured southern African plants, including Pena and de l'Obel's *Stirpium Adversaria Nova* (1605), Sweert's *Florilegium* (1612), Parkinson's *Paradisi in Sole Paradisus Terrestris* (1629), Ferrari's *De Florum Cultura* (1632) and Gerard's *Herball* (1633).

It was not until the mid 17th century that the VOC saw any benefit in establishing a permanent settlement at the Cape. In 1652 Jan van Riebeeck and about 90 men established a fort on the site of Cape Town, and within weeks a vegetable garden was established. This garden was to become the first Cape botanic garden, now the Municipal Botanic Garden, and Cape Colony became a permanent base for exploration (including botanical exploration) of the country inland. The Colony Botanic Garden was later superseded by Kirstenbosch, which boasts a magnificent display of the Cape flora.



The book goes on to describe in some detail landmarks in the development of botanical knowledge of the Cape: the establishment of Kew as a leading botanical garden in England from the early 18th century; collecting by Banks and Solander on Cook's return voyage in 1771; the despatch of the Swedish botanists Sparrman and Thunberg to the Cape in 1772; and the arrival of Masson in the same year. Masson was sent to the Cape by Banks to obtain rare and exotic plants to embellish the Royal Gardens at Kew. Masson made two long visits to the Cape, and sent copious living and dried material back to Kew, most notably a plant of *Encephalartos altensteinii* which still survives 240 years after it was collected.

There is an interesting Australian connection at about this time. William Paterson, later to be Lieutenant Governor of Australia and commander of the party which settled Launceston, was sent to the Cape as a plant collector by Lady Strathmore. Between 1777 and 1780, he undertook four collecting expeditions. Paterson returned to the Cape in 1781 on board an English fleet which made an abortive attempt to take the colony at the beginning of the Fourth Anglo-Dutch War, a spinoff of the American Revolution. Thereafter the Dutch suspected his botanical tours to have been a cover for spying and this had repercussions for later visitors. The British occupied the Cape from 1795 to 1803 following the French Revolution, when the Netherlands became part of the French First Republic, and then took control again from 1806 during the Napoleonic Wars. The Cape became a British colony 1814–1910. When peace with France was declared in 1814, Banks again despatched collectors around the world to rebuild Kew Gardens, which was in danger of being eclipsed by Schoenbrunn. In the case of the Cape, he sent James Bowie. On his way to Africa, Bowie spent 2 years in Brazil with Allan Cunningham, well-known to Australian botanists, but that is another story.

The book deals with many other collectors, far more than can be discussed here. The information underpinning this historical account of exploration is built on the more formal account of African

plant collecting by Gunn & Codd (1981). Those wanting standard bibliographic-type background information will probably go to that work, or to other standard accounts of African collectors, such as Hutchinson (1946) or Dorr (1997). However, the account in *The Smallest Kingdom* is designed to be more than just a reference. It is a well-written, discursive account which relates collectors to other collectors and world events. In other words, it will appeal to those who want to know the story of collecting, not just the bare facts.

The second half of the text is, I think, even more interesting. Here we have a blow-by-blow account of the introduction of southern African plants into cultivation, as trophies, curiosities and ornaments. The lives and interactions of the great (mainly London) nurserymen and horticultural writers, Miller, Curtis, Lee & Kennedy, Loudon, Sweet, Paxton, and even the Empress Josephine, are described in some detail. The discovery of Cape bulbs is well-covered in the exploration chapters. Now there is a full chapter devoted to the story of their introduction to horticulture, and the rapid breeding programs that followed, for the now familiar garden plants, *Gladiolus, Ornithogalum, Freesia, Agapanthus, Nerine, Ixia, Sparaxis, Zantedeschia, Eucomis, Watsonia, Lachenalia* and *Amaryllis*. Another chapter provides similar insights into the Heaths (*Erica* spp.), another the Proteaceae (*Protea, Leucodendron, Leucospermum*), another the genus *Pelargonium*, and another, miscellaneous taxa, including *Nemesia, Osteospermum, Arctotis, Dorotheanthus, Lobelia* and *Disa*.

