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EDITORIAL

Don't forget that the next issue of the ASBS newsletter will be the 100th. I am sure there are many of you out there who can think of appropriate material to make this a memorable event. We should be proud of the achievement and of the newsletter in general. Having had experience of other newsletters

I can say how exasperating the job can be when people do not submit material. That clearly isn't an issue with this newsletter, and I have rarely had to solicit material. Keep up the good work and help celebrate the achievement of a milestone.

PRESIDENT'S REPORT

Surf's Up

Part of the appeal of my new home city is its proximity to good surf. But if your ability to ride waves is as good as mine, it's much safer to wade the web. I think 'wading' is an appropriate term as websites become increasingly tangled and networks grind sluggishly into the next century.

For a breath of fresh sea air (albeit via the crisp autumn mornings of Canberra), take a look at the newly fashioned ASBS site. Andrew Lynne has finished a major overhaul to create a cleaner and faster (to access) site. The front screen presents a convenient entry point to information on the constitution, newsletter, Eichler Research Awards and more. A powerful search engine takes advantage of our (greatly appreciated) links with the Australian National Botanic Gardens website.

Soon to be added will be a database of all ASBS members and their e-mail addresses. Only two members indicated that they did not want their e-mail addresses published on the ASBS website, but as neither actually has an e-mail address we interpret this as either an answer to a different question or a interesting but not particularly pertinent reply.

We are working towards getting our own domain name but for now you can find us at www.anbg.gov.au/asbs.

International Federation of Systematic Societies

After catching the tail end of an e-mail trail on the SASB listserver, I contacted Vicki Funk at the Smithsonian Institution about a proposed new

federation of systematic societies. Vicki was happy to have another society from Australia join the Federation.

The idea for the Federation arose in a discussion at the annual meeting of the Council of the Society of Systematic Biologists in the USA. Other societies approached include the Southern African Society of Systematic Biology, the Systematics Association (UK), the New Zealand Society of Systematic Biology and the Hennig Society. All of these, you will have noticed, are 'co-ed' societies – they include animals, plants and all things in between.

I have no hesitation in putting ASBS forward as a potential member. We are a long-lived, active group of systematists, with a lot to offer the Federation. I think most ASBS members would want to, as Vicki Funk put it, 'encourage more international interaction in the systematic community and to use that interaction to call attention to the importance of systematics as well as to foster joint research projects'. The ASBS council supported me following up this linkage and I will attend a meeting with some of the interested parties during the International Botanical Congress in St Louis.

The Society of Systematic Biologists publishes *Systematic Biology*, with a quarter of subscribers (750) living outside the USA. One society in each country will be able to select an associate editor for *Systematic Biology*. At this stage it is likely that the Society of Australian Systematic Biologists will take on this role for Australia. There may be alternate ways for ASBS to contribute to editorial policy or practice and I welcome feedback on this issue.

Communication will be primarily by e-mail and a website (which could include among other things a joint website membership directory – perhaps we can push for a search engine accessing distributed databases like our own forthcoming membership list!). The Federation will not interfere with the business of member societies and there will be no subscription fee. It will be governed by a board consisting of the President and one additional member-at-large from each society (the latter to be

appointed/elected by the society). The terms of the two representatives would be staggered with the member-at-large serving for possibly 4 years and the President for only 1 or 2 (depending upon the prescribed term of office within the society). The Board will 'meet' via e-mail and at some society meetings.

Tim Entwisle

ASBS INC BUSINESS

Hansjörg Eichler Scientific Research Fund Applications

Applications to the Hansjörg Eichler Scientific Research Fund will close on August 31st 1999.

Applications are welcomed from all current financial members of the Australian Systematic Botany Society. The project must contribute to Australian systematic botany, must be carried out within Australia and the applicant must be attached to an Australian research institute.

The maximum grant awarded will be \$1000. Large capital items will not be considered.

Students, recent graduates and postgraduates will be given preference. Applications will be assessed on the quality of the applicant and the proposed project. The project should be clearly defined in scope and preferably result in a publication.

The Grant Application Form is available from the ASBS Web site <http://155.187.10.12/asbs/eichler/eichler.html> from where it can be saved as an electronic file, or from the Secretary of ASBS. Further information on the Awards will also be posted on the Web page.

ABRS REPORT

Staff

Patrick McCarthy's period as Acting Executive Editor ended on 30 May, and from June until November 1999 Annette Wilson will be Acting Executive Editor (Flora). Annette's direct phone number is (02) 6250 9417, and her email address is annette.wilson@ea.gov.au.

Anna Monro has completed her contract working on the grasses project.

Publications

Flora of Australia Volume 17B - Proteaceae 3, Hakea to Dryandra was published on 26 May 1999. It

consists of xviii + 416 pages and covers the genera *Hakea*, *Musgravea*, *Austromuelleria*, *Banksia* and *Dryandra*. It is available from CSIRO Publishing for \$89.95 (hardcover) or \$69.95 (softcover). The remaining genus in the Proteaceae, *Grevillea*, will be published as a separate volume, *Flora of Australia Volume 17A*.

The Families of Flowering Plants of Australia. An Interactive Identification Guide, edited by Kevin Thiele & Laurie Adams, is now with the printer and its release is imminent.

Two more booklets in the *Species Plantarum: Flora of the World* series are now in the final stages of

production - Welwitschiaceae and Stangeriaceae. The first of the taxonomic treatments in this series, Irvingiaceae, published in hard copy in January 1999, may now be viewed as a PDF file on the World Wide Web, at <http://www.anbg.gov.au/abrs/flora/spplant/irv4pdf1.pdf>.

ABRS will also be publishing a number of works over the next year or so, in collaboration with other organisations. In press, and likely to be available by the time this newsletter is printed, are:

Flora of Australia Supplementary Series No. 8: Vegetation of Tasmania, published jointly with the University of Tasmania, Forestry Tasmania and the CRC for Sustainable Production Forestry; and

Flora of Australia Supplementary Series No. 9: Lichens of Rainforest in Tasmania and South-Eastern Australia, published jointly with Forestry Tasmania, the Tasmanian Museum & Art Gallery, the National Rainforest Conservation Program, AMRAD, and the Chemistry Department of the Australian National University:

Other Activities

Tony Orchard is attending the fourth meeting of the Subsidiary Body for Scientific, Technical, and Technological Advice (SBSTTA) in Montréal, 21–25 June 1999. One of the items for discussion is the Global Taxonomy Initiative, which is being developed to address the worldwide shortage of taxonomists. A month after his return from Montréal, Tony will again be travelling, to attend the Nomenclature sessions and main International Botanical Congress in St Louis, Missouri, from 26 July to 7 August 1999.

The ABRS Advisory Committee will meet on 18–19 August, in Canberra, and again in Perth on 11

December 1999, following the Dampier 300 conference.

The ABRS Editorial Committee will meet on 19–20 October.

Editing in progress

The following volumes are well-advanced in the editing process, and most should go to press during 1999, roughly in the order listed:

Flora of Australia Volume 17A, Proteaceae 2 – *Grevillea*
Flora of Australia Volumes 11A & 11B, *Acacia* 1 & 2
Flora of Australia Volume 43A, Poaceae 1
Flora of Australia Volume 44, Poaceae 3.

Work is underway on an additional group of publications, which should go to press in 2000:

Flora of Australia Volume 43B, Poaceae 2
Flora of Australia Volume 39, Alismatales to Arales
Flora of Australia Volume 51, Mosses 1
Flora of Australia Volume 5, Caryophyllales 2 to Plumbaginales
Nature's Investigator: The Diary of Robert Brown in Australia 1801–1805
Fungi of Australia Volume 2B, Catalogue and Bibliography of Australian Macrofungi 2
Fungi of Australia Volume 15A, Hyphopodiatale Asterinaceae.

Annette Wilson
Acting Executive Editor Flora

ABLO REPORT

Library

The Kew library is currently somewhat understaffed as a result of the departure of archivist Lesley Price in April and the retirement of Head Librarian Sylvia Fitzgerald in May. Consequently the archives section is closed until a new staff member is appointed and trained. The archives are currently expected to be available again in September.

Meetings

On 4th May Kew hosted a meeting considering proposals for the upcoming IBC Nomenclature Session which was well-attended and filled the whole day. A summary indicating Kew's voting preferences (along with some US institutions) can be found at:

<http://mason.gmu.edu/~ckelloff/vfunk/icbnprop.html>.

Apart from informal talks given during visits to Dublin and Edinburgh I participated in an international conference hosted by the Russian Academy of Sciences in St Petersburg during 24-26th May. The conference theme was *Information Retrieval Systems in Biodiversity Research* and gave me an opportunity to present some of the Australian initiatives, with specific examples drawn from the Western Australian experience.

I was impressed with the number of sophisticated IT projects presented, including the interactive identification software BIKEY, the recently published *Legumes of Northern Eurasia* CD and a demo of the Botanical Institute's concept of a 'Virtual Herbarium' which I hope can be discussed at the upcoming Australian HISCOM meeting in Brisbane.

Book Launch

The first two volumes of the *Species Plantarum* were launched at Kew on the 30th March by Sir Ghilleen Prance. Dick Brummitt gave an informative history of the project which included the process of surveying appropriate styles and the eventual selection of the *Flora of Australia* format as the best model. Both men were keen to acknowledge the efforts of the Australian Biological Resource Study and especially Tony Orchard in realising the publications.

