

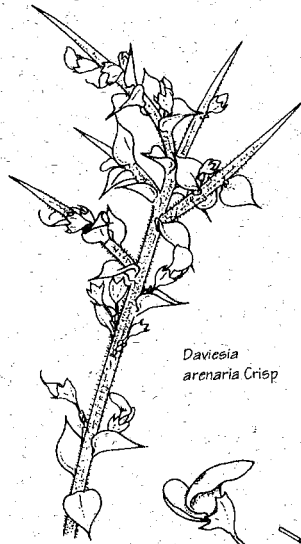


# Australian Systematic Botany Society NEWSLETTER

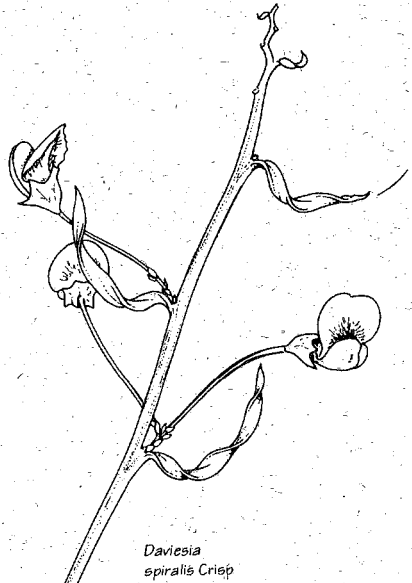
No. 82 MARCH 1995



*Daviesia  
cremata* Crisp



*Daviesia  
arenaria* Crisp



*Daviesia  
spiralis* Crisp



*Daviesia  
nova-anglica* Crisp

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## EDITORIAL

The palaeobotany column in the last Newsletter has disturbed the executive of the Palaeobotanical and Palynological Association of Australia and their response is published below as a letter to the editor. As editors, we do not believe in this instance that it is in the interests of our Society to upset another professional group. Our editorial response has been to drop the Palaeobotany column as a formal feature of the newsletter.

We were disappointed at the response of the PPAA but acknowledge their views. The few ASBS members spoken to all supported the column but we have certainly not canvassed the issue widely. We hope that the palaeobotanists will continue to submit items for inclusion under our other regular headings.

Readers may (?) be pleased to see that David Morrison has returned from the wilderness - just when we thought we were light on for material. I enclose an excerpt from his covering note with his

book review just to show that his greatest fear in not being able to defend himself is unjustified. The review is the unabridged version.

*"It was a novel experience to open an issue of the Newsletter, and not to have already read it at least three or four times! I quite enjoyed this feeling of elation, and I look forward to many future issues when the same feeling will reappear..*

*Anyway, I can't have you and the Treasurer thinking that you can get away with no more book reviews; and so here is another effort from my pen. Nor can either of you think that future book reviews will be any shorter than past ones. My only difficulty here is that I'm pretty sure that the editors will cut out the apparently irrelevant bits (such as the first paragraph of the attached review), and that I will no longer be able to defend myself!"*

## LETTERS TO THE EDITOR

Dear Greg,

We would like to respond to the editorial and David Greenwood's report on palaeobotany in the last ASBS newsletter. Since the Palaeobotanical and Palynological Association of Australasia was specifically mentioned (in a piece from one of our members, David Greenwood) we thought we should at least state the view of the current PPAA executive on the matter of a special palaeobotany correspondent.

While we appreciate the sentiment behind the editorial which suggested that it is time to "give

palaeobotanists a go", it is just a little condescending and we don't need that. Palaeobotanists get a very good go already, because they deserve it. We can make our way as part of the mainstream without special help.

Consider some recent examples which demonstrate this. In 1993, at the joint Southern Connection, ASBS and ESA conference in Hobart, a lot of palaeobotanical papers were presented alongside other botanical offerings, with no attempt to separate them in any way. In fact Liz Truswell presented the Nancy Burbidge memorial lecture, later published in *Australian Systematic Botany*, on a very palaeobotanical theme. The number of palaeobotanical offerings at recent ASBS

conferences generally also testifies to the health and integrated nature of palaeobotany in Australia.

Anyone reading Australian Systematic Botany will be aware that it has a good proportion of palaeobotanical papers in it, and the palaeobotanical research group at the University of Tasmania at least has made a special effort to publish there rather than in geological journals so that our work would be more accessible to the botanical community (for better or worse). Bob Hill and Liz Truswell were invited to coordinate a chapter on palaeobotany in the new edition of the Flora of Australia Volume 1 by Tony Orchard. Finally, it was very pleasing to see how much palaeobotany featured in the recent press releases on the Wollemi Pine and the new genus of Proteaceae from the Atherton Tableland. Not only that, but in the former case the palaeobotanical community was extensively canvassed prior to the press release being made. We believe that this demonstrates that all botanists have plenty of opportunity to keep up with developments in palaeobotany.

It is also important to appreciate the integrity of the societies involved. PPAA has its own newsletter, which covers some items of potential interest to ASBS members. These could be made available to ASBS newsletter editors on a swapping of information basis. However, palaeobotany covers much more than systematics, just as systematics covers much more than palaeobotany, so the two areas are not in any way inclusive of one another. That being the case, it is important to consider other "special interest" groups that fall

into the same category. Why not have a cladistics correspondent, and maybe one for molecular biology, ecology etc.? Some of these areas are not covered by a newsletter and thus are much more in need of publicity than palaeobotany is.

The most important point we would like to make concerns the credibility of palaeobotany. Only a few years ago palaeobotany was not taken very seriously outside the discipline. That changed slowly, probably starting with the influence of Isabel Cookson in the 1950s. Many people have worked very hard over the years since then to see palaeobotany accepted as a legitimate mainstream part of botanical science in this country. The examples above indicate the success of this effort. It is for this reason that we feel a little sensitive at being singled out for special attention. Before this is carried too far we would like to see some consideration given to all areas of speciality, and a more balanced view taken of the need for special correspondents.

If anyone would like to join PPAA please contact Leonie Scriven at the Department of Plant Science, University of Tasmania, GPO Box 252C, Hobart, Tasmania 7001. The annual fee is \$8, for which you receive a twice yearly newsletter and an occasional (usually annual) bibliography.

The PPAA Executive:

Bob Hill (President), Greg Jordan (Secretary), Leonie Scriven (Treasurer), Mike Pole (Editor of Palaeoaustral - the newsletter of PPAA).

## FROM THE PRESIDENT

### NATIONAL BIODIVERSITY COUNCIL

The National Biodiversity Council has now come into being. Hopefully it will take the initiative on biodiversity issues in this country. ASBS has done

very well with three out of ten representatives on the council: Tim Entwisle, Bob Hill and Judy West. Feel free to contact them about any burning issue you want raised.

## WOODCHIPPING

There can be no ASBS member who is unaware of all the fuss that has erupted over woodchipping in recent weeks. Many of you will have 'green' sympathies, but I do not doubt that some support woodchipping, or at least some sort of logging in native forests. However, I hope that all our members would agree on one thing: whatever is done about the management of our native old growth forests, it should be sustainable, and decisions should be on a rational scientific basis. Undoubtedly, some forms of logging are sustainable and compatible with conservation. However, many sites have unique biodiversity values and should be preserved for posterity. It is essential to carry out rigorous scientific studies to determine which sites should be preserved and which may be logged with care. This principle seems to have been lost sight of by Cabinet, who were panicked by the blockade of angry loggers and their rigs at Parliament house in Canberra. Of course the employment security of loggers is important, as it is for any group in the community. However, bullying tactics can only lead to short-term fixes and will create greater problems in the long run. Many jobs that are being lost in the forestry industry are not due to conservation but because the industry is being automated and because the loggable forests are running out anyway. I think that the government should be persuaded to restructure the industry urgently, and help those who will have to get out do so with dignity. And this should be done before the last old growth forests are woodchipped,

not afterwards. Meanwhile the precautionary principle should be applied - do not woodchip any forests until after they have been assessed thoroughly and scientifically, instead of rushing through token efforts, as seems to be happening now. By the time you read this I will have written a letter to Mr Keating saying essentially these things. In the letter I am emphasizing that our society represents the collective Australian expertise on plant biodiversity, and this is reflected in our high representation on the NBC. I would like to hear your views on this.

## CLADISTICS WORKSHOP

Planning is proceeding for the workshop and ASBS general meeting, to be held on 25-29 September 1995. The first notice (in Newsletter 79 last year) brought 32 responses from all over Australia, including a good mix of students and professionals. This number is close to the limit that we can readily cope with, but if anyone missed the first notice and is desperately keen to participate, contact me as soon as possible. I will send out a second circular soon, asking for confirmation of attendance, and taking bookings for accommodation. I have reserved a number of rooms at John 23rd College on the ANU campus. This college was renovated recently and has comfortable single rooms with shared bathrooms at \$27 per night (full board). Twin rooms are also available at \$50. Meanwhile, if attending, you should be putting together a data set that you can analyse during the course.

Mike Crisp

## ARTICLES

### THE ROYAL BOTANIC GARDENS, KEW - A TOTALLY INCOMPLETE SUMMARY

Barry Conn  
ABLO

The botanical institution encompassed by the Royal Botanic Gardens, Kew is well-known. Many

international research visitors (representing over 40 countries per year) use the facilities and expertise of this institution. Collaborative programs between K and other countries, include projects in Brazil, Brunei, Cameroon, China, East Africa, Indonesia, Madagascar, Malawi, and Malaysia. Kew continues to maintain an extensive publication output (at least 3,000 pages of high-quality scientific text each year).