The book is heavily illustrated throughout in full colour. The early historical chapters have reproductions of contemporary illustrations. Later chapters contain many of Liz Fraser's paintings, which are mostly done in acrylics. They range from full page plates to whimsical "fillers", and from formal, finished plates to extracts from sketch books. They are well tied to the text, and complementary to it. Not all are plants – some of the best depict insects, frogs and birds. There are a few illustrations by other artists, such as Marianne North and Redoute, or from magazines such as *The Garden*, *Curtis's Botanical Magazine* and *The Botanical Register*. Those looking for (scientific) botanical art might be a little disappointed. Most of the paintings are more in the nature of floral art, tending more to impressionism than botanical diagnosis. This should not be taken as a criticism – they are very professional, attractive, and some, particularly of corms and bulbs, are exquisite. A selection of the plates has been acquired by the Shirley Sherwood Collection, London.

The book finishes with a solid "References and Further Reading" section, and an adequate but not overly detailed index.

In summary, this is a book I enjoyed. It is an excellent introduction to the famous flora of the Cape Province, which is of interest to Australian botanists and plant lovers, not least because of the parallels with our own "Small Plant Kingdom" in the south west of Western Australia. One of the aspects that I found both valuable and fascinating was the description of the history of introduction, and subsequent breeding, of many familiar garden staples. This is the best account I am aware of on this subject. I read the book from cover to cover over about 3 days, and that is one way to tackle it. Its writing is free-flowing, imaginative and, so far as I could tell, almost error free (the only minor slip noted: on p. 87 England is claimed to have declared war on the Netherlands and France in 1870, and that Paterson visited the Cape that year. This should read 1781. Paterson died in 1810.). The other way to tackle it is to just dip into chapters at random, or for particular subjects. Each chapter is largely self-contained and self-explanatory. The book was a finalist for Inspirational Book of the Year at the Garden Media Guild Awards, 2011.

The price of the book is a very modest £28, subsidised by the sale of some plates to the Shirley Sherwood Collection. It must be one of the bargains of the year.

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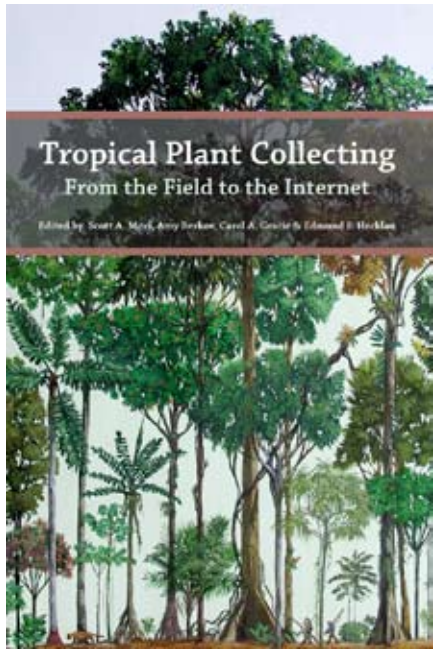
Botany and ecology in the American tropics

***Tropical Plant Collecting, from the Field to the Internet*. Edited by Scott A. Mori, Amy Berkov, Carol A. Gracie & Edmund F. Hecklau. TECC Editora Florianopolis, Brasil 2011. 332 pp. ISBN: 978-85-65005-00-5. RPR US$34.95 http://www.tecceditora.com/available-soon-tropical-plant-collecting-from-the-field-to-the-internet/**

It may be of help to explain my background and why I chose to review this book. I am not a taxonomist but an ecologist with a very strong interest in botany. While based in Broome and Darwin, I worked extensively in Australia's tropics and conducted field work in PNG, Indonesia and Timor-Leste surveying for weeds for the North Australian Quarantine Strategy. We left Darwin 3 years ago and I now work for myself on matters botanical in Perth. I had always wondered how botanists sampled heavy duty rainforest.



Although mostly written by Scott Mori, *Tropical Plant Collecting* includes a chapter by Amy Berkov in which she describes the isolation and travails she experienced living and working by herself for a year as a PhD student in a hot humid environment. It is entertaining but serious.

The book is well laid out by subject matter and has an impressive 5 page index at the front which makes it easy to dip into. Aimed at providing information to students and others working in the tropics, the book provides advice on the how and whys of botany and how to operate when working on projects in another country.