Visits and Visitors

I visited Trinity College Dublin from 20-24th March, including a brief stopover at the well-designed new herbarium in the Glasnevin Botanic Gardens. The herbaria at Edinburgh (11-15th April) and Cambridge University (6-8th May, 3rd June) were visited to answer a number of ABLO enquiries.



Front of the Herbarium (LE) – Komarov Botanical Institute, St. Petersburg.

The major trip in this quarter was to St Petersburg from the 17-26th May. I spent most of that time at the Komarov Botanical Institute examining and photographing material from the general and Trinius herbaria. I also ran into Charles Jefferies (ex Kew) who has retired to this lovely city but can be found working on various papers in the library of the Komarov a few days a week. In the latter part of the trip to St Petersburg I participated in the conference mentioned previously, held at the Zoological Institute just over the river Neva from the Hermitage.

Recent visitors to the herbarium and library include Joan Webb (Sydney), Mary Rieger (Adelaide Uni), Jenny Chappill (UWA), Phillip Short (DNA) and Mark Clements (CSIRO).

Jodrell

In between herbarium visits and an increasing flow of visitors I have been spending some time in the molecular lab of the Jodrell extracting DNA from the available range of living and herbarium specimens of *Leucopogon*. A number of herbarium staff can sometimes be seen working in the Jodrell now,

joining the substantial number of PhD and post-docs filling the labs there.

Late News

Those of you who know Keith Ferguson will be very pleased to hear that he was awarded an OBE for services to Kew and Palynology in the Queen's

Birthday Honours list announced on the 12th June 1999.

Alex Chapman

ABLO

June 1999

ARTICLES

Notes on generic concepts in *Rhodomyrtus*, *Archirhodomyrtus*, *Decaspermum*, and *Pilidiostigma* (Myrtaceae)

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Capsular fruited genera of Myrtaceae such as *Eucalyptus* L'Her., *Corymbia* K. Hill & Johnston, and *Melaleuca* L. are most widely recognised by botanists. A number of lesser known, fleshy fruited genera also occur in Australia, particularly in Queensland. Some species are common locally and include representatives in *Syzygium* L. and allied genera (Hyland 1983), *Lithomyrtus* F. Muell., *Austromyrtus* sensu lato (Snow & Guymer in review-a), *Pilidiostigma* Burret, *Decaspermum* Forster & Forster f., *Uromyrtus* Burret, *Rhodamnia* Jack., *Rhodomyrtus* Reichb., and *Archirhodomyrtus* Burret. Many aspects of the specific diversity and generic circumscriptions of these genera are still to be discovered.

Excluding *Syzygium* and its relatives, generic circumscriptions for fleshy fruited genera in Australia mostly have followed the works of Scott (1978a,b; 1979a-c; 1980). Although Scott's contributions advanced our knowledge considerably, current revisionary work has modified some of his generic concepts (Snow & Guymer 1999; in review, a-d). Research in progress for *Flora of Australia* treatments also is revealing new data that will bear on which characters are ultimately used for generic circumscriptions. This note briefly discusses some irregularities in features of the flower and fruit used by Scott as generic

characters for *Rhodomyrtus*, *Archirhodomyrtus*, *Decaspermum*, and *Pilidiostigma*.

Rhodomyrtus, *Archirhodomyrtus*, *Decaspermum* and *Pilidiostigma* (Snow & Guymer in review-d) can all have a capitate to peltate stigma. Since cladistic analyses are lacking it is premature to hypothesize whether stigmatic shape is homologous or homoplastic amongst these genera. Building on earlier works of Niedenzu (1893) and Burret (1941), Scott (1978b) stated that *Archirhodomyrtus* differs from *Rhodomyrtus* by its lack of horizontal and vertical false septa in the fruit, and smaller flowers and leaves. *Decaspermum* (Scott 1979a: 59) was distinguished from *Myrtus* L. by its several-locular ovary, a pair (usually) of ovules per locule, and seeds separated in the fruit by a vertical "false septum" in the middle of each locule. At that time Scott (1979a, b) included *Austromyrtus* s.l. in a broadly defined *Myrtus* (Snow & Guymer in review-a). Scott never defined "false septum", but in *Decaspermum* the term was surely being used to contrast with the locular walls. In *Rhodomyrtus* the term "false" likely has been applied to the horizontal septa because of uncertainties regarding their histological origin, and by extension their homologous status (if any) with related genera. Neither Burret (1941) nor Scott (1978b) mentioned false septa in *Pilidiostigma*.

Characters of the fruit used by Scott (1978b) to separate *Rhodomyrtus* and *Archirhodomyrtus* are inconsistent. For example, seeds of *Rhodomyrtus tomentosa* (Ait.) Hassk. are embedded in a gelatinous to pulpy matrix that lacks any obvious membranous false septa (voucher + spirits: Snow 7728 [vouchers mentioned herein at BRI]). Guymer (1991) likewise made no indication of false septa between seeds in mature fruit for species in the *Rhodomyrtus trineura* (F. Muell.) F. Muell. ex Benth. complex. Snow & Guymer (in review-c) also report that *Rhodomyrtus* may consist of two monophyletic lineages.

In contrast and contra Scott (1979c), mature fruits of *Archirhodomyrtus* do have membranous false septa extending at least partially between adjacent seeds. *Archirhodomyrtus* sp. (voucher Ziarnick 114), an unidentified specimen from New Caledonia, has septa extending slightly inward from the ovary wall between each seed. However, the septa do not extend completely between the seeds from the ovary wall to the axile placenta. The Australian species *A. beckleri* (F. Muell.) A. J. Scott, of which several specimens have been examined, also has septa extending only partially between adjacent seeds. The New Caledonian species *Archirhodomyrtus baladensis* (Brogn. & Gris) Burret (voucher Guillaumin & Baumin 12215) and *A. paitensis* (Schtr.) Burret (voucher Hürlimann 901) both have septa that often extend halfway or more between adjacent seeds. The outer edge of the locular walls in mature fruits are somewhat constricted in all observed species of *Archirhodomyrtus*, but since this feature also can occur in *Pilidiostigma glabrum* its diagnostic value at the generic level remains unknown.

As mentioned above, Scott (1979b: 59) recognised *Decaspermum* based on the presence of a "vertical false septum" in the fruit "in the middle of each locule", and the presence of usually paired ovules. *Decaspermum humile* (G. Don) A. J. Scott, a widespread species in NSW and QLD, has 2-4 ovules per placenta (vouchers: Bean 2674, Bean 5921, Bean 6821; Smith 4142). An undescribed species south of Rockhampton (Snow & Guymer in review-b) has 2-3 ovules per placenta (vouchers: Hoy s.n.; Hoy 3; Forster PIF20268 et al.). Since each locule was reported (Scott 1979a) to have a pair of vertically oriented ovules (longest axis vertical), one might deduce that the "false vertical septum" arises between the seeds. However, this is not the case for Australian species. Instead, seeds within each locule of mature fruits become collectively encapsulated by a moderately thick membranous layer, the entirety of which (capsule plus seeds) can be easily teased apart from fresh or rehydrated

fruits (vouchers: Gray 2629; Bean 5073; Hoy s.n.). When the "capsule" is removed the remaining hypanthium wall is thin, suggesting that the membranous layer is derived from and thus homologous to one or more tissue layers of the ovary wall. The encapsulated seeds are often tightly adnate to one another, but never completely fused as in *Lithomyrtus* (Snow & Guymer 1999). Since *Decaspermum* consists of some thirty species (Scott 1979a, 1980; Snow & Guymer in review-b) these observations need to be assessed in the context of the entire genus.

Pilidiostigma also has been characterised as having peltate stigmas (Scott 1979c: 432), but *P. tetramerum* C. T. White, *P. recurvum* (C. T. White) A. J. Scott and an undescribed species from Mt. Lewis have can have stigmas that are merely terete to slightly capitate. The membranous-chartaceous testa that helps diagnose *Pilidiostigma* from other Australian genera can also occur in *Syzygium* and which differs with its hypanthium tube that extends beyond the ovary apex in flower. *Eugenia reinwardtiana* (Blume) DC. has a thick, leathery testa (Snow 7727) but differs from these genera with its dibrachiate hairs on the foliage. In contrasting *Rhodomyrtus* from *Archirhodomyrtus* Burret (1941) indicated that *Rhodomyrtus* had false septa occurring diagonally between the ovules. However, the mature fruits of *Pilidiostigma glabrum* (Guymer 2092, spirits; Hays s.n. [BRI AQ44679]) and flowers of *Pilidiostigma rhytisperma* (Sharpe 2400 & Elsol) also have diagonal false septa.

The following key should be more accurate than Scott (1979c) for representatives of these genera in Australia, but its applicability may not be global.

1. Testa membranous to chartaceous; embryos thick, globose to somewhat linear, not or barely differentiated into cotyledons and hypocotyl *Pilidiostigma*
1. Testa bony; embryos thin, mostly C-shaped, differentiated into cotyledons and hypocotyl.....2
2. Seeds in each locule borne vertically and held tightly together in membranous capsule *Decaspermum*
2. Seeds in each locule borne horizontally and not collectively encapsulated3
3. Branchlets remaining hairy.....*Rhodomyrtus*
3. Branchlets soon becoming glabrous *Archirhodomyrtus*

Previous studies of floral ontogeny have helped clarify taxon boundaries in Myrtaceae (e.g.