The Gardens at Kew have been part of British history for more than 300 years and were established as the Royal Botanic Gardens in 1759. Wakehurst Place dates back to late Norman times (202 hectares), although its exotic collections were commenced in the mid 19th century. The Royal Botanic Gardens at Kew in Surrey consist of 121 hectares. The Living Collections Department currently manages about 35,000 taxa of plants, represented by 80,000 accessions. These collections are used to support international and national programs of science and conservation as well as provide a valuable teaching resource and a major tourist attraction.

The herbarium and library were founded in 1852 with the presentation of the collections of the British botanist, W.A. Bromfield, to which were added the extensive herbaria and libraries of George Bentham (in 1854) and Sir William Hooker (in 1867), with the entire mycological herbarium of Rev. M.J. Berkeley added in 1879. Today the Kew Herbarium is thought to contain about seven million collections. The Library and Archives possess one of the best collections of botanical works in the world. They contain over 120,000 books, 4,000 periodicals, 140,000 pamphlets and reprints, 11,000 maps, 10,000 microforms, c. 210,000 illustrations, c. 500 portraits and c. 175,000 letters in the archives.

The Centre for Economic Botany at Kew curates a collection of more than 73,000 items of useful plant products and artefacts. A proportion of this collection formed the world's first Museum of Economic Botany which was founded by Sir William Hooker in 1847. The Jodrell Laboratory at Kew, founded in 1876, undertakes research into plant anatomy, biological interactions, cytogenetics, molecular systematics and seed conservation. The Seed Conservation Section now holds nearly 4,000 species, particularly targeting the British Flora and species useful to humans from arid and semi-arid regions.

In the area of education, RBG Kew links with leading universities to advance plant science education, to develop co-ordinated graduate education and to promote post-doctoral fellowship programs at Kew. Over 50 Ph.D. projects are co-supervised by Kew staff in collaboration with

some 25 universities. Six Ph.D. students and one M.Sc. student are funded at K, at any one time.

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## **THE ROLE AND DUTIES OF THE AUSTRALIAN BOTANICAL LIAISON OFFICER**

Barry Conn  
ABLO

The opportunity to represent Australasian botany is indeed an honour and a responsibility which I fully accept. It is especially humbling to realise that the support and confidence of many people is required before a proposal to be an ABLO can become a reality. In my case, the support of my home institution (NSW), and in particular, Prof. Carrick Chambers and Dr Barbara Briggs; the heads of the Australian herbaria (CHAH); ABRS; together with the support of the relevant Federal and State Government Ministers, have enabled me to participate in this scheme. As is well known, the financial commitment of ABRS and NSW (in my case) is considerable. I gratefully acknowledge the generous support that I have received.

Over the years, I have discussed the ABLO position with several of the former incumbents. Therefore, I was fully aware of the nature of the position, including the difficulties and benefits, before requesting that I be considered for the position. Through these discussions, I was also aware how different individuals have coped with the demands of the Office. Clearly, the Flora of Australia project has significantly increased the number of requests made to the ABLO since that project has gained momentum. There has also been a tendency for a greater number of urgent requests for information as botanists try to finalise manuscripts for the Flora series. Although it might be 'safer' to discuss this position after I had returned to Australia, it is more appropriate to discuss the position while I am the incumbent. Although CHAH and ABRS are fully aware of the difficulties faced by the ABLO, I believe that it is appropriate for the

wider botanical community to be more aware of the actual duties. After all, it is the requests made by the Australasian botanical community that shaped the day-to-day activities of the ABLO.

I wish to discuss the following two aspects of the official role and duties of the ABLO: 1. The liaison duties; and 2. Personal scientific research. The liaison duties clearly form a major part of the duties of the ABLO, both in the number of requests for information and assistance and in the amount of time required to process these requests. Gordon Guymer (Austral. Syst. Bot. Soc. Newsletter 71 (1992) 6) published a useful set of guidelines to help those preparing requests for information from the ABLO position. I would recommend that everyone consult this article before requesting information from the ABLO. As a useful guide, I would suggest that everyone should assume that the ABLO only knows what is provided within the request. Although it is relatively easy for the ABLO to search Index Kewensis, the Australian Plant Name Index, Flora Australiensis, and/or other relevant literature, to find the protologue so that the type specimen can be located in the herbarium, rarely is there sufficient time to devote to such searches. During the first six months, I have averaged 74 inquiries per month, peaking at 115 in January. Of course, most inquiries are based on thorough research and sufficient information is provided to ensure that the ABLO's task is as easy as possible.

Of recent years, there appears to be an increase in the number of requests for copies of literature which are not available in Australia. In many instances, the location of the required literature is cited in the source document (e.g., APNI frequently states where the protologue was seen), but instead of requesting an inter-library loan direct to the cited institution, the request is sent to the ABLO. If the protologue is not at K, then this is the most inefficient and most expensive way of obtaining an article. It should be remembered that K generously meets the cost of these frequently lengthy searches. I would encourage everyone to try and locate which institution holds the article before resorting to the ABLO position. It is probably tempting to think otherwise, but it is not easier to obtain an article from Europe or America if the request is made from K rather than from Australia. The role of the ABLO as a *de facto*

Assistant Librarian needs to be questioned and discussed by the botanical community.

Where does all this leave the second part of the ABLO's duties, namely 'personal scientific interests'? However, the real question appears to be, how much personal scientific research does the botanical community expect the ABLO to do? Many botanists have commented to me that the ABLO will not get as much done as he/she had hoped [referring to personal research]. I offer no thoughts either way, but I have been concerned about this issue for a slightly different reason. Whether it is intentional or not, the ABLO's performance is judged, either formally by CHAH and ABRs, and/or as part of casual conversation amongst other botanists. The concern is that it is not clear what criteria are used to assess the performance of the incumbent? Why do many botanists accept, and hence regard it as inevitable that personal scientific research will not be as productive as proposed? This is of particular concern, because these same rules are not applied to the liaison aspects of the position?

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## EXCHANGING ELECTRONIC HERBARIUM-LABEL DATA - A CASE STUDY

Barry Conn  
ABLO

The National Herbaria of Melbourne (MEL) and New South Wales (NSW) agreed to exchange their electronic herbarium-label data for those collections (except for a few selected groups, e.g. *Eucalyptus* s. lat.) held in both institutions. It was hoped that this exchange of data would enable us to evaluate the problems associated with transferring data when herbarium specimens are exchanged between the two institutions. In the first instance, the MEL data (from melisr) was sent to NSW for inclusion into nswdata (the main NSW herbarium-label database). Naturally, the process was more complicated than would be expected with current exchange specimens because some of the MEL duplicate material may

have been databased by NSW already. Therefore, a mechanism had to be instigated at NSW so that duplicate specimens which had already been databased could be identified and compared. However, it seemed sensible for MEL and NSW to undertake this exercise because their databases are very similar structurally, and both use TITAN software. But, the fundamental reason for this co-operation was that Don Foreman (MEL) actually provided data. In typical Barry Conn style, after setting up the project, I left Gary Chapple and Dianne Godden (both NSW) to carry out all the hard work, while I waltzed off to England. I sincerely thank them for finding time in their busy work schedules to evaluate the procedures required to exchange this data.

The melisr data (MEL) were run through a UNIX script to bring it as much into line with nswdata as possible. The following manipulations were carried out:

1. The Intraspecific rank was assigned to a separate field (MEL), so it had to be joined with the infraspecific epithet in *infrasp. name* field (NSW);
2. Intraspecific ranks were referred to as 'ssp' and 'var' (MEL), these were converted to 'subsp.' and 'var.' (NSW);
3. Collectors surname and initials were in the same field (MEL) and had to be split into a surname field and an initials field (NSW);
4. Geographical subdivisions was included with the locality description (MEL) and had to be separated (NSW). Fortunately, the subdivision was always stated at the beginning of the locality description (MEL) and so, could be split off fairly easily. The actual form of the Subdivision descriptions (MEL) had to be converted to follow those used by NSW (e.g. 'Northern Tablelands' to 'N. Tablelands');
5. Geographical State was not given (MEL) and so, had to be deduced from subdivision. State is a separate field in nswdata;
6. Abundance was included with the collection site

description (MEL), this had to be separated from this field and included with the Plant Description and Notes field (NSW). This was not always possible because abundance varied in its relative position within the site description field (MEL) and could not be automatically captured if it did not occur at the beginning or end of the field. Furthermore, future data will have to be manually scanned to ascertain particular references to abundance so that the awk/sed scripts can be updated.

Once the MEL data (from melisr) had been manipulated, it was loaded into a clone of nswdata and this separate database was then linked to nswdata. It was agreed that data should only be loaded into nswdata if and only when the NSW duplicate herbarium specimen was located. Once it was clear that a specimen had not been previously databased into nswdata, a combination of collector and collector's number (as unique identifiers) was used to automatically transfer the data from the linked clone database (modified melisr) into nswdata. After an individual record had been drawn across into nswdata it was manually checked for any discrepancies or errors before storing in nswdata. It was found that the data 'massage' did not eliminate all the problems of inconsistent data; however, most of the problems were minimal. Examples of the problems which had to be repeatedly corrected were:

1. State Forests and other special reserves were included in the Locality field (MEL), whereas they are separated into a distinct field (namely, Spec. geog. unit [=Specific Geographic Unit]) in nswdata;
2. Abundance values needed to be taken out of Site Description (MEL) and included in the Plant Description and Notes field (NSW)(as mentioned above).