The first chapter is an autobiographical account of Scott Mori's career as a botanist with the New York Botanic Garden (NYBG) and his work on the Lecythidaceae. It is not often that a person lays out their career but this is what Mori sets out to do in order to show young botanists how they could emulate it. He is apt to lecture on some subjects and in the first chapter he spends a lot of space describing what monographs and floras are, which for me was over the top and annoying. He also uses the word 'neotropics' without explanation. According to Wikipedia, the neotropics is one of the world's eight ecozones encompassing the tropical terrestrial zone of both Americas and the entire South American temperate zone. I would have liked him to explain it once. Perhaps I missed it. He describes the benefits of collaborative works but describes also the downside when key people pulled out leaving projects that he was involved in unable to be completed. As a botanist working for the NYBG but conducting all of his field work in Central and South America he would have been particularly vulnerable to this.

The third chapter deals with camping and hiking in rainforests and the dangers presented by mammals, insects, parasites, machetes and people. I found comparing these to what we have in northern Australia and the countries to our north fascinating. There are many parallels but on the whole Mori and Berkov seem to have more to contend with than we had. His section on snakes and snake bite surprised me. He recommends things that are directly opposite to our current ideas on how to treat snake bite. A medical friend, who specializes in emergency medicine, tells me that Australia's snakes belong to a different group to the American snakes whose venom works in a different way. So a word of warning, do not put into practice the recommendations on snake bite in this book when working in Australia.

In Chapter 4 Mori lays out the ins and outs of what to collect, vouchers, collecting numbers,

field drying and how to collect from very tall trees which, to me, was fascinating. I would have liked to have had this information available to me 30 years ago in one book. He provides detailed descriptions of how to make this sort of equipment and where you might purchase it (in the USA). He does not like collecting into alcohol but he has not had to deal with the quarantine regulations that we have in Australia. Significantly, he provides good advice on how a botanist should interact with botanists and institutions in other countries they might visit.

Chapter 5 deals with herbarium matters such as what you should and shouldn't put on a label, what specimens should be incorporated into a Herbarium and which should not, and how to link images to specimens. This is all good advice, some of which I had not thought of and some of which I practice. He discusses the costs of incorporating specimens and maintaining them in a collection, most of which I have not been exposed to.

Chapter 6 discusses the internet and what Mori sees as the future of botanical publications: efloras and emonographs. I found this particularly enlightening.

Chapter 7 was, for me, the most interesting part of the book. Here the conservation of rainforests is discussed. The extensive references will provide me with a lot of reading matter on the subject. I have floated around with various opinions on biofuels, climate change, etc., in my head but did know how to sort them out. The references cited should help me navigate my way through what had previously appeared to be an impenetrable morass.

The appendices are all relevant. Especially interesting to me was how he laid out the fund-raising options.

There were a couple of things that I didn't like, particularly the layout. The print is small and there is so little spare space that the words feel crammed in and this nearly made me give it up after the first few pages. The other item is that when he uses the Latin name of a species he adds the author every time. This isn't done a few times through the book; it's everywhere. Some pages appear to be 30% authors names. In a book that's meant to be interesting, it gets wearing.

This is an unusual book in that is discusses all aspects of tropical botany from a practical level. I do not know another like it and would have dearly liked the benefit of Scott Mori's wisdom 30 years ago.

Andrew Mitchell
Perth, Western Australia

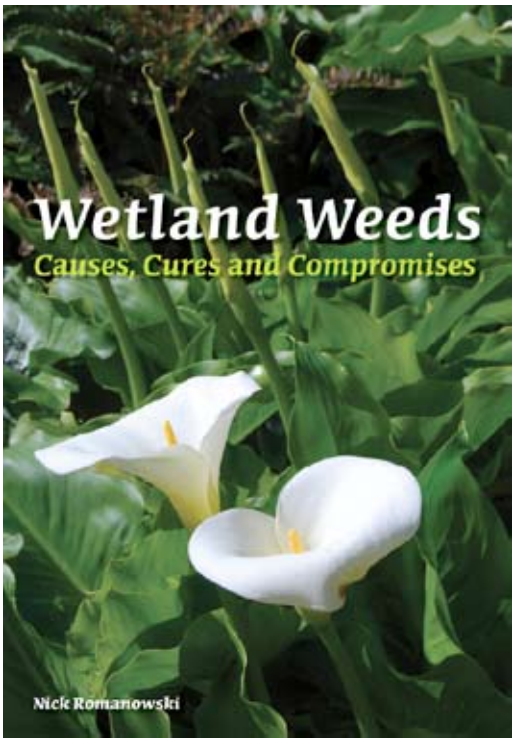
Wetland Weeds: Causes, Cures and Compromises. **By Nick Ramanowski. CSIRO Publishing, Melbourne 2011. 184pp. ISBN: 9780643103955. AU $49.95 (paperback) http://www.publish.csiro.au/pid/6579.htm. An eBook version is available from eBooks.com**