Drinnan and Ladiges 1989, 1991; Orlovich et al. 1996). Further research on the ontogeny and homologous status of tissue layers in the fruits of *Rhodomyrtus*, *Archirodomyrtus*, *Decaspermum* and *Pilidiostigma* should likewise help clarify their generic boundaries and phylogenetic relationships. Such research would be a worthwhile project for an honours thesis or master's degree.

Acknowledgements

Research support comes from Australian Biological Resources Study. I thank Dr. Gordon Guymer for discussions on generic concepts (particularly *Rhodomyrtus*) and Philip Sharpe for translating the relevant portions of Burret from German and assistance in the field.

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- , ----- (In review-b). A new species of *Decaspermum* (Myrtaceae) from east-central Queensland. *Austrobaileya*.
- , ----- (In review-c). *Rhodomyrtus*. In: *Flora of Australia*.
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CHAH Technicians Workshop

Rachael Wakefield
Royal Botanic Gardens, Sydney

From 19 – 25 of April Cryptogamic Technicians from mainly Victoria, NSW, the ACT and New Zealand were treated to a feast of lectures and herbarium instruction from leading Cryptogamic Botanists of Australia. The venue was the Australian National Botanic Gardens and the workshop was run by the Australian National Herbarium. It was a very busy and mentally straining week but incredibly rewarding.

The general plan of how the week ran was as follows. The morning would consist of lectures on a particular topic, the all important morning tea and then another lecture until lunch time. After a sumptuous lunch and a stroll around the gardens or a visit to the bookshop we would generally meet in the Cryptogamic Herbarium that is located within the Gardens. In the Herbarium we would be instructed on collection, identification and archiving of specimens for the various cryptogamic groups. We spent many a happy hours trying to identify all manner of cryptogams from bryophytes to freshwater algae. These were very useful sessions that developed our knowledge of the keys available and the general identification characteristics of each group. The specific groups we looked at were: Hepatics, Lichens, Mosses, Freshwater Fungi, Freshwater Algae and Macrofungi.

We had Elizabeth Brown from Sydney Herbarium lecture and work with us in the Herbarium on Hepatics (their collection, ecology, identification and curation techniques). Helen Hewson from ANBG discussed the state of Cryptogamic Botany. Heiner Streiman from CPBR lectured and worked with us on Mosses, field collection, ecology, identification and curation techniques. David Eldridge (from DLWC) discussed Cryptogams in relation to soil crust ecology. Jack Elix introduced us to Lichens, their taxonomy, biogeography, identification and curation. Ken Thomas spoke about freshwater ecology, freshwater fungi and showed us the difficulty of researching in this area.

Tim Entwisle (Sydney Herbarium) spoke on freshwater algae, their ecology, collection, identification and curation techniques. Heino Lepp discussed methods of photographing cryptogams. Tom May and Cheryl Grgurinovic discussed Macrofungi resources, identification, collection and curation techniques.

There were a number of guest lecturers who spoke of their research projects, which were all interesting and informative.

The week was finished off with two field trips, which were for some a collecting fest, with people going helter skelter, whilst for others it was a time of learning even more about cryptogams. Saturday was at Tidbinbilla, which excited our New Zealand guests as they were able to spot kangaroos, emus and a koala, but we were there for the lichens and fungi. The Sunday was to Captains Flat, which didn't impress the New Zealanders so much as they were introduced to our smaller fauna of the blood sucking kind, but the mosses were more spectacular.

Of almost as much importance to the Technicians as the information on Cryptogams was the liaison between institutions that occurred. We were all able to swap ideas on how different institutions functioned. This was most rewarding. There was even some ideas swapped on how to control botanists, which was invaluable.

A special mention must be made of Graham Bell who was with us for most of the week including the field trips, he was most informative and willing to help where ever needed. Also to Judith Curnow who was there the whole week and organised much of the Workshop.

For me it was a great week of learning and socialising with other like-minded people. It was a pity that other technicians from institutions further afield could not come, but I recommend that they all try to attend the next workshop when ever and where ever it may be. It was well worth the trip.

George Bentham finally decides to become a botanist.

Aged 33, newly married and having already published a major botanical work on the Labiatae Bentham decides on his future.

"As a barrister I was certain to fail, owing to my constitutional inability to speak well and, although I flattered myself that I had great powers when I had time to mature my thoughts, yet I entirely failed in the readiness to come to a right conclusion, which is so essential for judicial purposes. In botany, on the other hand, I had already made for myself a name, at least on the Continent, and was being well received by naturalists in my own country. It is true that there was yet no prospect of deriving any pecuniary profit; all was direct expenditure, but I already saw that there was very little chance of our having any family to support, my income, though not large, was sufficient to maintain us in comfort in that moderate sphere in which my wife showed herself as contented, as

I was myself, and taking all these circumstances into consideration, I had already, before we went abroad, almost determined to give up law for botany; and now, on our return, further communications with foreign correspondents, the number of botanical works and specimens which I found waiting for me on my reaching home, finally decided the question, and I immediately gave up my chambers, refused a couple of briefs which were offered me, sold my technical law books, gave away my wig and gown, and determined on adopting botany as the great business of my future life, a determination which I never, during the long period of my subsequent career, had on any occasion any reason to repent of."

From George Bentham Autobiography 1800-1834.
Edit. M. Filipiuk, University of Toronto Press,
1997.

per David E. Symon

REVIEWS

Walker in the Wilderness The Life of R.J. Anketell

Judith Anketell

Hesperian Press, P.O. Box 317, Victoria Park, W.A. 6100 (1998). xvi + 179 pp.
ISBN 0 85905 257 5. Price \$A35.00

For those who have puzzled over the name Anketell on plant collections from the early 1900s whether as a collector or locality, here are the answers. Richard John Anketell (1862-1928) was an engineer and surveyor who worked in Victoria, Tasmania and Western Australia, involved especially in road and railway construction. This book, by his granddaughter, describes his life and times including his expeditions and surveying projects. It is well illustrated with photographs, maps and extracts from letters, journals etc. Unfortunately Judith

Anketell learnt of the plants collected by her grandfather after the book was completed and they are mentioned only in the preface. There is a list in an appendix to a report on the 'flying survey' that established the route for the Transcontinental Railway.

Alex George
'Four Gables', 18 Barclay Road, Kardinya, W.A.
6163

**Regardfully Yours: Life & letters of Ferdinand von Mueller.
Selected Correspondence of Ferdinand von Mueller.
Vol. 1 1840-1959.**

Edited by R.W. Home, A.M. Lucas, Sara Maroske, D.M. Sinkora and J.H. Voigt.
Publ. Peter Lang, Bern, 1998, 842 pp. (No price given.)

The contents are as follows: First a lovely water colour by T. Baines from the North Australian Exploring Expedition 1855-6, "attached to Mueller's letter to William Hooker 1857". The days of original landscapes with your letter seem to have passed.

Then a brief chronology of Mueller's life (11/2 pages) followed by an introduction of 40 pages, detailing Mueller's life, his early years in Germany, his brief stay in South Australia and his time in Victoria until 1859. The editors calculate on the basis of records that Mueller wrote perhaps 150,000 letters and his total correspondence may have been 300,000 letters. The volume includes an account of the dispersal loss or destruction of most of the correspondence after his long reign at the Melbourne Botanic Gardens, surely one of the blackest pages on the history of science in Australia. "The fires, it is said, burned for days". This has left an enormous gap in the Mueller records. Several people seem to have been involved in this desecration, not only the executors but potential biographers as well. Further Mueller's important correspondence to Sonder was lost after the Second World War.

After that devastating account are a couple of pages on Mueller's epistolary style, substantial acknowledgements and a couple of pages on Editorial conventions which are essential reading.

Then follow 181 letters to and from Mueller up to 1859. Those in German are followed by a translation into English. These letters have been culled from survivors out of the hands of Victorian iconoclasts with Kew an important contributor.

It is a selected contribution, 14 out of 52 items relevant to his period in Germany were selected, 12 out of 31 items from his period in South Australia, 30 out of 115 items for the period to 1855, 13 out of 27 for the period to 1857, and 112 out of 648 items to 1859. We must trust the Editors for what has not been included. There is then a biographical register (51 pages) of people mentioned or involved in the correspondence. After that an updated bibliography of known publications by Mueller in all forms. This occupies 112 pages and a rough calculation gives

about 1,600 items!! An invaluable list for anyone chasing the complicated publications history of Mueller's papers.

Then an appendix (78 pages) of Mueller plant names, a rough calculation giving a mere 4,900 species. The book ends with a small clutch of letters about Mueller, a bibliography to the volume, an index of plant names in the correspondence and finally a general index.

Australian botanists will be forever grateful for the dedicated work of the editors and their many contributors to produce this first volume. It reveals a man hugely enthusiastic about his science, "... a german, drunk with the love of his science and careless of ease and regardless of difficulty in whatever form it might present itself ..." Latrobe, 1853. It goes some way to redress the anglophilic, xenophobic culture in Australia during which the major Germanic contributions to Australian science have suffered so badly - Mueller caricatured, Leichhardt denigrated and incompetent, fatal Burke raised to iconic status. Such is our appreciation of Mueller that this volume is printed in Germany for Die Deutsche Bibliothek by Peter Lang.