Although, the transfer of data from MEL to NSW has, in some ways, been a relatively trivial exercise, it has consumed a very large amount of time and effort, far above what should be necessary when both institutions are parties to the HISPID standard. This highlights a potentially serious problem which I believe has not been addressed. Although I completely support the notion that HISPID does not

have anything to do with the structure of databases, but rather is only about the format for exchanging data, changes made to a database do affect the ease of exchange of data. Contrary to the comments of the more highly computer literate individuals amongst us, 'botanists-come computer programmer/database managers' do not have the time, financial resources, and/or expertise to deal with all the variations that exist in the various databases throughout Australia. I have also found that those institutions which are fortunate enough to have a Computer Section are frequently unable to respond to these structural variation because of other commitments. The difficulties of transferring data from the structurally more complex database of adherb (AD)(which also uses TITAN software) has not been evaluated, but it is expected to be

unrealistically difficult to transfer data from nswdata to adherb, even though the exchange of data from adherb to nswdata will be easier. Therefore, I would strongly urge all those involved with the design and maintenance of in-house databases to carefully consider the consequences of any changes which they are planning to implement. Since the HISPID standard is the result of a collaborative effort, we should continue this sense of collaboration by ensuring that the data are actually available for exchange to all relevant institutions. It is not enough to simply have the necessary data included in the database (hence, at least theoretically available for exchange) when the potential receiver does not have the expertise to manipulate that data into a form which is compatible with their database.

## COMMENTARY

### INTERNATIONAL TRANSFER FORMAT FOR BOTANIC GARDEN PLANT RECORDS

Barry Conn  
ABLO

The Botanic Gardens Conservation International hosted a small workshop on 30 Nov & 1 Dec 1994 to discuss and consider modifications to the current first version of the ITF standard. The aim of this meeting was to begin the preparation of a draft Version 2 of the Standard which would be completed during 1995. The workshop consisted of James Cullen (Stanley Smith Horticultural Trust, Cambridge), Diane Wyse Jackson, Peter Wyse Jackson, Telka Leadley (all three from BGCI), Richard Piacentini (Phipps Conservatory, Inc., Pittsburgh), Steve Waldren (TCD Botanic Gardens, Dublin), Kerry Walter (Royal Botanic Gardens, Edinburgh), Richard White (The University, Southampton), Bert van den Wollenberg (Utrecht University Botanic Gardens, Utrecht), Catherine Zellweger (Conservatoire et Jardin botanique, Ville

de Genive), and myself (representing the Australian Botanical Liaison Officer position and the Royal Botanic Gardens, Sydney).

Since it was agreed that the first draft of the second version of ITF would be complete by mid-February, I will not give a field-by-field summary of the changes suggested. However, a summary of the general issues discussed is probably useful at this stage. Although ITF Version 01.00 had been an important standard, it was felt that some fields were not long enough and that fixed-length fields were an unnecessary restriction. However, it was recognised that there was still a need for all fields in ITF Version 02.00 to have a recommended length. Finally, it was widely held that several new fields were required. It was agreed that fields should be classified as either mandatory or optional, as has been done in the HISPID standard. Some of the new fields which were discussed at the Workshop included: authorities (for names); family; infraspecific names (e.g. quadrinomials); vernacular names; commercial/horticultural names; condition of health; donor address; literature references; hybrid and parentage;

life-form; fields for tracking scientific names; precision codes for latitude and longitude geocodes; multiple verifications of an accession; conservation threats; habitats; type of material held; fields for tracking individuals within an accession; whether collected in a managed area; and local assessment of IUCN status.

It was noted that several users of ITF had found it difficult to apply because the current documentation was written more for the programmer than for the user. Although there was clearly a need for an ITF User's Guide, it was decided that this was beyond the brief of this Workshop. It was recognised that collections of living germplasm are essentially botanic gardens, either organised as part of these gardens or as separate organisations. Therefore, it was agreed that the Botanic Gardens should communicate with Seed Bank organisations so as to ensure that similar data exchange standards were developed.

Although it was felt that the exchange of data between botanic gardens and BGCI had been adequately addressed by ITF version 01.00, exchanges between botanic gardens were more difficult. In particular, botanic gardens frequently stored more information than was required for exchange using ITF. It was recognised that the information which was lost would be of value to the botanical institution receiving the information. Therefore, ITF version 02.00 should correct this deficiency in the current standard.

Once a draft of ITF version 02.00 is complete, copies will be available for comment. In fact, the format of, or even need for, many fields has not been decided. It will be essential for as many botanic gardens as possible to comment on this draft, so as to ensure that our needs are successfully met.

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## HAVE YOU CHECKED YOUR LOANS LATELY?

Don Foreman  
National Herbarium of Victoria

Recently in response to a request from NSW for the loan of type material of the fern *Cheilanthes*

*clelandii*, MEL staff unearthed what may well be the longest, outstanding, documented loan in the history of the National Herbarium of Victoria.

A search of the cupboards revealed that indeed such a specimen may well have resided at MEL for a period of time but now the folders were empty apart from two handwritten labels.

One stating "Gawler Ranges (Dr Cleland) *Pteris* sp" with an additional annotation by Mueller "*Cheilanthes clelandii* F.v.M."

The other label is the one which would surely warm the hearts of curators everywhere and again in Muellers hand simply states "Specimens lent to Prof. Luerssen Febr. 1894".

A quick check in TL2 reveals that Prof. Christian Luerssen was a German botanist living between 1843 and 1916. Rather sadly it is also recorded Prof. Luerssen's herbarium and types are now destroyed and one can only assume the type of *Cheilanthes clelandii* has suffered a similar fate. If not we would of course be delighted to have it back.

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## AN AUSTRALIAN INSTITUTE OF BIOLOGICAL SCIENCES?

Bob Hill,  
PPAA

In the last issue of the ASBS newsletter, David Greenwood responded to Mike Crisp's earlier comment on the need for an "umbrella organisation" and he used the Palaeobotanical and Palynological Association of Australasia as an example of another organisation which had a similar problem. As president of PPAA and a Fellow of the Australian Institute of Biology, I feel compelled to respond to both David and Mike.

PPAA is a small organisation, but we have a vigorous newsletter and serve an important function in the scientific community. David Greenwood wrote that it is unnecessary and

undesirable to suggest that PPAA could be subsumed under a more broadly defined ASBS. I note that this suggestion has never come to the PPAA executive, and it is not only unnecessary and undesirable, but also impossible, since many of our members are not in Australia. Note that our title includes "Australasia" not "Australia", and hence we serve a different audience. It is also important to note that PPAA serves a much wider set of disciplines than systematics, and even has several members who are not biologists at all. For all these reasons PPAA is quite distinct from ASBS and will remain so.

The same applies to any proposed Australian Institute of Biological Sciences, but David Greenwood suggests that there "is an argument" for including PPAA within such an organisation in the future. Such a proposition should first have been raised within PPAA rather than canvassed in the pages of the ASBS newsletter, but it was not. PPAA is affiliated with the International Organisation of Palaeobotanists and the International Commission for Palynologists. Further affiliation seems unnecessary and is certainly uncalled for.

The proposed Australian Institute of Biological Sciences mentioned by both Mike Crisp and David Greenwood sounds suspiciously like the existing Australian Institute of Biology. I am surprised that this organisation has not yet been mentioned. I have only recently become involved with the AIB, but I am an enthusiastic supporter of the concept, especially since it has a strong educational commitment. Maybe the AIB should be included in any future negotiations.

I am not personally very enthusiastic about umbrella organisations, and I believe ASBS has a very strong basis for long term survival. This is not an issue which worries me unduly, but I would need to be very convinced before I would support any move to change a successful formula. I offer my congratulations to Mike for the role he is playing as ASBS president, and look forward to seeing ASBS increase in strength.

## NOTES FROM SOME READING

George Chippendale  
4 Raoul Place, Lyons, ACT 2606

While reading Nancy Cato's book "North-west by South", mainly about Sir John and Lady Jane Franklin, I came across the following passage, spoken by Joseph Hooker in Hobart when he was 23:

"Wattle!" said Hooker, "What'll they think of next in nomenclature, I wonder? There's that lovely unique tree, the eucalyptus - now what could be more euphonius and descriptive? And what is the popular name? Gum! The beautiful lille *Bossiaea cordigera* - that's Eggs-and-Bacon! and *Acacia melanoxylon* becomes Black Wattle. An ugly name for a beautiful tree."

In a previous book by Nancy Cato, "A Distant Island", I wondered about the dialogue by Ronald Gunn and also by Joseph Hooker, and I wrote to Nancy Cato who was kind enough to give me the following reply:

"As for being able to construct conversations, the documents which give me phrases and expressions of Ronald Gunn's own were his copious letters to Sir William Hooker and others, in which he spoke freely... He found great joy in talking with such men as Joseph Hooker when he visited Van Dieman's Land."

The other quotation, a poem brought to my attention by my wife, Thelma, who searched for it for some time and a friend, June Foster, found it for her. It is from a 1932 collection chosen by Joan and George Mackaness, called "Frolic Fair".