When I saw the words "containment actions to prevent the development of a soil seed bank" listed as one of the strategies proposed for controlling wetland weeds in *Wetland Weeds: Causes, Cures and Compromises*, I knew I had to read this book. For so many land managers "containment" is the fall-back option when a weed can't be eradicated. It is often seen as an easy and sometimes less expensive option. However, it is far from this, particularly in aquatic situations, as Grice *et al*. (2010, 2012) have shown in attempting to more clearly define this weed control option.

Who does not have a story of someone who has seen the error of his or her ways and turned their life around. For me, it is one of my boyhood heroes, Sir Peter Scott, son of the famous polar explorer, Captain Robert Falcon Scott. Peter was a pioneer of waterbird conservation, founder of the Wildfowl and Wetlands Trust based in Gloustershire in the UK and co-founder of the World Wide Fund for Nature. Together with David Attenborough, he is presented as being largely responsible for the way much of the world views nature. However in his early years, like many from the privileged class in the UK, he was a hunter. In his autobiography, *The Eye of the Wind* (Scott 1961), he tells the story of how watching a wounded goose struggling for life on an inaccessible mud flat in the Severn Estuary turned his life around. That day he hung up his guns and never hunted again.

Though hardly in the same league, *Wetland Weeds:*

Causes, Cures and Compromises the third book on wetlands and wetland plants by Nick Ramanowski published by CSIRO Publishing, might be part of Nick's redemption. In the introduction to this book he explains how in the 1980s, while experimenting with the commercial production of indigenous plants for use in constructed wetlands, his catalogue included a range of exotics. Over time the catalogue started to include warnings of the weed potential of some of these and eventually he withdrew many species from sale because of the risk they posed. He claims this hands-on experience with most of the introduced weeds and potential weeds discussed in this book turned out to be useful. He now argues that "it is time to pull the plug on further imports of all potential weeds, terrestrial or aquatic, regardless of their origins supposed properties, or ornamental value". This is a constant message throughout *Wetland Weeds*.



The book is divided into 4 main chapters; 'What is a weed' (11 pp.); 'Prevention, control and management' (18 pp.); 'Native plants as weeds' (21 pp.); and a 'Compendium of weeds' (69 pp.). There is also a block of 32 colour plates each with 3, or sometimes 4, colour photographs of species discussed in the text. A short glossary of technical terms, a bibliography of recent publications dealing with various wetland weeds and a reasonably comprehensive index complete the book.

The book begins with a definition that 'a weed is a plant out of place'. Surely the time has come to abandoned this oft quoted but hackneyed and overly simplified definition. Plants are more usefully deemed weedy on the basis of their harmful effects on the economy, the environment, human health or amenity, cultural sensitivities and the resources needed to remove or reduce these effects to some acceptable level. When defined in this way, it matters not whether a plant is native or introduced, within its native range or not, or even if it is declared or not declared. It also has the added benefit that by concentrating on the impacts it can be a whole lot easier to identify what caused the problem in the first place. Had this approach been adopted here, the author could have saved himself many pages discussing whether plants like *Cotula coronopifolia*, *Persicaria lapathifolia* and *Rorippa palustris* are native or introduced or arguing the merits of Peter Kloot's paper on introduced elements of the flora of southern Australia. These contribute little to informing the readers' understanding of the causes, cures or compromises related to wetland weeds.