I would have liked a little more information on Mueller's domestic and office staff. He never married and presumably had housekeeper(s). What office staff helped with his tremendous correspondence? To what extent did Mueller handle the collections, the numerous duplicates sent overseas? What sort of a manager of men was he? Perhaps the later volumes may tell us more. Despite the disasters it is a cheering book, revealing a man anxious to display his science to the world, one in touch with colleagues world wide, and whose whole ethos was the good of the community (despite scattering blackberries).

All so different from the mean minded present time when every thought must be considered intellectual property, covered by patents if possible, and ministerial approval sought for the simplest publication.

David E. Symon

Flora of Australia. Volume 48: Ferns, Gymnosperms and Allied Groups.

Melbourne: ABRS/CSIRO Australia (1998); XXII + 766 pp, 213 figs, 609 maps.
Hardcover ISBN 0 643 05971 7: \$94.95, Softcover ISBN 0 643 05972 5: \$59.95
Available from CSIRO Publishing.

Electronic order: <http://www.publish.csiro.au/books/>

This is about the 20th volume published of the 59 proposed volumes in the Flora of Australia series although developments in Australian botany over the past two decades have meant that the 1981 Introduction volume has now been entirely revised and re-issued as a second edition.

Volume 48 is a substantial treatise on the non-angiosperm elements in the Australian vascular flora. At 766 pages it might have been preferable to publish the volume in two parts: one for ferns and fern allies and another for gymnosperms. In any case this publication contains an imposing quantity of descriptive and distributional data for Australian lycophytes, psilophytes, ferns, conifers, and cycads. The volume contains descriptions of 582 species and includes an appendix with descriptions and typification of 22 new species, 13 new combinations, and one new genus: *Revwattsia* (Dryopteridaceae). Fern allies are represented in Australia by 44 species slightly outranking conifers with 43 species but lagging behind cycads with 69 species. The ranks of Australian cycads have swelled with circumscription of nine new species of *Macrozamia* in this volume.

Succinct circumscription of the diagnostic characters and keys for the identification for all phyla, families, genera and species are provided in this work. The keys are mostly easy to use although in a number of cases, especially at species level, they require specialized microscopic techniques (e.g., for recognition of stomata and spore-wall ornamentation) that may not be available to the interested lay botanist. In a few places (e.g., *Lycopodium-Lycopodiella*) the keys are a little cumbersome even without resort to microscopic techniques and clear, phylogenetically meaningful, distinctions between a few taxa are not readily apparent. Apart from the diagnostic morphological features, the distribution of each taxon is stated and aided by Australian distribution maps for each species and subspecies (609 in total). The maps provide a quick reference for regional distribution of taxa based on herbarium records and are useful for drawing attention to disjunct distribution patterns for some taxa that may require complex biogeographic and historical explanations. A point of caution, however, is that at least in one case the distribution indicated in the text does not match that in the maps. *Macrozamia pauli-guilielmi* (p. 652) is stated to occur in the Burnett, Darling Downs, and western Moreton districts in southeast Queensland. The corresponding distribution map (p. 702) indicates only a Burnett distribution. This appears

to be a case of an error in the text as the species is stated to occur almost exclusively on siliceous beach dune sands which are not a feature of the Darling Downs. For some species additional useful comments on morphological variation, inter-species distinctions and habitat preferences are included. Key synonymy records and literature references to illustrations are provided for each species. Although not every species is illustrated in this volume, the descriptions are supported by 117 full page, multi-element, line-drawings, and 96 good-quality colour photographs. Apart from general frond habit, the line-drawings of ferns are particularly useful for illustrating the key diagnostic features of sori position and structure and stipe/rhizome scale and hair morphology. Details of megaspore and microspore morphology are only provided for *Selaginella* and *Isoetes* although broad pollen characteristics are also given for some conifer genera and families. Given the importance of spore morphology in keying out *Isoetes* species in particular, it would have been useful to include some scanning electron micrographs or clear transmitted-light photomicrographs of the megaspores and microspores of each species as the subtleties of the ornamentation are difficult to express in line-drawings.

A point of caution for taxonomists is that *Callipteris* Bory 1804 (Athyraceae), although little used between 1804 and 1947, has priority over *Callipteris* Brongniart 1849, a Northern Hemisphere fossil peltasperm (seed-fern) species. Species of the latter are now mostly transferred to *Autunia*, but *Callipteris* is still widely used in the palaeobotanical literature for Late Carboniferous to Early Permian foliage. These records should not be taken to indicate generic affinity to extant *Callipteris* ferns (Kerp, 1986).

This volume still employs the category of Division rather than Phylum. As a concession to standardizing the codes of biological nomenclature, I would argue that the latter term should be preferred - especially where it comes to categorizing those micro-organisms where affinities to plants, fungi, or animals are not immediately clear. Apart from "Division" this volume does not employ any taxonomic categories higher than family. Such rankings (Class and Order) may lack any real meaning in our somewhat artificial classification schemes, and in any case it might be difficult to achieve consensus among a number of contributors. Furthermore, as Drinnan points out in the chapter

on Classification and Phylogeny, our understanding of the relationships of fern families is likely to see dramatic improvement in the near future with the broader application of cladistic methodology and the availability of a greater range of gene sequences from a larger number of species. Erecting a detailed supra-familial classification scheme for this volume might, therefore, be premature.

Just as plant groupings periodically change status, so too geologists periodically change the status of stratigraphic terms. In 1997 the International Commission on Stratigraphy resolved to drop the use of the term 'Tertiary' System/Period and replace it with the Paleogene and Neogene Systems/Periods (previously of sub-system/sub-period status). The succeeding Quaternary System/Period retains its status. The use of 'Tertiary Period' throughout the text of this volume is now redundant and in most cases can simply be replaced with 'Cenozoic Era' (incorporating the Paleogene, Neogene, and Quaternary).

A review of the available palaeobotanical data by Hill & Jordan provides a succinct summary of the continent's ferns and fern ally fossil record. Their review focuses mainly on the relatively recent fossil record (last 100 million years) of direct relevance to the extant flora, although it should be noted that for some groups (e.g., *Isoetes*) there are records of plants (variably assigned to *Isoetes* or *Isoetites*) with close affinities to extant representatives in much older rocks of Triassic to Early Cretaceous age (Walkom, 1944; Retallack, 1997). Hill & Jordan summarize the fossil record for 10 fern families. Although the fossil record of spore-producing plants is difficult to summarize in a few pages there are a few additional families that could also be mentioned in this summary. For example, several fossil fronds from the Australian Early Cretaceous have been assigned to *Gleichenites* (or *Microphylopteris*) with inferred gleicheniaceous affinities. However, recent studies (Cantrill, 1998) suggest that at least some of these should be reassessed as possible representatives of *Lophosoria* - now restricted to the Americas. Megaspores referred to *Arcellites* from the mid-Early Cretaceous of Victoria (Douglas, 1973) also indicate the early appearance of heterosporous aquatic ferns in Australia not long after their oldest (earliest Cretaceous) records from the Northern Hemisphere (Kovach & Batten, 1993). The Dipteridaceae also has a long fossil record in Australia extending back to at least the Middle Triassic although it is likely that they became regionally extinct during the Late Cretaceous and that the single extant representative of this family in Australia, *Dipteris conjugata*, may be derived from tropical Malesian stock that entered northern Australia during the Cenozoic.

The introductory section to the gymnosperms by Ken Hill and the chapters on the fossil record of conifers by Bob Hill and Leonie Scriven and the fossil

history of cycads by Bob Hill include useful summaries of the history of gymnosperm systematics and the Australian palaeobotanical record of these groups. A couple of slight discrepancies between the information presented in different chapters were noted. Just as a small example, on page 514 the Araucariaceae are stated to first appear in the fossil record during the Early Cretaceous but on page 527 a Late Triassic origin is indicated. A similar discrepancy is noted for the origin of cycads. While these are relatively minor points and may result from different interpretations of the primary data, they are a little distracting for the reader and could have been picked up during the editing process.

Inclusion in the text of doubtful records (e.g., *Christensenia aescilifolia*: Marattiaceae), taxa of uncertain affinity (e.g., '*Oenotrichia tripinnata*'), and the notable concentration of many species to eastern moist forests (many restricted to small areas) suggests that there is much work yet to be done on Australian fern systematics. Judging from the recent increase in recognized cycad species, there is probably a substantial number of undescribed, geographically restricted, fern and allied taxa awaiting discovery and description particularly in the wet tropics. This volume represents a sound foundation for future research on Australian non-angiosperm vascular plant systematics.

Despite the relatively minor problems mentioned above, this volume will be a valuable aid to systematists, biogeographers, palaeobotanists, and ecologists studying the Australian vascular flora. It will also be of substantial benefit to lay botanists interested in identifying native pteridophytes and gymnosperms. At \$60 for the softback edition and \$95 for the hardback this volume is reasonably priced for its detailed content and the breadth of its focus.