### THE WATTLE IS A LADY

*The Wattle is a lady, in her yellow satin gown,  
The Gum-Tree is a gentleman, with suit of green  
and brown,  
The Hakea is a cross-patch, and he'll scratch you  
if he can,  
The Cabbage Tree's a vain coquette, with every  
leaf a fan.  
The Christmas Bells are tell-tales, for they  
whisper in the breeze,*

*Tecoma's very lazy, for she sprawls and takes her ease,  
 Lambertia is a soldier, in his straight spiked coat of red,  
 Grevillea is an acrobat, see how his arms are spread.*

*A pale bride is Clematis, with her wreath so waxy white,*

*Hibbertia is a little girl, with face so round and bright,  
 Wild Violet is a baby shy, the sweetest ever seen,  
 And Waratah with crown of red is a tall and stately queen.*

Amy Eleanor Mack

## A.S.B.S. INC. BUSINESS

### ARCHIVES OF THE AUSTRALIAN SYSTEMATIC BOTANY SOCIETY, INCORPORATED

Barry J. Conn  
 Royal Botanic Gardens,  
 Mrs Macquaries Road,  
 Sydney, NSW 2000

To ensure that the primary documents of our Society are safely preserved, the first ten years (1973-1983, inclusive) of the archives of the Australian Systematic Botany Society, Incorporated are now housed at the library of the National Herbarium of Victoria (MEL). The original aim of the Executive was to only retain the last ten years of files as current. Now that the archives have been lodged at MEL, the formalities of access to these files will be arranged by the Executive of ASBS, Inc. and the National Herbarium of Victoria.

The files have been organised under the following alphabetical abbreviations:

|      |  |
|------|--|
| AAS  | Australian Academy of Science  |
| ABLO | Australian Botanical Liaison Officer correspondence  |
| ABRS | Australian Biological Resources Survey and 'Flora of Australia' correspondence                 |
| ANZ  | ANZAAS and Mueller Medal; including initial correspondence on the 'Flora of Australia' project |
| CE   | Council Elections - Nominations, Ballot results and correspondence                             |
| CM   | Council Meeting Minutes and correspondence   |

|      |  |
|------|--|
| CIN  | Australian Systematic Botany Society - correspondence on the Incorporation of the Society and continuing legal matters |
| CON  | Australian Systematic Botany Society Constitution and correspondence   |
| GM   | General Meeting Minutes and correspondence   |
| LIST | Membership lists and forms; including thesis lists   |
| MISC | Miscellaneous correspondence   |
| NL   | Australian Systematic Botany Society Newsletter  |
| NTB  | Nancy T. Burbidge Memorial Lecture - correspondence  |
| PMIS | Publication - miscellaneous correspondence   |
| PAA  | Publication - 'Evolution of the Flora and Fauna of Arid Australia' correspondence                                      |
| PCSI | Publication - CSIRO correspondence   |
| PFCA | Publication - 'Flora of Central Australia' correspondence  |
| PHIS | Publication of 'History Symposium'   |
| SYM  | Symposia and Workshops - correspondence  |

The correspondence and files are each annotated by ONE code, which consists of:

- (1) an ALPHABETICAL abbreviation as a PREFIX (as listed above)
- (2) followed by the YEAR (4 digits), followed by a slash (i.e. '/')
- (3) MONTH as a SUFFIX (as 2 digits), followed by a slash.

## REPORTS



**Australian  
Botanical  
Liaison  
Officer**

conditioning system will be soon carried out in the Herbaria of Museo Botanico, Firenze. Therefore the Herbaria will be closed to all visitors from 20 February 1995 until 30 September 1995. In this period, consultation and shipping of exsiccata will be suspended.

### VISIT TO EUROPEAN HERBARIA

During October and November 1994, I visited several European herbaria. I examined the types and other historically important collections in several plant families, including Arecaceae, Blechnaceae, Cyperaceae, Epacridaceae, Lamiaceae, Loganiaceae, Malvaceae, Oxalidaceae, Urticaceae and Xyridaceae. Many nomenclatural and several taxonomic problems were resolved. The herbaria visited included: P and LY (France); G (Switzerland); FI (Italy); B and M (Germany), W (Austria); PR (Czech Republic); and WRSL (Poland). I would like to thank the Directors and staff of these institutions for their generous assistance and friendship. They all willingly gave up a great deal of their time, from their busy programs, to ensure that my brief visit was extremely successful.

### RETIREMENT OF JOSEPHINE O'FLAHERTY FROM KEW

Josephine (Joey) O'Flaherty retired from the Royal Botanic Gardens, Kew on the 28 February 1995. I was very pleased to be able to attend a special function in the Kew Guild Room which was organised to acknowledge the contribution that she has made to this institution. Joey will be known to many botanists in Australia because she managed the flow of loans into and out of K. I acknowledge her generous assistance and wish her all the best from myself and on behalf of all previous ABLO's.

### E-MAIL ADDRESS AT KEW

Rather than produce a long list of email addresses for staff at the Royal Botanic Gardens, Kew, which usually go out-of-date very quickly, use the following alias format:

First initial.last name@rbgkew.org.uk

For example:

b.conn@rbgkew.org.uk

### TEMPORARY CLOSURE OF HERBARIUM OF MUSEO BOTANICO, FIRENZE, ITALY

I can offer no further explanation, but Professor Guido Moggi has informed us that important work involving new pest control measures and an air

If you do not know the name of the person you wish to contact, or you have problems in sending a message to someone at K, then direct your message to:

postmaster@rbgkew.org.uk

Your message will be forwarded on to the correct person or you will receive a reply from this person.

## **DR HUGH SHAW MCKEE (MACKEE) (1912-1995)**

We received the sad news that Dr H.S. McKee died on 14 February 1995, in Noumia, New Caledonia. He was born in Northern Ireland in 1912, completing his Ph.D. at Oxford University. Like other Australian and New Zealand students, my first contact with H.S. McKee was his University textbook, 'Australian and New Zealand botany' by John McLuckie and H.S. McKee (1954). Likewise, his classic text on 'Nitrogen metabolism in plants' (1962) was regarded as essential reading for University students. But, McKee was probably more universally known for his plant collections. He was a compulsive plant collector, collecting from many parts of the world. His extensive collections from throughout New Caledonia revolutionised our understanding of the flora of this region. His contribution to Botany will continue through his plant collections.

## **EXPLORATION IN IRIAN JAYA BY STAFF OF THE ROYAL BOTANIC GARDENS, KEW**

Kew's first expedition to Irian Jaya (February-June 1994) began a new collaborative project on the flora and vegetation of NE Kepala Burung (Vogelkop). This first expedition consisted of Bob Johns (Project Co-ordinator), Martin Sands (both from K), Johanis Mogeia (BO) and Soejipto Muliano (Manikwari). Staff from the University of Cenderawasih, Manikwari campus also participated in field studies, collecting and training. Twelve trips were made into Kepala Burung. More than 1,300 species were collected. Although the next expedition to the area is planned for March 1995,

official immigration requirements look certain to cause delays in the departure date. The next expedition will include Martin Sands, Aaron Davis and Sarah Thomas from Kew. This project is funded by The John D. & Catherine C. MacArthur Foundation.

## **VISITORS TO KEW**

The number of visitors that I was responsible for was much less than for the previous period.

6 Jan 1995 Dr Michael Armitage, member for the parliamentary State Seat of Adelaide, South Australia, discussed the promotional activities of the Royal Botanic Gardens, Kew, with Mr Roger Joiner (Education and Marketing Department).

17 Jan 1995 Ms Grazyna Paczkowska (PERTH) managed to spend a day in the herbarium during a private visit to Europe. She was particularly interested in the ALICE software program being used at K.

Jan-Feb 1995 Mr Andrew Doust (NSW) made several visits to the Herbarium during January and February, working with me on the second part of our systematic studies of Xyris (Xyridaceae).

Barry Conn

## **Email**

new address

Playford, Julia

J.Playford@botany.uq.oz.au



**Australian  
Biological  
Resources  
Study**

**FLORA OF AUSTRALIA VOL. 55  
LICHENS - LECANORALES 2,  
PARMELIACEAE**

As foreshadowed in the last report, this volume was published on 21 December 1994. It is available from CSIRO Bookshop, PO Box 89, East Melbourne Vic. 3002, from AGPS bookshops in the State capitals, and from major commercial bookshops.

**PARTICIPATORY PROGRAM**

Applications have now been called for projects to be funded during the 1996 calendar year. The groups targetted this year in the Flora area are:

Vascular Plants: Myrtaceae p.p. (*Myrtus* alliance; *Leptospermum*; *Agonis*; *Conothamnus*; *Beaufortia*; *Regelia*; *Calothamnus*)

Lichens: Lichinaceae; *Lobaria*

Fungi: Oomycetes (excluding Halophytophthora, Saprolegniaceae & Leptomitales)

Algae: Rhodomeliales; Nematiales; Batrachospermales

Please remember also the two points made in the last Newsletter: other important projects with a timeframe critical for 1996 will also be considered, and topics advertised in previous years can also be applied for on the same basis as those on this year's priorities.

Application forms are available from the ABRS Secretariat or from most major Museums, Universities and Herbaria. Applications close on 10 April, and late applications will not be considered.