By far the largest part of the book is that dealing with the weeds themselves. More than 130 species from about 22 genera of native plants and 75 genera of introduced plants are covered including a few genera, such as *Lantana* and *Rubus*, which, although troublesome in riparian areas, are not usually considered aquatic. The list of plants included is impressive. From a tropical/subtropical perspective, I noted only a handful of introduced plants for example *Mayaca fluviatilis*, *Thalia geniculata*, *Neptunia oleracea* and *N. plena,* that have recently become naturalised which were not included. However, last time I had cause to consult a list of aquatic plants traded for aquarium and pond plant purposes in Australia, the number of plants included was close to 450. Only 12% of these were Australian indigenous plants. Most were exotics which have not escaped from cultivation (yet) but many have the potential

to do so. Drawing on his experience in the use and trade of aquatic plants, the author has devoted several pages to a discussion of the risks this trade poses.

Treatments of various genera vary in the level of detail provided from a dozen lines (e.g. *Holcus*, *Bacopa* and *Heteranthera*) to a page or more for others. Most species are discussed under the headings: origins, uses, preferred growth conditions, confusing species, environmental effects, and control and management. By his own admission the author has deliberately covered minor weeds and some plants which have yet to naturalise in disproportionate detail. This is in line with the pragmatic approach the author takes in recognising that it is too late to consider eradication of many species and that time and effort might be better applied to minor weeds and plants which have yet to naturalise in order to prevent further outbreaks of new weeds.

Ramanowski has not been well served by whoever is responsible for the quality of the colour plates. With few exceptions, these are dark suggesting he might have been let down by the printing process. I can't imagine the editors would have let them pass the editing process without some image processing.

The audience for this book is claimed to include anyone involved with the restoration and management of wetlands and dams, departments of primary industries and environment, biosecurity, catchment management authorities, professionals and non-professionals such as farmers. How will this group be served? As a book to aid identification I think there are better books available, for example *Waterplants in Australia* (Sainty & Jacobs 2003). Those involved in control and management of aquatic weeds will find the book is light on information on the chemical control option; however, this is a highly specialised discipline and probably beyond the scope of a book such as this. I wish I could share the author's hope that in the long term some of water plants will die out (or at least be greatly reduced in vigour) as they accumulate viral and other disease problems, as is claimed for *Cabomba* (p. 86) and *Salvinia* (p. 115). The book's main strength is Ramanowsky's consistent message that although "wetland weeds make up just a small proportion of our feral flora, they are a very real threat to agriculture, industry, such luxuries as a daily shower, and even the quality of the water we drink", but I'm still hoping to find out how wetland plants can be effectively contained.

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John Clarkson
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Issue 2, October 2012

Welcome to our second quarterly newsletter! We hope our friends, colleagues, end-users, and the interested public will enjoy these research and technical snippets. ~ Phil Novis, Editor.

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Hybridisation among New Zealand beech tree species (*Nothofagus*)

New Zealand has four species of southern beech (*Nothofagus*): *N. fusca* (red beech), *N. menziesii* (silver beech, right), *N. solandri* (black and mountain beech) and *N. truncata* (hard beech). Silver beech is the most botanically distinct of

the four. It is classified in a different subgenus within *Nothofagus* to the other three, and has its closest relatives in Australia and South America. The three remaining species form a closely related group and botanists have long recognised that hybrids occur among them in nature, particularly *N. solandri* × *N. fusca* and *N. solandri* × *N. truncata*. Allan Herbarium scientists, along with Landcare Research plant ecologists, have been examining genetic variation among black, hard, and red beech using a newly developed set of DNA markers. In doing so, we have confirmed that the previously documented hybrids occur in the wild, and also found *N. fusca* × *N. truncata*,which is difficult to recognise because these two species have very similar serrated leaves.

Somewhat surprisingly, genetic data do not support the idea that red and hard beech are more closely related to each other than they are to black beech, despite their similar appearance. Within *N. solandri* DNA data suggest that there is some genetic differentiation between black (*N. solandri* var. *solandri*) and mountain (*N. solandri* var. *cliffortioides*) and that difficulties many botanists experience in classifying trees from some areas may be due to hybridisation between the two. Although more data are needed, these results tend to favour the view of some botanists that black and mountain beech should be treated as distinct species.

Rob Smissen, Research Scientist

New key to flowering plant genera released

A major obstacle for experienced and inexperienced botanists alike is how to identify an unfamiliar flowering plant to family or genus. Traditionally two methods were used, neither particularly easy.