Stephen McLoughlin
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Do Not Yield to Despair

Frank Hugh Hann's Exploration Diaries in the Arid Interior of Australia 1895-1908

Compiled and edited by Mike Donaldson and Ian Elliot
Hesperian Press, P.O. Box 317, Victoria Park, W.A. 6100 (1998). xi + 426 pp.
ISBN 0 85905 226 5. Price \$A80.00

Also from Hesperian Press we have this compilation of the diaries of Frank Hann (1845-1921), a pastoralist, prospector and bushman who explored across northern Australia from Lawn Hill Station, Queensland, to Halls Creek, Western Australia, in 1896; east of the Pilbara and the west Kimberley in 1897-1898; and large tracts of inland Western Australia from 1901 to 1908, including expeditions as far east as Oodnadatta, South Australia. Among his discoveries were the Rudall River and Lake

Disappointment, Isdell and Charnley Rivers, In all he named more than 500 geographical features, and is himself commemorated in such names as the Hann River, Mount Hann and Frank Hann National Park. Although not a major botanical collector, Hann was instrumental in making known outback Western Australia.

Alex George

Brilliant Careers

Women collectors and illustrators in Queensland

Compiled by Judith McKay
Queensland Museum, PO Box 3300, South Brisbane, Qld 4101 (1997). vii + 80 pp.
ISBN 0 7242 7693 9 Price \$24.95

This book will be familiar to Queensland members (especially those who contributed chapters) but is probably little known elsewhere. It contains short biographies of 34 women who collected and/or illustrated natural history specimens in Queensland. The botanical ones are Harriette Biddulph, Mary Strong Clemens, Joan Cribb, Amalie Dietrich, Hilda Geismann, Doris Goy, Selina Lovell, Kathleen McArthur, Ada McLaughlin, Ellis

Rowan, Vera Scarth-Johnson and Estelle Thomson. Most include a portrait and there are reproductions of illustrations as well as photographs of herbarium specimens. An entertaining book, and very useful for those interested in the history of natural history.

Alex George

Malesian Seed Plants.

An aid for identification of families and genera.

Vol. 2: Portraits of tree families

M.M.J. van Balgooy
Rijksherbarium/Hortus Botanicus, Leiden 1998
ISBN 90-71236-36-6
Price: Dfl. 100,00.

This modest paperback is an interesting addition to the literature on Malesian seed plants. It has been designed very carefully to be nothing more or less than a first step guide to help out when surrounded by a bewildering array of trees, often not flowering

or with flowers hopelessly out of reach. It is designed to help make the first few steps towards identification if you have little idea what you are looking at. The identification is only to family level, and for a family to be included in the guide it needed

to have at least one tree species in the region with a diameter of 10 cm or more or a height of at least 10 metres. On this basis 111 families are included. Each family gets roughly a page of text, with characters spilt into a variety of increasingly less significant headings, starting with "Always" which means that the characters listed apply to all Malesian species of the family, through "Usually/Often" and "Striking Features". For people like me who get very confused in forests like these, there is also a "Different From" heading, which helps to separate out taxa that might be confused for the family you are reading about.

I have not had the opportunity to use this book, but I have spent time in the mountains of New Guinea, with a guide giving us the local name for each tree, and my job was to write it down for later confirmation with a herbarium specimen and keys. Given that my written interpretation of a language that had little resemblance to English was quaint if you are kind and useless if you aren't, and that our guide decided that telling us the name of each species once was enough, so that if we came across it again later he wouldn't tell because we had already done that one, this turned in to one of the more humiliating exercises in field taxonomy. I would have paid a lot for a book like this then.

There are a couple of obvious faults. Firstly, it is a paperback, with no special protection provided. In many Malesian forests the lifespan of this book if it was genuinely used as a field guide would be very short. This isn't the professed use of the book. I suspect the idea is to get specimens back to the lab and then start the process. The book is illustrated with line drawings taken from a variety of sources, and they vary from excellent to less than that, but in

all cases they are a useful addition. It is a pity that very early in the book the illustrations are lost from the facing page to the description, and while this comes and goes, for a guide like this it would have been worth some blank pages to retain that cohesion.

As a palaeobotanist who is often confronted with odd plant bits that I have no idea about, I like books with lots of pictures. Browsing through this book led me to occasionally think about some reproductive structure sitting in a glass vial somewhere that I have been puzzling over for years. Of course we rarely admit that this is how we make identifications, but I think this is a valid approach if the initial picture matching is followed up by a detailed comparison. You have to start somewhere.

So, if you are thinking of working in the Malesian forests and you don't know all the plants present, a copy of this book should be just what you need. The author accepts that there will be errors and he would like to know about them for corrections in future editions. I always like this little touch, it gets you off the hook in so many useful ways. Those of us who are not dedicated plant identifiers but still interested in knowing what we are seeing when we get to places like this should be extremely grateful for pragmatic approaches like this. For the few negative comments there are a lot of positive ones.

Robert S. Hill
Department of Environmental Biology
University of Adelaide

FORTHCOMING MEETINGS

Dampier 300 Conference, Perth, 6–10 December 1999

Registration fees etc. have now been determined for the conference.

Standard

Conference: \$A170 if paid by 30 September, \$A200 thereafter
Day registration: \$A50

Student

Conference: \$A85 if paid by 30 September, \$A100 thereafter
Day registration: \$A25

Other activities

Welcoming reception, 5 December: no charge
Field trip to Jurien and Eneabba, 3–4 December: \$A210
Aerial tour to Shark Bay, 5 December: \$A320
Field trip to the South-West, 11–14 December: \$A440
Afternoon river trip on 8 December: \$A35
Conference dinner (\$A40) (the menu will include vegetarian dishes)

During June, the second circular (including a registration form) will be mailed to all ASBS members and to others who have expressed their intention to attend.

Further information may be seen at the web site:

<http://www.museum.wa.gov.au/Dampier300/Dampier300.htm>

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William Dampier in New Holland 1699

For those interested in commemorating Dampier's visit in the *Roebuck*, the dates (adjusted to the Gregorian calendar) are as follows:

- 10 August: sighted Australian mainland north of where Geraldton now stands
- 16 August: entered Shark Bay and anchored near Sammys, south of Cape Inscription, on the eastern side of Dirk Hartog Island
- 16–21 August: at anchor at Sammys and landed several times on Dirk Hartog Island
- 21 August: sailed further into the Bay
- 21/22 August: at anchor north of Peron Peninsula
- 22 August: moved ship to anchorage east of passage between Dorre and Bernier Islands
- 23 August: some of the crew landed on Bernier Island
- 24 August: sailed out of Shark Bay via Naturaliste Passage
- night of 28/29 August: sailed past North-West Cape
- 31 August to 2 September: near the Lewis Islands, Dampier Archipelago; landed on East Lewis Island probably on 1 September
- 9–15 September: at Lagrange Bay, then sailed for Timor.

An exhibition including Dampier's surviving Australian plant specimens (now housed at the Fielding-Druce Herbarium, Oxford) will open at the Western Australian Museum on 6 August. On 16 August a commemorative plaque will be unveiled at his landing site on Dirk Hartog Island. The site, previously known informally as Sammys, will be named Dampier Landing.

Alex George, 'Four Gables', 18 Barclay Road, Kardinya, Western Australia 6163

III Southern Connection Congress

Monday 17 – Saturday 22 January 2000

(North Island Pre-Congress Field Trip – 10-16 January)

(South Island Post-Congress Field Trip - 23-29 January)

Venue:

Lincoln University, Canterbury, New Zealand

About the Congress

The Congress is taking place during an exciting and busy time in New Zealand. The millenium celebrations will be in full swing and the America's Cup boats will be fighting it out in Auckland. With all these in mind, early booking of flights is recommended.

The third Southern Connection Congress is an opportunity to discuss research in the fields of biosystematics, ecology and biogeography in temperate ecosystems across the Southern Hemisphere. Building on the first two highly successful meetings in Australia and Chile, the New Zealand hosted congress provides the opportunity to develop further collaboration among researchers in various parts of Gondwana.

The theme

In 2000 the themes of the Congress are:

- to examine the influence of people on the structure and functioning of southern temperate ecosystems
- to further compare the ecology and biogeography of *Nothofagus* forests
- to investigate Gondwanan biogeographical links in diverse groups such as lichens and invertebrates

Field Trips are an integral part of Congress 2000 with several exciting programmes to choose from;

- North Island Pre-Congress Field Trip - An introduction to the main plant communities (forest types) in the northern part of the North Island. Monday 10 to Sunday 16 January 2000 @ \$700 per person. This will include six nights accommodation, 4 x lunches, 1 x dinner, transport, field guides and notes.
- Maruia Springs Field Trip - Tuesday 18 - Wednesday 19 January 2000 (Numbers restricted to 20 and places are allocated on a first come, first served basis) @ \$100. The field trip will visit north Canterbury and north Westland to view first hand recent operational research in the

sustainable management of indigenous beech forests. Price includes transport, lunch x 2 and twin share accommodation.

- Craigieburn-Arthurs Pass-West Coast Field Trip - Wednesday 19 January. Opportunity to view a wide range of ecosystems along the strong east-west rainfall gradient across the Southern Alps. \$35pp includes lunch, morning tea and coach travel.
- South Island Post-Congress Field Trip -A full and exciting seven day programme to include visits to the spectacular West Coast, glaciers, gorges, rain forests and mountains. Sunday 23 to Saturday 29 January 2000 @ \$850 in twin/double share. Price includes breakfast, lunch, dinner, field notes and transport.

Please check out our web page for more information on all the field trips.