**FLORA OF AUSTRALIA VOLUME 1**

Work on the new edition of the introductory volume to the Flora of Australia has now begun. We have invited authorities on a range of topics to pre-

pare contributions for a completely restructured volume. It is hoped that the final work will prove to be as popular and useful as its predecessor, serving as a source document to the major literature on the taxonomy and biogeography of the Australian vascular flora. While some chapters will seem familiar (e.g. the history of Australian botanical exploration, background to the Flora of Australia project, introduction to the classification system, and the written key to families) others will be new or substantially rewritten. There will be review-type descriptive accounts of the present Australian environment, landscape history, and descriptions of the terrestrial flora, including structure, major taxonomic components, paleobotany, and factors involved in its evolution and biogeography. Human influences on the vegetation, utilisation of Australian native plants, and aspects of the vascular aquatic flora will also be reviewed.

An innovation so far as the Flora is concerned will be the inclusion in the new Volume 1 of an electronic interactive key to the families of Australian vascular plants. This particular part of the project is being coordinated by Laurie Adams, but we are hoping to involve a large section of the botanical community in its preparation and testing. In particular, we will shortly be writing to past, present and future contributors to the Flora asking them to score the parameters of "their" family in a character list, but using only those characters relevant to Australian taxa (native and naturalised).

**LOOKING AHEAD**

ABRS editing staff are hard at work on a number of volumes at present. Four volumes are expected to go to the printer this calendar year. The first will be Flora of Australia vol. 16 (Proteaceae 1) which should be ready for the press in May. It will be followed a month or two later by Fungi of Australia vol. 1 (Introduction), Flora of Australia vol. 28 (Gentianales) and Flora of Australia vol. 48 (Gymnosperms and Ferns). Four additional volumes of the Flora of Australia are expected at this stage to go to press in 1996: vol. 17 (Proteaceae 2), vol. 2 (Magnoliales to Papaverales), vol. 5 (Amaranthaceae to Plumbaginaceae) and vol. 1 (Introduction, 2nd edition).

Tony Orchard  
Executive Editor, Flora of Australia

## PERSONAL NEWS

### PROFESSOR PETER GORDON MARTIN (1923-1994)

#### A Personal Tribute

Peter Martin died on December 15 after a long illness with cancer. He kept his affliction quiet, so his passing was a shock to many people, especially because he was active until near the end. Readers of this Newsletter may be surprised to learn that he never considered himself a systematist, even though virtually all his publications of the last 10 years appeared in systematics literature.

Although his background was in genetics, Peter was a biologist in the broad sense, with expertise in mammalogy, genetics, systematics, molecular biology, evolution and biogeography. This partly reflected the period of his education and early development as an academic, during the post-war boom in Australian universities, when biology was just breaking out of its separate botany and zoology straitjackets. But it also reflects his own personality. He always had a breadth of vision, and a fascination with new ideas. David Hayman, his contemporary and colleague, said that he had a rare ability to judge which new developments were important. He championed several research fields before they became fashionable, for instance evolutionary genetics, continental drift and molecular phylogenetics.

As a star undergraduate at the University of Adelaide, Peter Martin was identified as an academic of the future and given an offer of appointment some years in advance, so that he could prepare himself to develop and teach a new course in general biology. In the words of David Hayman, imagine a university administration doing that today! He took on this task with relish. In those days, genetics was not even taught at Adelaide University, but he decided to remedy this situation by filling this and other gaps in his own knowledge during his postgraduate studies. Thus, when he started

teaching as a new graduate, he was already a well-rounded biologist. While researching the photographic records from the Koonamore Vegetation Reserve (now the T.G.B. Osborn Vegetation Reserve), I found a picture of his third-year field class taken in the early post-war years. I was impressed by his fresh-faced youth and enthusiasm that beamed out of the photograph.

Peter transmitted his enthusiasm for teaching to his students. All his career he taught first-year biology, even after retirement when he was no longer obliged to do so. Many academics avoid first-year teaching at all costs, and in too many departments this 'chore' is relegated to the most junior of staff ('it is good for them to be thrown in at the deep end!'). By contrast, Peter rightly believed that the first year is the most important of all, and its teaching should be given to only the most outstanding lecturers. To attract the best students into second year, third year and beyond, it is necessary to win their hearts and minds in their first year. Peter did this with panache. I have heard many describe his teaching as inspiring, including Helen Caldicott during a radio interview. I went to Adelaide University planning to become a chemist. Biology was my fourth, optional first-year subject. Peter Martin's lectures changed all that.

His research career commenced in marsupial genetics but as a result of his appointment to the Botany Department, he switched to plants. Later, he was appointed a professor at a relatively young age (mid 40s). For a while he worked in evolutionary genetics, for instance cytology and the evolution of genome size, but the new theory of plate tectonics brought a dramatic change of direction. In the early 1970s, when I was a student under him, many geologists did not accept continental drift (some still don't), and most biologists had never heard of it. But Peter had, and realised its importance. He brought Ronald Melville from Kew Herbarium to our department to give a series of lectures on the subject (as well as on his theory of angiosperm origins) and required all academic staff

and postgraduate students to attend. This caused resentment in some quarters.

It was a sabbatical with Boulter in the UK that really started his most important research. At that time nobody in the world except a handful of specialist biochemists were sequencing large biological molecules. However, Peter Martin realised the potential of such sequences for studying evolution, so he went to learn from one of the experts. He recognised that phylogenetic analysis of molecular sequences could be a key to unravelling the history of continental drift, by dating the vicariance events. These are postulated to occur when one continent rifts in two, leading to isolation and speciation of the newly separated populations. Peter was especially interested in vicariance across the Pacific Ocean, as are so many biogeographers, including myself. That the broadest ocean in this planet should separate some of the most closely related species is a paradox, and requires bold hypotheses to explain it. Contrary to some textbooks, the current plate tectonic paradigm does not satisfactorily resolve this conundrum. For instance, plants and animals seem to show different historical sequences in the relationship of Australia, South America and New Zealand. Fully aware of the significance of this problem, Peter was hell-bent on its solution for at least the last 20 years of his life. I remember his trying to persuade new post-graduate students in systematics to work on the phylogeny of Gondwanan groups. In his own work he started out sequencing proteins, and when DNA sequencing technology became available, again he was one of the first systematists to use it. His research was partly aimed at resolving the still-controversial basal relationships of the angiosperms, but he always focussed on ancient taxa that are disjunct across the Pacific, e.g. Proteaceae, Nothofagus, Winteraceae, Solanaceae. When he died he was tackling one of the most fascinating groups of all: Podocarpus. John Conran is continuing this work with Julie Dowd, Peter's assistant and co-author.

The importance of his research was widely recognised overseas, perhaps more so than at home, and he received many invitations to international meetings, some of them very high-powered. He published in leading international systematic and

molecular journals, but he never neglected our own Australian journals of botany.

His wife Beryl's talent at painting with a strongly botanical theme was a happy combination with his own interest in plants. Not only did he suggest his favourite flowers as subjects, but he also grew them at home for the same purpose. Peter's garden is a lovely blend of Adelaide foothills bush and well-chosen exotics.

Peter's children are carrying on their father's legacy of high achievement. Mandy is one of Australia's leading visual artists, and Nick is a successful research geneticist in Queensland.

Although his public presence was commanding, privately Peter Martin was rather reserved. Nevertheless, as a student and young scientist, I found him a warm and generous mentor. When Ian Noble and I completed our Ph.D.s and were about to depart for jobs in Canberra, he took us aside for a cup of coffee, a pat on the head and an encouraging chat about our budding careers as scientists. He maintained a supportive interest in me ever since.

A seminar in his memory will be held in Adelaide in May. For details, contact John Conran at the Botany Department, University of Adelaide.

Mike Crisp

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## IN MEMORIUM

### RU HOOGLAND

To most Australian botanists, Ruurd Dirk Hoogland, born Leeuwarden, The Netherlands, 1922; died Paris, France, 18 November 1994, was practically a stranger. Yet he lived in Australia from 1952 until 1981, nearly three decades.

Some essential biographical details are given in the *Flora Malesiana Cyclopaedia of Collectors* (Supplement 1958 and Supplement II 1974) and in the dedication of the *Flora of Australia* volume on Norfolk and Lord Howe Islands (vol. 49). These will not be repeated here.

During his time as leader of the CSIRO Division of Land Research & Regional Survey's plant taxonomy group, two of Ru's major achievements were the extensive acquisition of library materials for the CSIRO herbarium in Canberra and the establishment of high-standard methods for field work and herbarium curation.

With his superb knowledge of the systematic literature, Ru was able to select the most relevant items to support a herbarium dealing with the Australasian flora. It was fortunate too that the 1950s and 60s were times of expanding economies, with funding available to purchase the older secondhand items then coming onto the market; it is inconceivable that sufficient funds would be so forthcoming at present. In the herbarium, Ru's specimens stand out both for their being well-selected material and for their having been prepared and dried to a high standard. This is particularly the case with his New Guinea collections. Ru insisted upon drying in the field, rather than preserving the material in formalin or alcohol for later drying back in the herbarium. These field techniques were based upon those developed by the greatest of all New Guinea collectors, L.J. Brass. One might think that the number of collections made by Ru during his time collecting in Australasia, about 11,000, is not large in itself. However, as his average number of replicates was around 8 per collection, Ru was responsible for adding nearly 90,000 quality specimens to the world's herbaria. As there often is more than a single sheet per replicate (e.g. flowering and fruiting sheets) these herbaria probably are enriched by about 130,000 sheets of material as a result of his work.