The first was to use a key to families in a volume of the New Zealand Flora series, followed by a key to genus within the family. This method usually requires very complete plant material, with flowers or fruit or both. Family keys for flowering plants are the most difficult keys to operate, being long and relying on technical characters like placentation (position of ovules within the ovary).

The second method was to become familiar with the families and genera of flowering plants. This method works well for the native flora, in which we only have 200 genera, but requires dedication to become familiar with the 800 non-native genera and the families they belong to.

A new interactive key is now online that shortcuts this process. It takes you directly to any of the 1085 flowering genera that are wild or casual in New Zealand. The key does not require you to identify the family first, but the structure of the key will remind you of the families.

The key largely uses simple characters like division of leaves, leaves opposite or alternate, leaf length and width, presence of hairs, flower colour, and fruit colour. Flowers or fruit will certainly help, but the key can be used without. Leaf characters alone may take you to a number of genera, which can be discriminated using the images provided. There are 7000 of these, about 7 per genus.

This key has been funded by TFBIS (Terrestrial & Freshwater Biodiversity Information System), administered by the Department of Conservation. Work remains to fill gaps in the image set and to improve the key using feedback from users.

Please try the key, and let us know how you find it. Find the key at www.landcareresearch.co.nz/resources/identification/plants/flowering-plants-key, or easier, Google: flowering genus key.

Contact David Glenny at glennyd@landcareresearch.co.nz with comments and corrections.

David Glenny, Research Scientist.

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ASBS Publications

History of Systematic Botany in Australia

Edited by P.S. Short. A4, case bound, 326 pp. ASBS, 1990. $10; plus $10 postage & packing.

For all those people interested in the 1988 ASBS symposium in Melbourne, here are the proceedings. It is a well presented volume, containing 36 papers on: the botanical exploration of our region; the role of horticulturalists, collectors and artists in the early documentation of the flora; the renowned (Mueller, Cunningham), and those whose contribution is sometimes overlooked (Buchanan, Wilhelmi).

Only a few copies left!—available only from the Treasurer.

Systematic Status of Large Flowering Plant Genera

Austral.Syst.Bot.Soc.Newslett. 53, edited by Helen Hewson. 1987. $5 + $1.75 postage.

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*.

Australian Systematic Botany Society Newsletter

Back issues of the *Newsletter* are available from Number 27 (May 1981) onwards, excluding Numbers 29, 31, 60–62, 66, 84, 89, 90, 99, 100 and 103. Here is the chance to complete your set.

Evolution of the Flora and Fauna of Arid Australia

Edited by W.R. Barker & P.J.M. Greenslade. Peacock Publications, ASBS & ANZAAS, 1982. $20 + $8.50 postage.

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.

Also available from Peacock Publications, 38 Sydenham Road, Norwood, SA 5069, Australia. To obtain this discounted price, post a photocopy of this page with remittance.

Ecology of the Southern Conifers (Now out of print)

Edited by Neal Enright and Robert Hill. ASBS members: $60 plus $12 p. & p. non-members $79.95.

Proceedings of a symposium at the ASBS conference in Hobart in 1993. Twenty-eight scholars from across the hemisphere examine the history and ecology of the southern conifers, and emphasise their importance in understanding the evolution and ecological dynamics of southern vegetation.

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AUSTRALASIAN SYSTEMATIC BOTANY SOCIETY INCORPORATED

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. Membership entitles the member to attend general meetings and chapter meetings, and to receive the *Newsletter*. Any person may apply for membership by filling in a "*Membership Application*" form, available on the Society website, and forwarding it, with the appropriate subscription, to the Treasurer. Subscriptions become due on 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 *Australian Systematic Botany Society Inc*., and remitted to the Treasurer. All changes of address should be sent directly to the Treasurer as well.

The Newsletter

The *Newsletter* is sent quarterly to members and appears simultaneously on the ASBS Website. It keeps members informed of Society events and news, and provides a vehicle for debate and discussion. In addition, original articles, notes and letters (not exceeding ten published pages in length) will be considered. *Citation*: abbreviate as *Australas. Syst. Bot. Soc. Newslett.*

Contributions

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

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

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

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

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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 $100 per flyer, plus the cost of inserting them (usually roughly $25–30). Flyers are not part of the *Newsletter* and do not appear with the *Newsletter* on the ASBS 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. Contact the *Newsletter* Editors for further information.

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