Accommodation

Lincoln University, nestled in attractive rural surroundings, is just 21 km from Christchurch City and 16 km from Christchurch International Airport. Accommodation will be in the residential halls in single serviced bedrooms with shared bathrooms, comfortable furnishings, TV facilities, games rooms, lounges and laundries. The recreation centre is available free of charge to delegates in residence. Squash, basketball, volleyball, badminton and tennis courts are available, as well as a weight training room.

City Accommodation can also be reserved on your behalf at the following selected hotel/motel facilities. Specially discounted rates have been negotiated and include GST (Goods and Services Tax). Payment for this accommodation is to be made direct with the establishment.

- Copthorne Hotel, Durham Street, Christchurch. Telephone: (64)3)365-4699 Fax: (64)3)366-6302 \$99 per room
- Academy Motel, 62 Creyke Road. Telephone: (64)3)351-9347 Fax: (64)3)351-6027
 - a) Studio - Queen \$79 (2 people) \$73 (1 person)
 - b) 1 -bedroom (1 Double 1 Single) \$ 79 (1 person) \$90 (2 people) \$100 (3 people)

c) 2-bedroom (2 Single 1 Double) \$110 (2 people)
\$120 (3 people)

Complimentary transport to/from airport

- YMCA, 12 Hereford Street, Christchurch
Telephone: (64(3)365 0502 Fax (64(3)365 1386
Rooms with private facilities from \$62 per night

Call for Papers

A book of abstracts will be produced for circulation at the conference. All abstracts are to be submitted by **Friday 5 November 1999**

Format for Abstracts

- Length: Maximum of 350 words
- Text: Times 12, Justified, Single-spaced
- Paper size and margins: 2.5cm top and bottom; 3cm left and right on A4 paper
- Paper Title: Times 14, Bold, centred, followed by two line spaces
- Author's Name: Times 12, Bold, Centred, followed by two-line spaces
- Delete all headers and footers
- Author's Details: At the end of the abstract text, leave two-line spaces and provide the following information listed down the page and indented by 2cm from the margin: Author's Name, Department or Position, Institution or Organisation, Address, Phone + Fax and Email address. The same information for second author indented 9cm from the margin.
- Please check for spelling mistakes

Submission of Abstracts

- Send an electronic version to Dr Glenn Stewart. If emailing, send as an attachment in IBM compatible format or Send on a 3.5" IBM compatible disc
- All abstracts to be received by Dr Glenn Stewart by **Friday 5 November 1999** (see below for contact details)

Evening Social Events - (All optional)

Sunday 16 January- Welcome reception.

Monday 17 January - Christchurch and Casino night. The International Busking Festival will be taking place and this is an opportunity to see some of the entertaining and first class acts. Christchurch Casino is open 24 hours and offers a choice of cafes, restaurants and bars. Dress code is smart casual attire, no jeans or trainers. A bus will leave Lincoln University with return transport times staggered.

Tuesday 18 January - BBQ dinner at a variety of wineries located close to Lincoln University. Buses from Lincoln University will be provided. Cost \$30

Wednesday 19 January - Hangi at Lincoln University. A Hangi is a traditional Maori way of cooking food. Cost \$25

Friday 21 January - Conference Banquet at Lincoln University. An event not to be missed! Cost \$45

Weather in January

Daytime temperatures are normally between 20-25°C.

Take a Break

Tours such as to the French settlement at Akaroa, whale watching at Kaikoura, hot pools at Hanmer and the Tranz Alpine Express are only day trips from Christchurch. Activities include sightseeing and the arts around Christchurch, Mt Cavendish Gondola, hot air ballooning, jet boating and rafting.

Christchurch city centre has much to offer visitors, particularly in January when the SummerTimes Festival gets underway. The Festival starts on 1 January each year and provides nearly two months of non-stop, free entertainment of the highest quality. Well worth extending your stay in Christchurch for!

No formal partner programmes are being organised, however, partners can join delegates on the Field Trips and Conference Dinner. Costs are included on the registration form. Please contact Helen Shrewsbury at Lincoln University for further information.

Deadlines

Abstracts to be submitted by Friday 5 November 1999

Earlybird Registration ends Friday 19 November

Web page

<http://www.lincoln.ac.nz/cted/south/>

The web page is being continually up-dated with details of the conference as the programme is confirmed.

Contacts

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Abstracts/Proceedings and Programme

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FELLOWSHIPS

Information and application forms for the following fellowships are now available on the internet. The Academy's International Programs address is:
<http://www.science.org.au/internat/exchange/contscix.htm>

POSTDOCTORAL AND SHORT-TERM FELLOWSHIPS TO JAPAN IN 2000 – 2001

POSTDOCTORAL FELLOWSHIPS:

The Science and Technology Agency of Japan, in association with the Australian Academy of Science, is offering postdoctoral fellowships for young Australian scientists to do research in national laboratories and public research corporations (excluding universities and university-affiliated institutes) in Japan. The duration of the visits should be for periods of six months to two years between 1 April 2000 and 31 March 2001. Applications are invited from suitably qualified scientists and technologists to conduct research in a scientific, technological, engineering or non-clinical medical field.

The Japan Society for the Promotion of Science, in association with the Australian Academy of Science and the Australian Research Council, is offering postdoctoral fellowships for young Australian scientists to do research in Japanese universities and JSPS affiliated institutions in Japan. The duration of the visits should be for periods of 12 to 24 months between 1 April 2000 and 31 March 2001. Applications are invited from suitably qualified scientists to conduct research in any field of natural science, non-clinical medicine and engineering.

SHORT-TERM FELLOWSHIPS:

The Science and Technology Agency of Japan offers fellowships world-wide for scientists to do research in national laboratories and public research corporations (excluding universities and university-affiliated institutes) in Japan for periods of one to three months between 1 April 2000 and 31 March 2001.

The Science and Technology Agency of Japan offers awards to foreign specialists to do research in Japan in the fields of natural and applied science and technology. Visits are to be made to Japanese government national laboratories for a period of up to six months between 1 July 2000 and 31 March 2001. The name of the program is the **Japanese Government Research Awards for Foreign Specialists, Science Awards.**

Details and application forms for these fellowships are available at:
<http://www.science.org.au/internat/exchange/japfel.htm>

These schemes are administered by the Academy of Science as part of the International Science and Technology Networks element of the Department of Industry, Science and Resources' Technology Diffusion Program (TDP).

International Programs, Australian Academy of Science, GPO Box 783, Canberra ACT 2601
Fax: (02) 6257 4620, Email: is@science.org.au

DEADLINE FOR APPLICATIONS: 2 AUGUST 1999
Late applications will not be accepted

**SCIENTIFIC EXCHANGES TO JAPAN, CHINA,
KOREA AND TAIWAN IN 2000 - 2001**

The Australian Academy of Science invites applications from professional scientists to visit Japan (short-term and long-term), China (short-term only), Korea (short-term and long-term) and Taiwan (short-term only) between 1 July 2000 and 30 June 2001 to collaborate with researchers in those countries. Proposals in any field of natural science, basic and applied, including mathematics, and engineering science, will be considered. Australian citizens and permanent residents are invited to apply. Applicants must hold a PhD or equivalent at the time of application. The Japan long-term program will consider applicants who are about to submit a PhD thesis.

Applicants should propose a collaborative research project, or a specific activity, which has been developed in consultation with host scientists in those countries. Letters of invitation from each host institution to be visited must be submitted with applications. Proposals will be assessed on their scientific merit, the demonstrated achievements of the applicant, the appropriateness of the work being done in the nominated country, the value of the expected outcome of the research project to Australian science, and if the visit will improve Australian access to global science and technology. The proposed visit should lead to establishing longer term collaborations and facilitate the development of the applicant's career.

The proposed collaboration should be highly focused. Low priority will be given to proposals by applicants who wish to supplement study leave funding or to gain immediate postdoctoral training. Support will not be given when the primary purpose of the visit is to attend a conference.

This scheme is administered by the Australian Academy of Science as part of the International Science and Technology Networks element of the Department of Industry, Science and Resources' Technology Diffusion Program (TDP).

Awards include a return air fare and a subsistence allowance. Details of the eligibility requirements, lists of the applicable institutions in Japan and China, and application forms are available at:

<http://www.science.org.au/internat/exchange/jaexch.htm> - (Japan exchange)

<http://www.science.org.au/internat/exchange/taiwex.htm> - (Taiwan exchange)

<http://www.science.org.au/internat/exchange/chisci.htm> - (China exchange)

<http://www.science.org.au/internat/exchange/korex.htm> - (Korea exchange)

International Programs
Australian Academy of Science, GPO Box 783, Canberra ACT 2601.
Fax: (02) 6257 4620, Email: is@science.org.au

DEADLINE FOR APPLICATIONS: 1 SEPTEMBER 1999
Late applications will not be accepted

SCIENTIFIC VISITS TO EUROPE IN 2000 - 2001

The Australian Academy of Science invites applications from professional scientists to visit any European country between 1 July 2000 and 30 June 2001 to collaborate with researchers in those countries. This program incorporates the **French Embassy Fellowship** and the **Australia France Foundation Fellowship** under the **Bede Morris Fellowship Scheme**. One applicant will be selected for each of these two fellowships.

Proposals in any field of natural science, basic and applied, including mathematics and engineering science, will be considered. Australian citizens and permanent residents are invited to apply. Support will not be given when the primary purpose of the visit is to attend a conference.