My first memories of Ru go back to 1964 when, having come to Canberra over a weekend for an interview for a position in the herbarium, I stayed at his home. I remember that during the weekend we went to the government nursery at Yarralumla to see some *Rhododendron* material which Ru had sent from New Guinea. Ru either brought to Australia, or developed in his early days here, a somewhat critical view of the average Australian's outlook on life (She'll be right, mate) and his expression "bloody Australians" had some bite to it. This mellowed

with time, and in the years immediately before his departure to Europe the venom had been replaced with decided tones of affection. Ill-health, caused by myasthenia gravis, forced his early retirement from ANU, to which he had moved in 1968. Sadly, he never fully recovered his former vigour although his spirits remained remarkably high for one with his condition. Ru was always willing to share his knowledge with people with an interest in systematics and he would have made a good teacher; it is strange, therefore, that he attracted no students while at ANU.

A comparison of the photograph of Ru in the 1958 FM Supplement with that in the Flora of Australia volume is of some interest, and one might well speculate as to the reasons for the contrasting impressions they have on the observer. Both of the people depicted are strangers to me; the Ru I knew and came to respect is found in between.

A measure of the esteem in which Ru was held by fellow botanists can be gauged by the number of plants named in his honour (there are more in the pipeline):

*Archidendron hooglandii*  
*Epilobium hooglandii*  
*Evodiella hooglandii*  
*Hibbertia hooglandii*  
*Hibiscus hooglandianus*  
*Macromitrium hooglandii*  
*Maesa hooglandii*  
*Mucuna hooglandii*  
*Myristica hooglandii*  
*Nastus hooglandii*  
*Olearia hooglandii*  
*Orthotrichum hooglandii*  
*Pachynema hooglandii*  
*Palmeria hooglandii*  
*Pandanus hooglandii*  
*Poikilogyne hooglandii*  
*Potentilla hooglandii*  
*Rhododendron hooglandii*  
*Serianthes kanehirae* var. *hooglandii*  
*Vaccinium hooglandii*

Lyn Craven, herb. CANB

## REVIEWS

### **THE DEVELOPMENT OF BIOLOGICAL SYSTEMATICS: ANTOINE-LAURENT DE JUSSIEU, NATURE, AND THE NATURAL SYSTEM**

By Peter F. Stevens. Columbia University Press,  
New York. 1994. xxiii+616 pp. ISBN  
0-231-06440-3. US\$70.

The study of history can be important for a number of reasons, I am told, not the least of which is the intention to not repeat the mistakes made by our predecessors. It will probably sound cynical if I suggest that this good intention usually fails, and that much of history seems to be an endless repetition of the same stupidities, but it seems to be true none-the-less. As an aside, I could probably inject a positive note by pointing out that we seem to be getting more efficient at producing these mistakes, which may be one way of defining the much-vaunted idea of "progress". Unfortunately, this efficiency is rather similar to the way that rote learning allows you to repeat your lessons verbatim without understanding any of them; which is not really all that positive now that I come to think of it, so perhaps I shouldn't have mentioned it.

However, an understanding of the historical context also seems to be a necessary prerequisite for an effective appreciation of the current status of any intellectual endeavour, and it is for this reason that the intellectual history of systematics has considerable relevance for all of us. This context is often missing from university teaching, or is glossed over in a preliminary lecture that is devoted more to trying to organize the semester than to trying to organize the conceptual framework within which the ideas will be taught. This is not just because the academic staff are ignorant of much of the intellectual history of our profession (although many of us undoubtedly are), but it is more because there have been very few detailed studies of biological systematics that could provide a historical

framework for our own understanding of the subject. Ernst Mayr's "The Growth of Biological Thought" is a brave step in the right direction, but its broad sweep necessarily means that a detailed analysis of particular concepts is missing, and systematics is thus not necessarily well-served by this book.

So, there is a gap here for anyone who feels the inclination to delve into our philosophical past. For example, how many influential systematists have had recent book-length analyses of their life and work? If you can name three, then you are doing very well, and from our own personal perspective Augustin-Pyramus de Candolle, George Bentham and Joseph Hooker are not amongst them (although Robert Brown is). Without critical evaluations of the life and work of individual systematists there can be no effective historical context, and without detailed comparisons of the historical development of systematic concepts there can be no intellectual context.

However, the idea is often expressed that the history and development of systematics in the nineteenth century is an uninteresting problem. This is, unfortunately, a fairly ignorant stance, as it is often based on fundamental misunderstandings of the theory and practice of the people involved (I separate these two ideas because it is perfectly clear that articulated theory does not always coincide with actual practice for many people). For example, the critical distinction between grouping (forming taxa) and ranking (placement of those taxa in a hierarchy) has rarely been made in the historical literature, and yet it is a keystone in systematic thought. Perhaps the problem lies with systematists themselves, who have often emphasized that their's is largely an empirical science and have shown a disdain for explicit theory; and historians of science have, quite naturally I think, shown a predilection for analyses of developments in theory rather than in natural history.

Fortunately, historians of science are now

starting to show an active interest in systematics, and more importantly systematists are starting to show an interest in their own intellectual history. So, the dearth of critical analyses may begin to be redressed. What this will probably lead to, as Peter Stevens suggests in his book, is "the beginning of a re-evaluation of our understanding of the history and conceptual underpinnings of systematics".

Peter Stevens' stated reason for delving into this area was the need to teach it (in a class called "History of Botanical Systematics"), along with a realization that little has ever been said about systematics in the early nineteenth century. In particular, not much in the way of critical analysis has existed of the work of Antoine-Laurent de Jussieu, in spite of the fact that he is credited with the seminal publication (his "Genera Plantarum" of 1789) that codified the so-called "natural system" in botany, which has served as a basis for almost all botanical systematic studies since that time (for those of you who are unsure, an artificial system is nothing more than a catalogue of taxa, while a natural system shows relationships among the taxa). So, don't be fooled by the main title of this book, which suggests a far broader topic than it actually covers; however, the subtitle is quite accurate, and what we have here is a very detailed and carefully-reasoned evaluation of the intellectual and conceptual legacy that we owe to the work of Jussieu.

Jussieu's main claim to fame is that he was the person who made "natural" classification the universally accepted concept and primary aim in botanical systematics. Carolus Linnaeus had, of course, already standardized an admittedly artificial classification of plant species, aimed at stabilizing nomenclature as much as anything else. He had also produced a "fragment" of a natural classification system, but never finished it, as the search for a natural system occupied only a small proportion of his time (he was too busy cataloguing). Michel Adanson also advocated the recognition of relationships among species by using numerous features of all parts of the plant, rather than the use of single features as specified by the Linnean approach; and it is Adanson whom Mayr credits as the author of the natural system. However, Adanson's idiosyncratic orthography and rejection of Linnean nomenclature meant that his work was largely

ignored. Thus, it was Jussieu who first produced a successful catalogue of plants that was organized into natural groups, along with a detailed explication of how such groups should be formed; and it is Jussieu's work that has influenced subsequent botanical systematists (being most significantly popularized in Robert Brown's "Prodromus Florae Novae Hollandiae").

Peter Stevens' main thesis in the book is that Jussieu was committed to the principle of the existence of morphological continuity between taxa, so that he believed that higher-level groups did not have essences or even definitions (genera and families were thus not discrete and sharply-bounded entities). This is in stark contrast to the usually-accepted idea that taxa were recognized by nineteenth-century naturalists as being more-or-less discrete; and it is the consequences of Jussieu's ideas on continuity that Peter Stevens explores throughout most of his book. In particular, he challenges the idea that there was a single "natural system" (dating from Jussieu's seminal work) that was simply being refined throughout the nineteenth and twentieth centuries, and shows it to be fallacious - in spite of similar terminology, and even similar groups of taxa, many of the so-called natural systems were based on fundamentally different theoretical concepts.

For Jussieu, theory and practice were closely inter-related, so that his work proceeded on the assumption that parts of continuous nature were already evident (and were outlined in his book) and that it was simply a matter of time before the undivided whole would become apparent in the future (i.e. the gaps that were apparent between some of the families would be filled by newly-discovered intermediate species). This theoretical idea was abandoned by many subsequent botanists, notably Augustin-Pyramus de Candolle, but Stevens points out that the way in which Jussieu formed his groups in practice was very much adopted by his successors, and that it continues to this very day. In other words, during the nineteenth century theory became divorced from practice - systematists adopted Jussieu's practice but without the theoretical rationale on which it was based. There is thus an anomaly, because systematics has remained Jussiean in spirit (an implicit assumption of

continuity), in spite of a fundamental difference in how we view the world (an explicit assumption that genealogy can produce discrete groups).

This anomaly produces a potential conflict that has many consequences, some of which are only now being resolved. The biggest conflict arises when evolution is incorporated into the equation, as it necessarily was after 1859. When this is done, the groups described in a natural system are in theory seen to be the product of the genealogical history of the taxa; and the practical objective for the production of a natural system then becomes to unravel this history. However, it was not clear to the nineteenth and early-twentieth century systematists how to actually go about doing this; and so in practice "natural" groups continued to be established in the same old way, even if their theoretical meaning was now dramatically different. This led to the production of many interesting diagrams showing relationships among taxa, most of which could not be interpreted as having much to do with genealogy (they were often conceived as reticula or maps, with a temporal element simply superimposed). In practice, all that seems to have happened after 1859 is that the concept of an "intermediate" taxon was replaced by the concept of an "ancestor", and everything else remained the same. This particular conflict has only been explicitly addressed in the last twenty years or so, with the development of cladistic procedures that are designed solely for the purpose of analyzing historical pathways.