Applicants must hold a PhD degree or equivalent at the time of application. They should propose a collaborative research project, or a specific activity, which has been developed in consultation with host scientists in those countries. Letters of invitation from each host institution to be visited must be submitted with applications. Proposals will be assessed on their scientific merit, the demonstrated achievements of the applicant, the appropriateness of the work being done in the nominated country, the value of the expected outcome of the research project to Australian science, and if the visit will improve Australian access to global science and technology. The proposed visit should lead to establishing longer term collaborations and facilitate the development of the applicant's career.

Preference will be given to visits which are short term and highly focused. Low priority will be given to proposals by applicants who wish to supplement study leave funding or to gain immediate postdoctoral training.

Successful applicants will receive from the Academy a grant-in-aid contributing to the cost of a return excursion economy class airfare to a maximum of \$2,600 and a maximum daily allowance of \$125 for a period between two and six weeks. The program does not provide funds for bench fees.

The **French Embassy Fellow** will be provided with a grant of 24,000 French francs as a contribution to costs associated with the visit. The money will be paid in French francs and must be collected in Paris. A visit of four weeks or more will be supported.

This scheme is administered by the Australian Academy of Science as part of the International Science and Technology Networks element of the Department of Industry, Science and Resources' Technology Diffusion Program (TDP), and with the support of the Embassy of France and the Australia France Foundation.

Application forms are available at <http://www.science.org.au/internat/exchange/eurovis.htm>

International Programs
Australian Academy of Science, GPO Box 783, Canberra ACT 2601
Fax: (02) 6257 4620, Email: ip@science.org.au

DEADLINE FOR APPLICATIONS: 1 OCTOBER 1999

Late applications will not be accepted

**SCIENTIFIC VISITS TO THE UNITED STATES OF AMERICA, CANADA,
AND MEXICO, IN 2000 - 2001**

The Australian Academy of Science invites applications from professional scientists to visit the United States of America, Canada and Mexico between 1 July 2000 and 30 June - 2001 to collaborate with researchers in those countries. Proposals in any field of natural science, basic and applied, including mathematics and engineering science, will be considered. Australian citizens and permanent residents are invited to apply. Support will not be given when the primary purpose of the visit is to attend a conference.

Applicants must hold a PhD degree or equivalent at the time of application. They should propose a collaborative research project, or a specific activity, which has been developed in consultation with host scientists in those countries. Letters of invitation from each host institution to be visited must be submitted with applications. Proposals will be assessed on their scientific merit, the demonstrated achievements of the applicant, the appropriateness of the work being done in the nominated country, the value of the expected outcome of the research project to Australian science, and if the visit will improve Australian access to global science and technology. The proposed visit should lead to establishing longer term collaborations and facilitate development of the applicant's career.

Preference will be given to visits which are short term and highly focused. Low priority will be given to proposals by applicants who wish to supplement study leave funding or to gain immediate postdoctoral training.

Successful applicants will receive from the Academy a grant-in-aid contributing to the cost of a return excursion economy class airfare to a maximum of \$2,600 and a maximum daily allowance of \$125 for a period between two and six weeks. The program does not provide funds for bench fees.

This scheme is administered by the Australian Academy of Science as part of the International Science and Technology Networks element of the Department of Industry, Science and Resources' Technology Diffusion Program (TDP).

Application forms are available at
<http://www.science.org.au/internat/exchange/usavis.htm>

International Programs
Australian Academy of Science, GPO Box 783, Canberra ACT 2601
Fax: (02) 6257 4620, Email: ip@science.org.au

DEADLINE FOR APPLICATIONS: 1 NOVEMBER 1999
Late applications will not be accepted

**YEAR 2000
FRENCH GOVERNMENT SCIENTIFIC FELLOWSHIPS**

I – Purposes and conditions

In the year 2000, as every year, the Embassy of France in Canberra will manage a limited number of scientific fellowships that are offered by the French Ministry of Foreign Affairs in Paris. The purpose of the French Government Scientific Fellowships is to enable scientists living and working in Australia, and involved in French-Australian scientific research projects, to visit the French host laboratory or institution in order to pursue their current collaborative research, to complete their training or to implement a well-defined project that can be beneficial to Australia and France. The fellowships are tenable for a duration of 3 to 6 months, and must be taken up during the year 2000, between February and December 2000.

Applicants may be working in any field of natural, basic and applied science, in engineering, or in a field associated with cultural aspects of science. Proposals will be assessed on scientific merit and on the applicant's qualifications and achievements. It is recommended that applicants avoid planning to visit France during the French holiday seasons, such as during July and August.

Interested applicants should provide:

- a detailed program of the proposed collaboration
- a statement outlining why the research or training should be carried out in France, and how it would benefit France and Australia
- a letter of acceptance from the host laboratory or institution

II - Eligibility

Applicants should

- be able to communicate in French or be prepared to undertake refresher courses prior to departure
- be between 25 and 40 years old at January 1, 1999,
- be an Australian citizen or a permanent resident of Australia
- possess tertiary academic qualifications
- have at least two years experience in scientific research.

III - Benefits

Each fellowship provides:

- a monthly allowance ranging from FF 5500 to FF 5800 (roughly A\$ 1,250 to A\$ 1,500)
- basic medical cover.

Please note: airfares, other costs of travel and of accommodation are not provided, and there are no benefits for dependants.

IV - Closing date and application forms

The closing date for receipt of applications is 15 JULY 1999.

Application forms are available from our website:

http://www.france.net.au/frames_eng.html

For further information, Please contact Janine Mordek
Telephone (02) 6216 0139 - Fax (02) 6216 0156 - e-mail: cst@france.net.au

NEWS FROM FASTS

FASTS circular for March

1. Science and Parliament

The policy debate rages in Canberra, and there is a whole raft of issues where impending announcements will have major implications for the way science and technology conducts its business in Australia.

The opinion of FASTS is increasingly sought. Part of this stems from our membership of the Prime Minister's Science Council (PMSEIC), which brings me into regular contact with Ministers covering portfolios ranging from Health to Education and the Environment.

As well as formal contact with PMSEIC and groups like the Government Committee on Science and Industry chaired by Senator Grant Chapman, I am sounded out and asked informally to suggest names for key appointments.

Minister Minchin recently invited a small group to dinner at Parliament House to discuss science issues and priorities, and it is useful on these occasions to inject information from the grass-roots science and technology community.

The matters on which we are asked to comment are becoming increasingly technical with capital gains tax and the future of the tax concession to industry for R&D two examples of issues with a maze of unintended consequences and side effects.

Both are two key issues for the science and technology community, and both should be seen in the context of clear political signals that neither major party is convinced that money going to R&D is an investment in Australia's future rather than a drain on the public purse.

Both parties are waiting for industry to make up the shortfall by increasing its investment in research.

This is despite examples from the US, the UK and Japan. These countries have seen where the future lies and massively increased their public investment in research. The Wills Review on medical research has endorsed these views and I hope the Government adopts the major recommendations of the Report.

The temptation for Parliamentarians faced with making decisions in these areas against a backdrop of clamour of competing causes is to look for the short-term solutions. But anyone involved in research knows it can take 15 years from clever idea to marketable product.

Science is not well served in Australia by the fact that only 11 of the 224 MHRs and Senators have formal qualifications in science. Another 5 have engineering degrees, and 13 have qualifications in health care. (Source: Australian Parliamentary Library)

Parliamentarians are not unsympathetic to S&T but the imperatives of a 3 year Parliamentary term and dealing with a bewildering array of issues are powerful incentives to seek quick and simple answers. What Australia really needs is a considered blueprint for the future.

2. Green Paper on Research and Research Training

The release of this paper by Minister Kemp is imminent. He is expected to allow three months for comment and response, in order to get comprehensive feedback, and in contrast to the botched and secretive release of earlier plans to change the system.

FASTS is planning a symposium to discuss the Paper, and allow people from industry and research to exchange views and hear different perspectives before the time for formal responses has closed.

3. New Chief Scientist Expected Soon

The announcement of a new Chief Scientist is imminent. The scientific and technological community is watching with interest to see who will pick up the baton from John Stocker.

Stocker is a hard act to follow. One of the bright spots on the science horizon has been the significant rise in prestige and performance of the Prime Minister's Science Council, and I hope the new appointee will be able to match Stocker's astute management of the Council.

4. The Biotechnology Paper

The FASTS' Occasional Paper on Biotechnology by Board Member Peter French has sparked interest in business and political circles. It outlines the possibilities open to Australia if industry, government and researchers act together; and gives a realistic assessment of where our international competition lies.

The paper has been widely circulated, and demand from Parliamentary Committees and industry groups has forced a third printing.

5. Revisions in the Wings

FASTS will release a revised version of its policy document in November this year. All Member Societies have been invited to nominate changes and additions to the document.

Chair of Policy Committee Ken Baldwin has convened a Committee meeting for April 30, and is interested in hearing ideas and comments. His email address is: Kenneth.Baldwin@anu.edu.au

One new issue is the increasing difficulty of arranging scientific exchanges, particularly at the postdoctoral level because of immigration policies in Australia and overseas. Until recently, postdoctoral study overseas was the norm for Australian Ph.D. graduates. Australian laboratories derived substantial benefit from foreign researchers at this level, but many opportunities to fund international exchange visits by scientists are being lost as government policies increasingly favour the appointment of locally qualified people.

Postdoctoral training in Europe is almost prohibited except where individuals have European passports or work permits. Should we be arguing for open borders, or is overseas training and experience no longer important for the next generation of Australian scientists?