Peter Stevens concentrates on botanists and botany in his analyses. He defends this stance on the grounds that studies of the history of biology have heretofore been dominated by zoologists and zoology (particularly ornithology), and that ideas of classification and relationships were better developed for plants than for animals in the late eighteenth century. Both of these points are true; but even if they weren't, a book about botany is worthwhile in its own right.

The publication quality of the book is excellent, and there seem to be very few typographical errors. The book is organized into eleven chapters, which occupy most of the first half of the book. Most of the rest of the pages are occupied by two

Appendices, the first with translations (from the original French and Latin) of some of Jussieu's early works and the second with a commentary on A-P. de Candolle. The book ends with the (extensive) footnotes, bibliography, and two comprehensive indices.

If I was going to make a criticism of this book it would be that it often reads like a good longish journal article that has been expanded to book length. This comes across in two ways in the book. Firstly, the writing style does not always make for easy reading, as it lacks verve and enthusiasm (unlike the writing of, say, Stephen Jay Gould, who has also provided book-length evaluations of the historical development of several intellectual concepts in science), and it is therefore easy to wish that some of the ideas hadn't been analysed in quite so much detail. Secondly, some of the discussions seem to be in an awkward order. For example, the chapter about the people who explicitly or implicitly broke with Jussieu's theory of continuity occurs before the one that discusses the people who explicitly or implicitly followed his lead, which makes an unnecessary double jump in concepts (forward then back) rather than being a logical flow; and many of the ideas are discussed at length in one chapter and are then given a detailed summary in a much later chapter, whereas the summary would have been much more helpful if it had acted as the epilogue to the original chapter. This means that the book can be a bit of a challenge if you want to read it all the way through; but I certainly don't regret making the effort, and I would encourage you to do so, too.

Peter Stevens ends his book with the following paragraph, and I feel that it is only fair that I give him the last word here, as well: "As a systematist, I have been alternately depressed and elated as the themes of this book developed. I am depressed when I reflect on the long history of the confusion that is still evident and pervasive even now: systematics is a discipline that has not clearly separated the development of knowledge of plant relationships from the provision of identification services for humanity, and its practitioners have not been silent about their disdain for theory. Systematists have, in part, themselves to blame when they complain about the low esteem in which their discipline has been (and is) held. I am elated, however, by the prospect

that the discipline does have a chance to open up: systematics can free itself of its undue reverence for tradition if systematists come to understand more about the development of that tradition in its historical context."

David Morrison

Department of Environmental Biology and Horticulture

University of Technology, Sydney

## FRUITS OF THE RAINFOREST: A GUIDE TO FRUITS IN AUSTRALIAN TROPICAL RAINFORESTS

Text by Wendy Cooper, illustrations by William T. Cooper. GEO Productions, Sydney. 1994. 327 pp. ISBN 0 646 19803 3. A\$75

How often have you found fruit on the rainforest floor and peered quizzically into the canopy for some clue as to their origin and identity? Could this book help bridge the gap between specimen and name, between nature and knowledge?

At first viewing, I was struck by the beauty and technical accuracy of the colour illustrations. Each plate illustrates around four or five species, showing whole fruit, usually fruit in transverse section and often seeds or weathered fruit. In some cases where fruit are large a plate may illustrate just one or two species (e.g. *Trichosanthes*). More than 620 vascular plant species are illustrated at life size. The plants (various life forms are represented) are primarily of North Queensland rainforest, but some 100 extend to N.S.W. and 75 to the N.T. On the facing page are line drawings of the leaves of each species as well as brief descriptions of the fruit, leaves, growth habit, fruiting season and distribution. The edibility of each species is also noted. The additional illustrations of feeding forest frugivores interspersed through the book are an appealing and interesting feature. At the rear of the book is a brief glossary of botanical terms.

As might be expected, the authors have tended to

concentrate on the more spectacular, larger and fleshy fruits with genera such as *Ficus*, *Syzygium* and *Endiandra* well represented. For these larger fruit, the subtleties of colour and form are captured through illustrations far more effectively than by the best botanical description. Still, many smaller dry dehiscent fruits are also covered, but it was no real surprise that no members of the Orchidaceae, Poaceae or Cyperaceae were included. Such families are really the domain of specialized publications.

This book would make an excellent companion volume to Hyland and Whiffin's *Australian Tropical Rain Forest Trees* interactive key and associated volumes. Indeed a key of some sort is probably necessary to make the most of the book as an aid to identification, although at A4 size the volume is hardly a convenient size for a field guide. As the species are arranged alphabetically by genus and there is no accompanying key, one could eventually tire of flicking through the book in order to make an identification. The authors do not pretend that the work is all-inclusive but it does cover about a third of the rainforest species found in north Queensland (as listed in Appendix 1 of the book).

*Fruits of the Rainforest* is a valuable addition to the book shelves of any botanist or student interested in rainforest while people of all walks of life should enjoy this feast of form and colour.

Ian Cowie

NT Herbarium

Conservation Commission of the NT

DARWIN

## MIMOSACEAE (LEGUMINOSAE-MIMOSOIDEAE)

Nielsen, I.C., 1992.

Flora Malesiana series 1, volume 11, part 1, pp. 226, illustrated. Price: Dfl. 75.00 per copy.

The systematic account of this family (or subfamily) for the Flora Malesiana region has primarily been prepared by I.C. Nielsen, with the

treatment of *Parkia* prepared by H. C. Fortune Hopkins. As is characteristic of the Flora Malesiana Series, the general introductory chapters which precede the systematic accounts of the family/subfamily are extremely thorough and informative. Although it is understandable, the lack of references on the taxonomic work done on the Australian representatives of *Acacia* by Maslin, Pedley, Cowan and Tindale is perhaps unfortunate. Pedley's generic classification of *Acacia* s. lat. is not accepted in this treatment. This being the only mention of his contributions to our understanding of genus. Detailed information is provided on several topics, including: fruit, seed, and seedling morphology; vegetative anatomy (by P. Baas); palynology (by R.W.J.M. van der Ham); and an extensive account of the phytochemistry of the group (by R. Hegnauer).

This account of the family/subfamily in Malesia recognises about 150 native and naturalised species, occurring in 19 genera, of which 15 are native. *Wallaceodendron* is endemic to the region. Apart from the revision of wild representatives, 45 cultivated species are enumerated.

Two identification keys to the genera are provided. One key is based primarily on vegetative characters, together with flowering and fruiting characters, whereas the other is restricted to flowering, fruiting, and seed characters. The inclusion in these keys of the seven most commonly cultivated genera is extremely useful. All genera except the monotypic ones have keys to the species, sometimes with two separate keys, one based on fruiting material and one based on flowering material (e.g. *Albizia* and *Archiodendron* pro parte). The keys are generally easy to use, with the separate flowering and fruiting keys extremely useful for identifying the large amount of herbarium material which is either flowering or fruiting.

The volume is well-illustrated by 37 line drawings (of which 11 are full page drawings) and distribution maps. This is an excellent account of an economically important group for this region, clearly maintaining the scholarly standard of the Flora Malesiana Series.

Barry Conn  
ABLO

## LOWLAND ORCHIDS OF PAPUA NEW GUINEA

O'Byrne, P. (1994)  
(National Parks Board, Singapore Botanic  
Gardens: Singapore), 584 pp.

This book illustrates and describes the lowland species of orchids of Papua New Guinea which occur below an altitude of 1000 m. However, the title is slightly misleading because it does not deal with 'Cypripedioideae, Orchidoideae and many genera which occur in the PNG lowlands' (O'Byrne, p. xviii). In fact, only selected species are described. The book is well-illustrated with line drawings and with some colour photographs. Although the lack of keys to genera and species is slightly unfortunate, this book is a valuable contribution to our understanding of the flora of this region.

Barry Conn  
ABLO

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## FLORA OF VICTORIA. VOLUME 2: FERNS & ALLIED PLANTS, CONIFERS & MONOCOTYLEDONS

Edited by N.G. Walsh & T.J. Entwisle. Inkata  
Press. 962 pp. ISBN 0 409 30849 8. A\$195.

Living as we do in the only State bordering on all other mainland States and Territories (except the ACT) South Australians may have the most interest in other people's regional Floras. Conversely, it has been said that, at least in part, it was for this reason that Black's two editions were so widely useful. Willis's Handbooks have been invaluable to us and Neville Walsh and Tim Entwisle's new volumes has been eagerly awaited.

The first taxonomic volume (Volume 2, ferns to Monocotyledons) has been received enthusiastically by all to whom I have spoken.

What can one say about modern Flora's? Really

the basic contents are pretty well agreed on, with only minor variations. The Flora of Victoria is closer to the Flora of Australia on more of the aspects I have looked at than are most. It follows Cronquist, it organises genera and species on the basis of similarities and is the first regional Flora to include distribution maps. It similarly includes references and derivations for generic names and references for specific epithets including synonyms. A conspicuous, if unimportant, difference is in the use of bracketed rather than indented keys.

There are many areas of agreement between virtually all floras. Common names have not been made up for use in the Flora. A statement that those "used by Willis and in general use are retained" means that those in Willis are not used unless in general use. Presumably names in general use but not in Willis would be included. The additional notes, especially on ecology, taxonomy and identifications are very useful. There may be a trend in Floras towards expanding this coverage, partly reflecting a welcome policy shift and partly, especially with ecology, because there is an increasing amount known. The index combines vernacular and scientific names but unfortunately I feel, does not include authors as does the *Flora of Australia*.