6. New FASTS Brochure

FASTS wants more members! Fifty thousand scientists and technologists belong to the Learned Societies that make up the membership of FASTS, but many other Societies could join. A brochure explaining the benefits of membership is available from the FASTS' office.

7. Response to Wills Review

FASTS' response to the Wills Review on medical research generally applauded its recommendations, but urged a strengthening and increased funding for

the NH&MRC; and also improved infrastructure in universities through full implementation of the Boston Review.

Thanks to Board Member David Tracey for drafting and ushering through the process of consultation.

8. New Oceans Policy

Minister Hill's announcement of new funding for Australia's Ocean Territory is welcome, although \$50 million of research funding over three years is not going to discover very much about an ocean area larger than the land mass of Australia.

The first meeting of the National Oceans Ministerial Board is expected before the end of April and will select a National Oceans Advisory Group. NOAG will provide technical advice, and marine and geological interests with close links to FASTS should be represented on NOAG.

9. Commercialising Science

The FASTS report on the barriers scientists and technologists face in commercialising their science has turned up a whole series of recommendations on how things could be improved.

Information was gathered through focus groups, involving 120 scientists across Australia. It was carried out with the assistance of a grant from the Department of Industry, Science and Resources, and the report is scheduled to be finished in the next few weeks.

10. National Pride in Science

Some may have missed reports earlier this year of an international survey to find what it was that made people proud of their country. The Melbourne Institute of Applied Economic and Social Research study showed Australians ranked science and technology second highest on their list, behind only sport.

This was the second highest ranking for science and technology in the 24 countries, and adds weight to FASTS suggestion to the Government to capture the imagination of all Australians with landmark S&T-based projects to mark the Year 2001.

Peter Cullen
President
12 April 1999

FASTS Welcomes Chief Scientist

Australia's peak council for working scientists and technologists has welcomed the appointment of Dr Robin Batterham as the Chief Scientist of Australia.

Professor Peter Cullen, President of the Federation of Australian Scientific and Technological Societies (FASTS), said he looked forward to working with Dr Batterham on the Prime Minister's Science Council.

"The Chief Scientist plays a pivotal role in bringing a whole-of-Government approach to the funding and application of research for the benefit of Australia," he said.

"Dr Batterham's record in research and industry leave him admirably placed to capitalise on the considerable achievements of his predecessor, Professor John Stocker."

Professor Cullen said growing interest in science and technology by State and Territory Governments opened up intriguing prospects for the Chief Scientist in his dealings with the more innovative States.

"The recent investments by Queensland in biotechnology underline the emerging role for regional government in science. Queensland are picking up initiatives trailblazed by Victoria and West Australia, and some of the other jurisdictions are not far behind," he said.

Professor Cullen said the appointment coincides with a growing awareness of the power of science and technology to generate wealth-creating industries by the Commonwealth Government, although funding for scientific research was yet to match the rhetoric.

Scientists Behaving Commercially

A new report released today (Wednesday) shows that scientists and technologists still have to battle when it comes to commercialising the results of their work.

The report indicates that the innovation process in Australia is at an immature stage, as scientists, industry, research organisations, Government and investors search for the magic formula to generate new industries and jobs out of Australian research.

"Scientists commercialising their research" is published by the Federation of Australian Scientific and Technological Societies (FASTS). Based on discussions with 126 scientists and technologists across Australia, it provides a snapshot picture of the way scientists see the commercialisation process and the obstacles which stand in their way.

Professor Peter Cullen, President of FASTS, said the report shows Australia has a long way to travel if the nation wants to make the best use of its high-quality research.

"It boils down to a change of attitude, a change of culture," he said. "Australians have to learn to be comfortable with the ideas of commercialisation and entrepreneurship, and of some people becoming seriously rich.

Prominent among the discouraging factors identified by participants were:

- timid industry reluctant to invest in Australian ideas
- lack of recognition within research organisations for commercially-orientated work
- colleagues who looked down on commercial work as second-rate
- lack of good advice on how to commercialise work
- capital gains tax (CGT)

Some confessed to becoming so weary with battling against the odds that they walked away from trying to commercialise promising new ideas, in order to concentrate on the traditional means of achieving a successful academic career through publishing papers.

"But there are also promising signs to show that things are changing," Professor Cullen said. "There was widespread recognition that the Cooperative Research Centres are bridging the gap between research and industry."

The report also identified possible solutions. These included developing a long term strategy to change cultural attitudes in Australia, to foster acceptance

and support for research-driven, high technology industries as creators of wealth and jobs.

Professor Cullen said that Government can do only so much to bring about the changes.

"There are lessons for everyone - industry, research organisations, the scientific community, potential investors and the community. The Australian

community has yet to appreciate the connection between science and technology, and a healthy long-term economy," he said.

The report was written by Executive Director of FASTS Mr Toss Gascoigne and a Brisbane-based consultant Ms Jenni Metcalfe, and part-funded by a grant from the Commonwealth Department of Industry, Science and Resources.

Science Awareness: Why is it so?

Australia's peak council for working scientists and technologists urged the science community to speak out strongly in a review of a national program for science awareness. The review is expected to be announced today (Tuesday 15th June).

Professor Peter Cullen, President of the Federation of Australian Scientific and Technological Societies (FASTS), said the review should be seen as an opportunity to set new objectives and a new direction for the program, and to reverse savage cuts announced in the last Budget.

The Commonwealth Department of Industry, Science and Resources (ISR) currently spends \$2.6 million each year on initiatives like the Australia Prize, National Science Week, and the Science Olympiads.

"These are all worthy ideas," Professor Cullen said. "But the objectives of the Program have not always been clear. We need to identify exactly what we want to achieve from this Program, and the best way to achieve these objectives.

"How much science do people need to know? What is the best way to get these ideas across? Where should we spend the money, and how much do we need to spend?"

"It's a crucial issue, one we need to get right."

He said FASTS will actively support meetings planned for Melbourne, Sydney and Canberra to discuss future directions of the program. The meetings are to be conducted by the National Science Forum, with venues and dates to be announced shortly.

Government expenditure on science awareness in 1998-99 was in the following projects:

Australia Prize	\$500,000
National Science Week	\$450,000

Science Olympiads	\$250,000
ABC Science Development Project	\$330,000
Michael Daley Awards	\$48,000
STAP small grants	\$1,000,000
S&T Communication activities	\$45,000
Survey and Evaluation	\$25,000

TOTAL EXPENDITURE \$2,648,000 (approx)

The 1999 Budget reduced this to \$1.5 million and then \$800,000 over the next two years.

The review has been asked to identify what the science and technology awareness needs are in Australia, the extent to which these are being addressed by existing initiatives, and propose any changes to STAP that may be necessary to take account of current awareness needs and to improve outcomes.

Professor Cullen said FASTS approved of the broad terms of reference for the inquiry.

"It's a great opportunity to have a complete rethink about what we are trying to achieve and the way we are going about it," he said.

Mr Toss Gascoigne
Executive Director
Federation of Australian Scientific and Technological Societies, PO Box 218,
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<http://www.usyd.edu.au/su/fast/>

A.S.B.S. PUBLICATIONS

History of Systematic Botany in Australia

Edited by P.S. Short. A4, case bound, 326pp. A.S.B.S., 1990. \$10; plus \$10 p. & p.

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

Systematic Status of Large Flowering Plant Genera

A.S.B.S. Newsletter Number 53, edited by Helen Hewson. 1987. \$5 + \$1.10 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*.

Evolution of the Flora and Fauna of Arid Australia

Edited by W.R. Barker & P.J.M. Greenslade. A.S.B.S. & A.N.Z.A.A.S., 1982. \$20 + \$5 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.

Ecology of the Southern Conifers

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.

Australian Systematic Botany Society Newsletter

Back issues of the Newsletter are available from Number 27 (May 1981) onwards, although several issues have now sold out. Cover prices are \$3.50 (Numbers 27-59, excluding Number 53) and \$5.00 (Number 53, and 60 onwards). Postage \$1.10 per issue.

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This list will be kept up to date, and will be published in each issue.
Please inform us of any changes or additions.

AUSTRALIAN SYSTEMATIC BOTANY SOCIETY INCORPORATED

The Society

The Australian 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 and forwarding it, with the appropriate subscription, to the treasurer. Subscriptions become due on January 1 each year.

The Newsletter

The *Newsletter* appears quarterly, 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.

Contributions should be sent to the editor at the address given below. They should preferably be submitted as: - an unformatted word-processor file on an MS-DOS or Macintosh diskette (Microsoft Word 6 or an earlier version is preferred), accompanied by a printed copy; as an email message or attachment, accompanied by a fax message reporting the sending of the file; or as two typed copies.

The deadline for contributions is the last day of February, May, August and November.

All items incorporated in the *Newsletter* will be duly acknowledged. Authors alone are responsible for the views expressed, and statements made by the authors do not necessarily represent the views of the Australian Systematic Botany Society Inc. *Newsletter* items should not be reproduced without the permission of the author of the material.

Notes

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Advertising space is available for products or services of interest to A.S.B.S. members. Current rate is \$100 per full page, \$50 per half-page or less, with a 20% discount for second and subsequent entries of the same advertisement. Advertisements from ASBS members are usually exempt from fees. Contact the *Newsletter* editor for further information.

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