The illustrations, largely by Anita Barley, are of

an exceptionally high standard.

We should get into the habit of giving prominence, in publications such as Floras, to dates when manuscripts were given their final thorough check. Simon (1993) is surely an essential reference for the grasses yet there are three discrepancies that I picked up in the first five grass species. Obviously the manuscript had gone to press too early to make use of Bryan's work.

Parts I have looked at (in the grasses again) demonstrate a good first hand knowledge (by Neville himself) and a fresh approach to the problems of identification.

The volume is bulky, nearly 1,000 pages and weighing nearly 3 kg (is the binding strong enough?) and the type is large and clear. On my calculations each of the more than 1,300 species occupy 50% more space than in any other regional flora. But Bob Chinnock recommends it for fit botanists with deteriorating sight. Bob and I do, however, agree that it is a very fine addition to the growing range of Australian Floras.

John Jessop  
Chief Botanist  
Botanic Gardens of Adelaide & State Herbarium

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## NOTICES

### 1996 COMMEMORATIVE CONFERENCE ROYAL BOTANIC GARDENS, MELBOURNE 22-28 SEPTEMBER 1996

Planning for this conference is proceeding well and there are now two major conferences affiliated with the 1996 Commemorative Conference. Together, this series of high quality conferences will provide a strong focus for next years celebrations at the Royal Botanic Gardens, Melbourne. All conferences are being organised by committees based at the RBGM.

|                 | <b>1996 COMMEMORATIVE<br/>CONFERENCE</b> | <b>ASSOCIATED<br/>CONFERENCES</b> |
|-----------------|--|-----------------------------------|
| Sunday, 22nd    | Registration                             |                                   |
| Monday, 23rd    | Scientific Savant                        | Proteaceae (pm)                   |
| Tuesday, 24th   | Scientific Savant                        | Proteaceae                        |
| Wednesday, 25th | One-day excursion/tour                   | Proteaceae/Mycology               |
| Thursday, 26th  | Beyond the Floras                        |                                   |
| Friday, 27th    | Beyond the Floras                        |                                   |
| Saturday, 28th  | Beyond the Floras                        |                                   |
| Sunday, 29th    | Post-conference excursions               |                                   |

For information on these conferences contact on 03-655 2300:

*Scientific Savant*: Helen Cohn

*Beyond the Floras*: Tim Entwisle

*Proteaceae*: Andrew Douglas

*Mycology*: Tom May

## 1. BEYOND THE FLORAS

Preliminary information was distributed last year but session topics and keynote speakers are now almost finalized. The followings session topics may evolve as we approach 1996 and additional speakers (particularly Australia-based) are yet to be invited. This information is provided to give punters a better feel for the content of the conference.

**Opening Speaker:** Professor Ghilleen Prance, Royal Botanic Gardens, Kew

### Current Aspects of Vascular Plant Relationships

Dr Peter Crane, Field Museum for Natural History, Chicago

Dr Mark Chase, Royal Botanic Gardens, Kew

Professor Pauline Ladiges, University of Melbourne [Nancy Burbidge Lecture]

### Vascular Plant Floristics, Biodiversity & Conservation (including state of knowledge in Australian plant groups)

Dr Judy West, Centre for Plant Biodiversity Research, Canberra

Dr Phil Garnock-Jones, Victoria University of Wellington, New Zealand

Dr Chris Humphries, The Natural History Museum, London

Dr Phil Moors, Royal Botanic Gardens, Melbourne

### Non-vascular Plants

Professor David Hawksworth, International Mycological Institute, London

### Applied Systematics Research (Ecology, Pharmaceuticals, Agriculture, Horticulture)

Professor Adrienne Clarke, University of Melbourne [awaiting confirmation]

### Dissemination of Systematics Information (Databases, DELTA, Herbaria, Living collections)

Dr Laurie Martinelli, CSIRO Publishing, Melbourne

## 2. THE SCIENTIFIC SAVANT IN NINETEENTH CENTURY AUSTRALIA: A CELEBRATION OF THE LIFE, TIMES AND LEGACY OF FERDINAND VON MUELLER

The conference will be opened by Dr James Moore, biographer of Darwin. Sessions on the first day will centre on some philosophical issues underpinning nineteenth century Australian science (for instance, evolutionary and environmental theories), and the insights to be gained from studying the careers of scientific luminaries.

On the second day, discussion will be led by Dr Sally Kohlstedt, former President of the American Society for the History of Science, and Ray Desmond, formerly Librarian at the Royal Botanic Gardens, Kew. The main themes will revolve around the practice of science, especially botany, and the interconnections between practitioners across professional, colonial and international barriers.

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## INTERNATIONAL SYMPOSIUM ON PROTEACEAE

The Royal Botanic Gardens, Melbourne, in conjunction with the School of Botany at the University of Melbourne and the Royal Botanic Gardens, Sydney are pleased to announce **The First International Symposium on the Natural History and Biology of Proteaceae**. The symposium will take place at the University of Melbourne from September 22-25 in 1996.

The aim of the symposium is to bring scientists together, who share a common interest in elucidating various aspects of the biology of Proteaceae. One goal is to provide an open exchange of ideas, both domestically and internationally, of assorted aspects of Proteaceae. The symposium is organized around four primary areas of research including 1) systematics and taxonomy, 2) ecology, 3) physiology, morphology and anatomy and 4) paleobotany. It is hoped that the concerted effort of all participants will provide new information and syntheses into the natural history of the family as well as direct future research initiatives.

This first announcement is a call for interested parties to contact the organisers. Participation is encouraged from professionals and students. Additional information is available upon request.

Organizers for the different sessions include Dr. Peter Weston, Professor Margaret Sedgley, Professor Rob Whalen and Professor Bob Hill.

### For more information, please contact:

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or

Peter Weston, Royal Botanic Gardens-Sydney,  
Mrs. Macquaries Road, Sydney, NSW 2000  
phone - 02 231 8142, fax - 02 251 7231  
email - peter@rbgsyd.gov.au  
International phone or fax inquiries - dial 61 and  
drop the first 0

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## JESSE M. GREENMAN AWARD NOW \$1000

The Greenman Award, a certificate and a cash prize of \$1000, is presented each year by the Missouri Botanical Garden. It recognises the paper judged best in vascular plant or bryophyte systematics based on a doctoral dissertation published during the previous year. Papers published during 1994 are now being accepted for the 27th award, which will be presented in the summer of 1995. Reprints of such papers should be sent to Dr. P. Mick Richardson, Greenman Award Committee, Missouri Botanical Garden, P.O. Box 299, St. Louis, Missouri 63166-0299, U.S.A. In order to be considered for the 1995 award, reprints must be received by 1 June 1995.

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## 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.

Members \$30; non-members \$50. Postage \$10.

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 horticulturalists, 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.

### **Australian Systematic Botany Society Newsletter**

Back issues of the *Newsletter* are available from Number 27 (May 1981) onwards, excluding Numbers 29 and 31. Here is the chance to complete your set. Cover prices are \$3.50 (Numbers 27-59, excluding Number 53) and \$5.00 (Number 53, and 60 onwards). Postage \$1.10 per issue.

Also available are sweaters (\$25), t-shirts (\$15), mugs (\$8 each, or \$42 for a six-pack), and scarfs (\$20).

**Send orders and remittances (payable to "A.S.B.S. Inc.") to:**

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AUSTRALIA



**WARNING**

### **FROM THE TREASURER**

Unfinancial members (there are quite a few) will not receive further Newsletters - this will be your last issue. A renewal form is on page 29.

## A.S.B.S. INC. MEMBERSHIP APPLICATION

### AUSTRALIAN SYSTEMATIC BOTANY SOCIETY INCORPORATED

(incorporated under the Associations Incorporation Act 1991)

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Dr P.G. Wilson

National Herbarium of New South Wales

Mrs Macquaries Road

SYDNEY, NSW. 2000

**A.S.B.S. INC. MEMBERSHIP RENEWAL**

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**SUBSCRIPTION FORM**

Subscriptions for A.S.B.S. membership for 1995 are due on 1 January, 1995. If you have already paid your subscriptions for 1995, please ignore this *pro forma* notice. The *Australian Systematic Botany Newsletter* will not be sent to unfinancial members. Correspondence concerning membership and subscriptions should be sent to the Treasurer at the address below.

Subscriptions for 1995, including the *A.S.B.S. Newsletter*, are:

Ordinary/Institutional ..... \$35.00  
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In addition, your contribution to the HJ. Eichler Research Fund would be most welcome. Please return the form below with your 1995 subscription, plus any arrears, voluntary contributions to the Research Fund or payment for CSIRO journal subscriptions, with any address corrections, to the Treasurer at the address shown below. Your cheque should be made payable in Australian dollars to: Australian Systematic Botany Society Inc.

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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.

## **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 an "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 one of the editors at the address given below. They should preferably be submitted as:- an unformatted word-processor or ASCII file on an MS-DOS or Macintosh diskette, accompanied by a printed copy; as an unformatted word-processor or ASCII email file, accompanied by a fax message reporting the sending of the file; or as two typed copies with double-spacing if less than one page.

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**

A.S.B.S. annual membership is \$35 (Aust); full-time students \$15. Please make cheques out to A.S.B.S. Inc., and remit to the treasurer. All changes of address should be sent directly to the treasurer, as well.

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. Contact one of the *Newsletter* editors for further information.

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PALMERSTON NT 0831

## **Cover**

David Mackay

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